

# REPORT OF THE SECRETARY OF THE TREASURY.

*On the state of the Finances.*

JANUARY 6, 1852.

Referred to the Committee on Finance, and ordered that 10,000 copies, in addition to the usual number, be printed for the use of the Senate.

TREASURY DEPARTMENT,  
December 26, 1851.

The Secretary of the Treasury reports :

## RECEIPTS AND EXPENDITURES.

The receipts for the fiscal year ending June 30, 1851, were—

From customs-----	\$49,017,567 92
From public lands-----	2,352,305 30
From miscellaneous sources-----	943,106 65

	52,312,979 87
Add balance in the treasury July 1, 1850-----	6,604,544 49

Total means-----	58,917,524 36
The expenditures for the same fiscal year were-----	48,005,878 68

Leaving a balance in the treasury July 1, 1851, of----	10,911,645 68
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(As appears in detail by accompanying statement A.)

## ESTIMATES.

The estimated receipts and expenditures for the fiscal year ending June 30, 1852, are :

Receipts from customs, 1st quarter, by actual returns-----	\$14,754,909 34
Receipts from customs, second, third, and fourth quarters, as estimated-----	34,245,090 66
	\$49,000,000 00
Receipts from lands-----	2,100,000 00
Receipts from miscellaneous sources-----	400,000 00

	51,500,000 00
Add balance in the treasury July 1, 1851-----	10,911,645 68

Total means-12339280-----	62,411,645 68
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## EXPENDITURES-VIZ :

The actual expenditures for the quarter ending Sept. 30, 1851, were—  
(As appears by accompanying statement B.)

\$16,937,586 31

The estimated expenditures during the other three quarters, from 1st October, 1851, to June 30, 1852, are :

Civil list, foreign intercourse, and miscellaneous-----	12,380,980 75
Expenses of collecting the revenue from customs-----	1,500,000 00
Expenses of collecting the revenue from lands-----	137,400 88
Army proper, &c.-----	6,308,042 88
Fortifications, ordnance, arming militia, &c.-----	1,675,979 02
Internal improvements, &c.-----	167,457 43
Indian department-----	2,631,647 18
Pensions-----	1,661,503 15
Naval establishment, including dry-docks and ocean steam-mail contracts-----	7,659,129 50
Interest on the public debt-----	4,003,690 70
Purchase of stock of the loan of 1847-----	1,889,475 70

\$50,952,902 59

Leaving an estimated balance in the treasury, July 1, 1852, of-----

11,458,743 09

The estimated receipts for the fiscal year, commencing July 1, 1852, and ending June 30, 1853, are :

From customs-----	\$19,000,000 00
From public lands-----	2,500,000 00
From miscellaneous sources-----	300,000 00

Total estimated receipts-----	51,800,000 00
Add estimated balance in the treasury July 1, 1852----	11,458,743 09

Total means as estimated----- 63,258,743 09

The expenditures for the same period, as estimated by the several Departments—of State, Treasury, Interior, War, and Navy, and Postmaster General, are :

Balances of former appropriations which will be required to be expended this ear-----	\$3,742,214 69
Permanent and indefinite appropriations-----	9,892,550 84
Specific appropriations asked for this year-----	29,257,533 66

42,892,299 19

This sum is composed of the following particulars, viz :

Civil list, foreign intercourse, and miscellaneous-----	\$9,923,952	69
Expenses of collecting revenue from customs-----	2,000,000	00
Expenses of collecting revenue from lands-----	184,620	00
Army proper, &c.-----	8,571,068	06
Fortifications, ordnance, arming militia, &c.-----	1,799,078	00
Internal improvements, &c.-----	1,494,603	81
Indian department-----	1,206,530	32
Pensions-----	2,433,771	97
Naval establishment, including dry-docks and ocean steam mail contracts-----	10,473,953	64
Interest on public debt-----	3,879,690	70
Purchase of stock of the loan of 1847 --	925,000	00
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	42,892,209	19

Leaving an estimated balance in the treasury July 1, 1853, of----- \$20,366,443 00

The total receipts from all sources for the last fiscal year amounted to \$52,312,979 87, which, with the balance in the treasury on the 1st of July, 1850, of \$6,604,544 49, gave, as the total available means for the year ending 30th June, last, the sum of \$58,917,524 36; of this amount \$49,017,567 92 were received from customs.

The receipts for the quarter ending 30th September last were \$15,561,511 83, of which \$14,754,909 34 were from customs; for the corresponding quarter of the previous year the customs yielded the gross sum of \$14,764,043 05. It is presumed that the receipts for the three remaining quarters of the current fiscal year will not exceed those of the corresponding quarters of the last year, and hence the receipts from that source have been estimated at \$49,000,000.

The estimated total receipts for the current fiscal year amount to \$51,500,000. The total expenditures are estimated at \$50,952,902 59. Total receipts for the next fiscal year are estimated at \$51,800,000.

In order to present the various objects of expenditure to Congress in the most distinct manner possible, I have caused the estimates for the next fiscal year to be prepared with such view, and therefore the amounts required for the usual and long established wants of the government have been separated from such as are deemed necessary for the protection and welfare of our newly acquired territories, and demanded in the fulfilment of our obligations, express or implied, in connexion therewith.

It need scarcely be stated that a large proportion of the increased expenditures of the Government in times of profound peace are consequent upon the acquisition of our new territories. The estimates for those territories, in addition to the otherwise ordinary wants of the Government, are deemed essential to their well-being, and are submitted with the hope that Congress will pursue a liberal course of policy towards that younger and weaker portion of our country; as it cannot be doubted that, when a permanent population shall possess them, and consequent advancement in all the elements of

civilization shall be realized, they will amply repay present expenditures by permanent and powerful augmentation of the national wealth.

The expenditures for the ordinary wants of the Government for the next fiscal year are estimated at \$33,343,219 07, as will appear in the detail of estimates already transmitted to Congress.

Those submitted as required by our new territories, and in the fulfilment of our obligations consequent upon their acquisition, amount in part to \$9,549,080 12, as follows:

Survey of the boundary line between the United States and Mexico .....	\$120,000 00
Survey of the west coast .....	150,000 00
Dry-dock in California .....	360,000 00
Mileage and per diem of Senators and Representatives from California, Utah and New Mexico .....	26,462 40
Territorial governments of Utah and New Mexico .....	61,400 00
Judicial expenses, including marshals .....	77,200 00
Expenses of commission for settling land titles in California .....	50,000 00
Expenses of surveys in California .....	18,500 00
Expenses of surveys and sales of public lands in California .....	239,075 00
Pensions under the acts of 1848 .....	431,240 00
Expenses of Post Office Department .....	638,250 00
Excess of expenditures of War Department in the maintenance of troops, &c., in the new territories .....	4,556,709 75
Interest on so much of the debt contracted in consequence of and during the late war .....	2,820,242 97
Making an aggregate of .....	<u>9,549,080 12</u>

Add for the ordinary expenses of the Government, as per printed estimates, \$33,343,219 07, and we have the sum of \$42,892,299 19 as the total estimated demands upon the treasury for the next fiscal year, leaving an estimated unappropriated balance in the treasury on the 1st of July, 1853, of \$20,366,443 90. This sum, it is believed, will be ample to meet the amount required on that day for the redemption of the loan of 1843, then due, of \$6,237,931 35, and such additional appropriations beyond the estimates submitted as may be made during the present and next sessions of Congress.

#### PUBLIC DEBT.

The public registered debt on the 30th November, 1850, was \$64,228,238 37; since which period the following reductions have been made, viz:

On account of the debt of the cities of the District of Columbia, assumed by the act of 20th May, 1836 .....	\$60,000 00
On account of the old funded and unfunded debt .....	2,869 19
On account of the loan of 1843 .....	230,300 00
On account of the loan of 1847 .....	1,070,450 00
On account of Mexican indemnity stock .....	303,573 92
On account of treasury notes paid in specie .....	650 00
	<u>1,667,843 11</u>



In addition to which, the awards under the fifteenth article of the treaty with Mexico, for which the issue of stock was authorized, amounting to \$2,591,213 45, and the instalment under the twelfth article of that treaty, amounting to \$3,242,400, have been paid in cash.

The public debt on the 20th ultimo, per statement C, was \$62,560,395 26, as follows, viz :

Old funded and unfunded debt, payable on presentation ----	\$116,716 79
Debt of the District cities assumed by Congress, \$60,000, payable annually-----	840,000 00
Treasury notes issued prior to 22d July, 1846, payable or fundable on presentation-----	135,711 64
Treasury notes issued under act of 22d July, 1846, do. do.	17,550 00
Treasury notes issued under act of 28th January, 1847, do.	9,500 00
Loan of April 15th, 1842, due 31st December, 1862, do. do.	8,198,686 03
Loan of March 3d, 1843, due 1st July, 1853-----	6,237,931 35
Loan of July 22d, 1846, due 12th November, 1856-----	4,999,149 45
Loan of January 28th, 1847, due 1st January, 1868-----	26,265,150 00
Loan of March 31st, 1848, due 1st July, 1868-----	15,740,000 00
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	62,560,395 26.

Statement D, showing the redemption of treasury notes, is transmitted in obedience to the requirements of the twenty-second section of the act of 28th January, 1847.

"The amount of money expended at each custom-house in the United States during the fiscal year ending the 30th June last, the number of persons employed, and the occupation and salary of each person at each of said custom-houses during the period aforesaid," is transmitted, (statement E,) in accordance with the sixth section of the act of 3d March, 1849.

#### WAYS AND MEANS.

The receipts from customs for the last fiscal year, as before stated, were upwards of forty-nine millions of dollars. Should our importations of foreign merchandise for the current and next fiscal years equal those of the past year, the revenue from that source for the three years ending 30th June, 1853, will have been about \$150,000,000. Aside from demands upon the treasury for our new territories, this sum would have been sufficient to have met the ordinary expenses of the Government, and to have liquidated the entire public debt. Notwithstanding those extraordinary demands, there has been effected, since the first of December last, a redemption of the registered debt to the extent of \$1,667,843 11. During the next fiscal year the loan of 3d March, 1843, due 1st July, 1853, must be provided for, and it is expected may be paid in cash out of the receipts from the usual sources of revenue. The amounts of the land fund to be invested in accordance with law will probably amount to about \$925,000. The old funded and unfunded debt, with the annual payments on account of the debt of the District cities, will probably amount to a further sum of \$61,800, making an aggregate proposed redemption of the public debt during the next fiscal year of \$7,234,792 35.

The premiums paid on \$2,523,200 of certificates of Government stock

purchased at market rates amounted to \$325,655 24, or at a cost of more than one-eighth of the entire debt purchased. These rates, if applied to the whole debt as it stood on the 20th November last, would require for its liquidation, in addition to that amount, about the sum of \$8,074,318 57. The probability is that increased rates will follow a known demand by the Government.

It may well be questioned whether sound policy does not demand that some discretion shall be given to the department to purchase, out of any available surplus revenue, sound State stocks, when it can be done at or near par value, to be held as a sinking fund towards the redemption of the public debt as it becomes due, and thus save to the Government the large premium which otherwise will be required in the redemption by purchase, at market prices, of the stock of the United States. In the opinion of this department such a course is desirable, and it is submitted for such action thereon as may be thought expedient.

The language of the act of 28th September, 1850, extending the grants of lands, has prevented the warrants issued by virtue thereof from passing into the hands of the actual settlers by assignment; and consequently the receipts from that source have not been seriously affected by that act. The receipts from sales of the public lands, for the quarter ending 30th September last, indicate a revenue from that source for the current year of upwards of two millions of dollars. Any excess of receipts over the expenses connected therewith is already appropriated, and therefore those receipts, whether more or less, cannot affect the balance in the treasury subject to appropriation at the end of the fiscal year. The greater or less amount of public debt redeemed will depend upon the increase or diminution of such receipts. The revenue from imports, consequently, is the great source upon which the country has to depend for the means to carry on the Government.

The unexpected addition to the boundaries of our country, covering an area of more than five hundred and twenty-six thousand square miles, has without doubt been one cause of the large and sudden increase of our foreign importations, and consequent increased receipts from custom duties. Our expenses consequent upon such acquisition have more than kept pace with the increase of receipts, and they will remain permanent charges upon the treasury. Revenue to meet these required expenditures must be provided for, and that during a period when our public debt is maturing. It cannot for one moment be thought advisable to presuppose a renewal of any portion of such debt, and therefore it should be our aim to obtain revenue sufficient to meet these maturing liabilities, in addition to the annual expenses of the Government.

The receipts from all sources for the last fiscal year	
amounted to-----	\$52,312,979 87
The appropriations to-----	51,428,414 46
Being an excess of receipts of-----	<u>884,565 41</u>

The estimated aggregate receipts for the current fiscal year are placed at \$51,500,000. The expenditures, as estimated and appropriated, amount to \$50,952,902 59, being an excess of estimated receipts over estimated expenditures of \$547,097 41.

The receipts for the next fiscal year are estimated at \$51,800,000; the expenditures at \$42,892,299 19; being an excess of receipts over expendi-

tures of \$8,907,700 81. Making an aggregate estimated excess of receipts over expenditures for the three years ending June 30th, 1853, of \$10,339,363 63; subject, however, to a reduction to the extent of any appropriations which may be made for this or the next fiscal year's additional to the estimates submitted.

Should Congress appropriate to meet the ordinary wants of the Government, and to cover the expenditures required by our new territories, *as submitted* by this department, the balance at the close of the fiscal year ending 30th June, 1853, will be more than sufficient to meet the amount required on the 1st of July following for the redemption of the public debt due on that day.

The question presents itself, in view of the absolute necessity for a continuance of the present receipts from customs, whether in all the branches of the industry of our country there is that healthy and vigorous action which is the basis of substantial and lasting prosperity. Without this we can with no certainty presume upon any fixed amount of continuous receipts.

The gross exports (table G) for the last fiscal year amounted to \$217,517,130; of which there was of specie \$29,231,880, and of foreign merchandise re-exported \$9,738,695; leaving, as the exports of domestic productions, the sum of \$178,546,555. This presents a large increase upon like exports of any previous year, and exceeds that of the last fiscal year in the sum of \$43,616,322. I regret that this increase is merely of an accidental nature, and likely to be confined to the year just passed.

By reference to table H, it will be seen that, for the year ending the 30th June, 1850, there were exported 635,381,604 pounds of cotton, at an average value of 11.3 cents per pound, giving an aggregate value of \$71,984,616, while 1,026,602,269 pounds exported the year previous was valued at but \$66,396,967. For the year ending 30th June last, there were exported 927,237,089 pounds, valued at \$112,315,317, averaging 12 $\frac{1}{10}$  cents per pound; thus exhibiting an apparent excess in the value of this staple alone over that of the previous year of \$40,330,701.

The very deficient crop of 1849-'50 caused an enhancement in the value of cotton of nearly double that of the previous year, and a still further advance upon the average price of the last year, thus giving the large excess in the aggregate value of the exports before stated. It must be borne in mind, however, that these values as reported are not always the prices realized on sales abroad. They are the declared values of the exporters from our country, against which bills of exchange are usually drawn—and not the prices received on actual sales; and it is notorious that the immense losses on the shipments of cotton during the last year have reduced the amount actually realized by the sales in Europe very far below the official value in the custom-house returns. The crop of the present year has exceeded that of the last, and will, from its abundance, probably restore the aggregate value to near the average of previous years.

The exports of breadstuffs and provisions in 1847 were \$68,701,921; in 1849, \$38,155,507; and in 1851, \$21,918,653, which latter exceeds the exports of 1840, when the corn laws of England were in full force, only \$2,881,118.

The exports of rice for the last fiscal year, as compared with the previous year, exhibit a decrease of \$460,917; and that of tobacco a decrease of \$695,834. The products of planting and agriculture for the past year have been unusually large. All Europe, with inconsiderable exceptions, has been blessed with like abundance; and without some unexpected dis-

turbing causes, seriously affecting markets abroad, there is every reason to anticipate a still further decline in our exports for the coming year.

Our total imports for the last year amount to \$215,725,995, producing a revenue of more than forty-nine millions of dollars. The balances of trade during that period, in addition to the large amounts of the various stocks of the country, caused an export of upwards of twenty-nine millions of specie. The export of the precious metals still continues, and at a rapidly increasing ratio, having amounted already, in the first five months of the current fiscal year, to \$27,594,236, which is nearly equal to the export for the entire year ending 30th June, 1851.

This increased ratio in the export of specie continues, notwithstanding the large supply of foreign exchange, predicated upon the shipment of the cotton crop, which is now rapidly reaching the seaports at the south, and is of course going forward to the European markets in very large quantities. When the bulk of this crop has been shipped, and the supply of cotton bills consequently diminished, the export demand for specie will of course be still further increased, unless there should be a very large falling off in the heavy importations of foreign productions.

With abundant and plentiful harvests, both at home and abroad, with a large excess in the production of cotton over that of the previous years, and its consequent decline in value, and with no evidences of any increased demand abroad for our general exports, the grave and difficult question of our ability to pay for these continued large importations, presents itself for the consideration of Congress.

Should the large importation of foreign fabrics continue to increase, until they drive from the market the like articles of domestic manufacture, it follows as inevitable that the labor of our people now engaged in manufactures must be driven mainly into planting and farming. They must, with equal certainty, produce a superabundance of the latter products, with no increased market for them abroad, and a greatly diminished demand for them at home.

If this state of things shall be realized, it follows that the ability of the people to purchase foreign commodities will be destroyed; importations must greatly diminish in amount, and the revenue at once sink far below its present swollen amount. It should constantly be kept in view that our system of revenue is not compulsory, but depends solely on the voluntary contributions of the people. If our citizens refuse or are unable to purchase foreign goods, the revenue now almost solely relied on must cease, and the government be driven to direct taxation for its annual support, and the ultimate liquidation of a large public debt.

From these considerations arises the great duty of Congress so to regulate foreign commerce, if possible, as to cherish that labor at home, the proceeds of which are our sole reliance for the revenues indispensable to the wants of the government.

I respectfully refer to the suggestions on this subject in my report to the last session of Congress. The experience of the last year has developed no facts which induce me to question the propriety of the changes in the present tariff laws which I then submitted to Congress; on the contrary, information derived from the most reliable sources has confirmed what was then anticipated. Much of the raw cotton formerly wrought into fabrics by the labor of our citizens now goes abroad, and returns to us for sale in

a form vastly augmented in value, and to that extent the labor of our own citizens has been diminished in value and driven into other pursuits.

The history of iron manufacture for the last few years furnishes an instructive lesson to the statesmen of this country. This article enters into such general use in every occupation of life in all countries advanced beyond the first step of civilization, that it may well take rank amongst the necessities of life in this country.

The importations of bar and pig iron for the year ending 30th September, 1842, were-----	100,055 tons.
The estimated production in the United States for that period was-----	230,000 "
Making an aggregate consumption of-----	330,055 "
Or 40 $\frac{3}{4}$ pounds per head.	
In 1846, the importations were-----	69,625 "
And the production estimated at-----	765,000 "
Consumption-----	834,625 "
Or 92 pounds per head.	
In 1848, the importations were-----	153,377 "
and the production-----	800,000 "
Consumption-----	953,377 "
Or 99 $\frac{3}{4}$ pounds per head.	
In 1849, the importations were-----	289,687 "
the production-----	650,000 "
Consumption-----	939,687 "
Or 95 $\frac{1}{2}$ pounds per head.	
In 1850, the importations were-----	337,532 "
the production-----	564,000 "
Consumption-----	901,532 "
Or 86 $\frac{3}{4}$ pounds per head.	
In 1851, the importations were-----	341,750 "
the production-----	413,000 "
Consumption-----	754,750 "
Or 69 $\frac{3}{4}$ pounds per head.	

(See table J.)

Thus we perceive that the actual consumption of iron which, under high duties and prices, was steadily augmenting in quantity, is, under the present reduced rates, both in duties and prices, gradually falling off, notwithstanding the increase of population and the great extension of our farming interests.

That this great interest is in a most depressed condition, the foregoing comparative production, being for the present year less than one-half the capacity of the works, sufficiently attests. From the evidence furnished to this department it is clear that the rolling mills, the charcoal furnaces and forges, are utterly unable to produce iron at the prices at which it is now imported. During the last year many establishments were enabled to sur-

vive only by carrying the iron to the high stages of manufacture, as the making of nails and forged work. At the present time the prices are below the cost of production. If the present policy continues we must witness in a short time the total prostration of this industry, which, once destroyed, will require many years to replace it upon its present footing as to skill and experience; and we shall become dependent upon foreign countries for the most important material in the arts of peace, and the most indispensable of the muniments of war.

I present with this report several tables intended to show the sudden and extraordinary fall in the invoice values of certain articles which, prior to the tariff act of 1846, had been subject to specific duties, but which by that law were made subject to duties ad valorem. It must be apparent, from these tables, that great frauds are practised by under-valuations daily, which no expedient can prevent, unless such articles as are set forth in these tables are charged with specific instead of ad valorem duties.

#### COAST SURVEY.

The coast survey, under the superintendence of Professor A. D. Bache, has made excellent progress during the past year. Its operations have been continued in all the States of the Atlantic and Pacific coast. The series of nearly continuous triangulation spoken of in my report of last year, now extends from the mouth of the Kennebeck, in Maine, to beyond Ocracoke inlet, in North Carolina. The work has been assiduously prosecuted in South Carolina, Georgia, and Florida, is nearly completed in Alabama and Mississippi, and has made good progress in Louisiana and Texas, and on the western coast of California and Oregon. The report of the superintendent will show the details of progress: with it is a most valuable and extended list of geographical positions determined by the preliminary calculations of the work, and extending over the whole coast, which was under survey previous to July, 1850. The numerous hydrographic sketches which also accompany that report, present more than two-thirds of the work of the season which admits of being thus shown in a form suited to immediate use by navigators and others interested in it. A new edition of the hydrographic notices of the western coast is also prepared for publication. The activity and judgment with which this work is prosecuted, and its efficiency and economy, recommend it, in the opinion of this department, warmly to the fostering care of Congress.

The injunction of Congress to employ as many officers of the army and navy on the work as practicable, in addition to the civilians, has been steadily kept in view, and at present sixty-six pay officers and twelve army officers are attached to the survey.

The reasons given in my report in reply to resolutions of the Senate in the early part of the last session of Congress, why the present organization of this great work should be maintained, and its control remain, as at present, in the Treasury Department, met so general an acquiescence on the part of Congress, and, I may say, of the whole country, that I refer to it merely to express my unshaken confidence in the value of that organization, the fruits of which the whole country is now so abundantly reaping.

The Superintendent of the Coast Survey has, under the third section of the light-house act, caused examination for sites for light-houses to be made by the officers of the survey, and has reported, as by law directed, on the

necessity for construction in all cases where the Fifth Auditor had been doubtful. This duty has been promptly and acceptably discharged, and constitutes a new claim on the part of the coast survey to consideration.

#### MINT:

The operations of the mint during the past year have been conducted with efficiency, and with highly satisfactory results. Under the present system the depositors promptly receive the value of their bullion so soon as it is assayed; and though the deposits are made in large masses at short intervals, on the arrival of the California steamers, yet the assays are made and the payments commenced usually within forty-eight hours, and the whole generally completed within an average of five or six days after these heavy amounts of bullion—frequently by two and three hundred different depositors—are received at the mint; and the whole duty is performed without any charge to the depositors, except a mere fractional per-centage for the actual cost of separating the bullion. It is believed that equal facilities are not presented to individuals by the mints of any other nation as are now given by the mint of the United States.

The realization of the value of these large quantities of bullion by the owners of it, without loss, within a few days after it arrives in the United States, is accomplished by means of the heavy bullion fund which can at present be spared without inconvenience from the excess of means in the treasury. It may, however, not always be convenient to keep so large an amount reserved for this purpose from the public funds; and even if it were otherwise, the amount of this fund applied to the purchase and extinguishment of so much of the national debt would save nearly \$400,000 annually in interest now paid by the treasury. It is believed this saving could be effected, and all the advantages at present enjoyed by the depositors of gold or other bullion still retained, if, instead of paying the mint certificates in cash, as is now done, Congress would make them receivable for all dues to the Government, under suitable restrictions as to the time and place of their receipt. I can see no reasonable objection to such use of these certificates, as they are the evidences of so much bullion already in the actual possession of the Government, and for which the coin itself would be forthcoming, generally in a few days, and always in a few weeks.

In connexion with the subject of the mint, I deem it my duty to call the attention of Congress to the present standard value of gold and silver, as established by existing laws.

The relation of gold to silver in the legal coinage of the United States is as 1 to 15.988; in Great Britain, as 1 to 14.288; and in France, as 1 to 15.499. Thus it will be seen that one ounce in pure gold will, in the United States, be equal to that produced from the coinage of 15.988 ounces of pure silver; in Great Britain, it will be equal to that derived from only 14.288 ounces pure silver; and in France, to 15.499 ounces. So soon, therefore, as the state of our foreign commerce, as is now the case, requires an exportation of specie, it is obvious that our silver coin must be exported whilst it can be procured, till the demand for exportation is supplied.

From the operation of this law of commerce arises the present scarcity of our silver currency. At this time, though our silver coin commands a premium in exchange for gold, it is, notwithstanding, still found more advantageous for shipment abroad than gold. In consequence of the premium

on silver, though the relative legal value between it and the latter is as 1 to 15.988, the real intrinsic market value is only about 1 to 15.675. A debtor, then, who offers silver in payment must give it at the rate of 15.988 ounces in coin, by which he loses 313-thousandths of an ounce, for with 15.675 ounces he could purchase one ounce of gold, which latter would be a legal tender for the same debt. It is to be borne in mind, however, that though the relative value of *coin* in Great Britain is as 1 to 14.288, *that* is not the relative bullion value of the two metals, which is about 1 to 15.716, the silver coin of that country being about ten per cent. less in value than silver bullion of the same weight; that is to say, the silver coin of that kingdom will go ten per cent. farther in paying debts than an equal weight of pure silver bullion at the standard value. A difference so great in the value of the two species of coin has not, of course, been the result of either miscalculation or mistake, but was brought about by design, and with the same views which it is believed will render it necessary for us to adopt a similar plan, in order to retain and maintain a silver currency. The obvious policy of this system was, to secure the gold and silver coinage of Great Britain against the fluctuations arising from the relative value of gold and silver bullion there. In Great Britain 14.288 ounces of silver coin is equal in payment to 15.988 ounces in the United States, and 15.499 in France. It is very clear, then, that there is no inducement to export silver coin to either country from Great Britain.

Though the British government manufactures one hundred shillings in coin from bullion intrinsically worth only ninety shillings, it does not permit individuals to bring ninety shillings in bullion to the mint and receive in exchange one hundred shillings in coin; but, on the contrary, the community is obliged to pay the par value for all the silver coin it requires. It must give £5 in pure gold or silver for one hundred shillings in coin. Coinage being a monopoly by the government, the latter can impose such terms as it deems necessary and advisable, and the public, within certain limits, will pay the government its own price for the benefit of the mint stamp.

In fixing, therefore, the proper relative value which should be established between our gold and silver coins, it should not be done with regard to the value of our coins in reference to foreign *coin*, but as to their intrinsic value as *bullion* in foreign countries.

The relative value of our gold and silver coins is, as already stated, as 1 to 15.988; and the bullion value of our silver coin in England is 15.716, being a difference of 272-thousandths, or nearly two per cent. It follows, then, as a matter of course, that on all occasions where the course of our foreign trade requires heavy shipments abroad, our silver coin will be first sought after for that purpose, even at a premium; and, consequently, will disappear from circulation, as it has already done to a very great extent.

There seems to be but one immediate and direct remedy for this evil, and that is the one which has already been adopted in Great Britain, of changing the relative value between gold and silver coin by reducing the intrinsic value of the latter. The opinion of the officers of the mint (in which judicious persons, whose opinions are entitled to great weight, concur) is, that this change could be advantageously made by making our dollar weigh three hundred and eighty-four grains, and the smaller coins in proportion; so that eight hundred ounces of such coin should be worth by tale exactly \$1,000. The director of the mint, in a communication on the subject, says: "If such a scale of weights were adopted, the relation of silver in such



pieces to gold would be as 14.884 to 1; and if the present true relation or bullion value is about 15.675 to 1, the new proposed silver coin would be over-valued by law about five per cent., a very small advance, and far less than in British silver, or in the worn Spanish coin which now monopolizes our circulation."

In the adjustment of this subject, it will be necessary to consider the depreciation in the value of gold which may have taken place already, or shall hereafter occur, in consequence of the immense additional supplies which have been, and will no doubt continue to be, thrown into circulation from California, Australia, and other countries. This consideration might justify a much greater present over-valuation of silver coin, as the future depreciation of gold will probably soon overcome the limit of the present proposed advance.

If this plan is adopted by Congress, it of course will involve the necessity of making silver coin a legal tender only for debts of small amount, say not exceeding ten dollars, which is about the same limit (forty shillings) which has been established in Great Britain.

The subject of a change in the coinage of the country is one of very great importance, and involves consequences which require the most serious consideration and deliberate action. That the present relative value of our gold and silver coin requires some change there can be little doubt; and I have therefore deemed it my duty to bring the subject to the notice of Congress.

The great increase in the amount of bullion which now comes to the United States for coinage, compared with former times, seems to require the establishment of branches to the mint at those points where the largest amount of bullion and foreign coin are received. Any transportation of those articles beyond the places where they are produced, or received from abroad, is attended with delay, risk, and expense, which should be avoided, if possible, without too great expense to the government.

The State of California is now producing gold just certainly equal in amount to seventy-five millions of dollars, and probably equal to one hundred millions of dollars, a year. The information in possession of this department warrants the opinion that this product will not be diminished in amount for many years to come.

The distance from San Francisco, by way of the Isthmus of Panama and New York, to the mint at Philadelphia, is about 5,250 miles. The precious metals there found have, therefore, to be transported that distance and back, at great risk and expense, before the owner can receive its equivalent in the legal coin of the United States. Such a burdensome tax upon the interests of California should be removed by the establishment of a branch mint at the most eligible point in that State.

Nearly all the importations of specie and bullion concentrate at the port of New York; two-thirds of all the customs duties collected in the country are there paid in specie. Sound policy demands that at that great commercial and financial centre a branch mint should be established, which should be the custodian of the large amount of public moneys there collected, and which will enable foreign coin and bullion to be converted most speedily into our own currency, without the risk, delay, and expense of transportation to any other point.

It is believed that the establishment of such an institution at that point would not charge much additional annual expense upon the treasury. The Treasurer thereof would supersede the office of Assistant Treasurer. The

branch mints at Dahlonega, Georgia, and Charlotte, North Carolina, may be converted into assay offices, whereby several superfluous officers might be dispensed with. The deposits of bullion at those establishments have been regularly declining, without any decrease in the annual expenses. The transportation from thence of bars and ingots, the values of which would be attested by Government assayers, would be easily effected at little risk or expense.

For these and other reasons, heretofore expressed by my predecessors, I earnestly recommend the immediate establishment of branch mints at New York and San Francisco, and the discontinuance of those in North Carolina and Georgia as mints for coinage, retaining them as assay offices, under such regulations as to the number of officers, &c., as Congress may deem proper.

The expenses of the mint and branches have of course greatly increased since the accession of California, and will be still further augmented in case Congress should determine to establish the two additional branches at San Francisco and New York. I would therefore suggest for the consideration of Congress the propriety of authorizing a small seignorage on the bullion deposited by corporations or individuals for the purpose of covering the actual expenses of coinage, instead of allowing the latter to remain as an exclusive charge upon the treasury. This, it is believed, is the universal usage at all other national mints, and the charge would be but a mere fractional per-centage, amounting only to a very few cents per ounce.

This department is now required by law to submit annually to Congress the mint assays of certain foreign coins; and it is recommended that this requirement be extended so as to embrace annual assays of the coins of those foreign countries with which the United States have any considerable commercial intercourse, and that an appropriation not exceeding one thousand dollars be made to defray the annual expense of procuring such foreign coin as can only be obtained from abroad.

Invoices of merchandise imported from foreign countries, and subject to ad valorem duties, are required by our existing revenue laws to be made out in the currency of the country whence the shipment is made, and the value which such currency shall have in computations at our custom-houses has from time to time, in respect to several foreign countries, been prescribed by specific laws.

The President of the United States is authorized, by the sixty-first section of the act of 1799, to establish fit and proper regulations for estimating duties on imported merchandise, the original cost of which shall be exhibited in depreciated currency issued and circulated under the authority of any foreign government. In the execution of this power, consuls of the United States are required to certify on invoices of merchandise shipped from the countries of their residence and made out in depreciated currency, or in a currency the value of which is not fixed by our laws, the value of such currency in Spanish or United States silver dollars. It is obvious, however, so far as the foreign currency consists of coin, that the most accurate and reliable method of ascertaining its value, as compared with our own, is by an actual assay at the mint.

While the results of such annual assays will place within the power of the President the best means of performing the duty of establishing fit and proper regulations on the subject, they will also enable Congress to revise and correct from time to time, by further legislation, the values, in custom-

house receipts and computations, of the foreign coins already fixed and regulated by our laws. It is to be observed that the proceeds of the coins thus procured will after assay be returned to the treasury and carried to the credit of said appropriation for subsequent disbursement in like manner. It will therefore be reduced only by the expense of transmitting the coin from abroad and the loss consequent upon their assay.

#### MISCELLANEOUS.

By the second section of the act of 10th August, 1846, the money received from the property of John Smithson, amounting to \$515,169, was lent to the treasury at six per cent. interest, and, in addition to the interest which had accumulated on this fund at the time of the passage of said act, amounting to \$242,129. The treasury has continued to pay, under the provisions of said law, an annual interest of upwards of thirty thousand dollars. During the whole of this latter period a large surplus, including of course this fund, has been lying unproductive in the treasury, and the above annual payment has been an extra charge upon the treasury, and will so continue to be unless Congress should think proper to otherwise order. As there is at present every prospect of a continued large surplus in the treasury, I would respectfully suggest, in order to save this annual payment, that the department should be authorized to make the above fund actually productive by investing the full amount in stocks of the United States, on terms which will render the result equally advantageous to the Smithsonian Institute, as it now is under the present annual payments direct from the treasury.

The Board of General Appraisers, established in pursuance of the third section of the act of 3d March, 1851, entitled "An act to amend the acts regulating the appraisement of merchandise, and for other purposes," promptly entered upon their general duties as contemplated by that act. During the past season one of the board, under instructions of this department, visited the several ports upon our northern frontier, and from the information communicated by him, and the satisfactory manner in which he executed his instructions, the most beneficial results must follow. Another of the board is about to proceed to California, and it is not doubted by the department that the action of the general appraisers will tend very materially to establish that uniformity in appraisements so desirable, and by which both the revenue and the honest importer will be greatly benefited.

By the act of 3d March, 1845, no revenue cutter nor steamer can be purchased or built unless an appropriation therefor shall be made. The several iron steamers then in progress of construction have been condemned as unfit for revenue purposes. Some of the sailing cutters have become unseaworthy, and the number of vessels appertaining to this branch of the service has been therefore necessarily reduced to an extent injurious to the interests of the revenue.

The brig "Lawrence," now on the western coast, is found to be unsuited to this service in consequence of the great expense attendant upon keeping a vessel of her size in commission, and the want of proper sailing qualities. I therefore recommend that authority be given for her disposal, and the building of six additional vessels, which are required for our greatly extended coast.

Should authority be given, as suggested, to sell the "Lawrence" and appropriate the proceeds towards the building and equipping of the six new

vessels, there will be required in addition, to accomplish that object, the sum of seventy-five thousand dollars.

I would respectfully recommend to Congress a considerable increase to the pay of the officers of the revenue marine employed in the Pacific, where their present compensation is entirely inadequate, in consequence of the very heavy expenses to which they are unavoidably subject in that quarter. Whilst the army there has had its pay greatly augmented, and all the civil officers connected with the collection of the revenue receive double salaries to what are paid at the Atlantic ports, the officers of the revenue marine alone are left without any addition to their pay. At this time the seamen on board the revenue cutters there, are receiving nearly the same pay as the commissioned officers, and at an earlier date instances occurred when the former have actually received higher rates than the latter. I would further recommend that any increase of pay which Congress may think proper to grant to that body of meritorious officers be not only for the future, but also have a retroactive effect.

Numerous appropriations were made during the last session of Congress for additional marine hospitals and light-houses, and also for the continuation and completion of similar works previously commenced. Some of these structures have been finished and occupied since the adjournment of Congress, and several are so nearly completed as to warrant the expectation that they may be occupied within the ensuing sixty days. The marine hospitals at Pittsburg, Cleveland, Louisville, Paducah and Chicago, are among those thus finished and occupied, or expected to be occupied, within the period stated. Those in process of erection at Natchez, Napoleon, and St. Louis, are in such a state of forwardness as to justify the belief that they will be finished early in next year. Reports from the officers and agents employed in the superintendence of these works are herewith transmittted, marked L, Nos. 1 and 2.

A site for a marine hospital at Evansville, Indiana, has been selected, but no conveyance of the land has yet reached the department, and all further steps are necessarily impeded until the title is perfected.

A design for the marine hospital at San Francisco was adopted soon after the appropriation for this object was made, and a commissioner appointed and despatched to that city, in March last, with a view to the commencement of this work on a site which was then understood, and still believed, to be the property of the United States. Difficulties, however, presented themselves in connexion with the titles thereto, sufficient, in the opinion of the commissioner, to authorize a suspension of the work. Recent advices, however, lead to the belief that they will soon be removed, when the erection of the building will be immediately commenced.

All, or nearly all of the light-house structures, for which appropriations were made by the act of 3d March, 1851, have been delayed because of the preliminary examinations enjoined by the second and third sections of that act; and several authorized by previous acts on account of the requirements of the joint resolution of Congress, dated 11th September, 1841, as will be seen from the report of the superintendent of the light-house establishment.

The department has not yet succeeded in making a definite contract for the erection of the light-houses on the Pacific coast which have been authorized by Congress, and great difficulty exists in accomplishing that object, in consequence of what is considered the inadequate appropriation in the opinion

of those best capable of judging of the facts and circumstances connected with their construction in that part of the Union.

The department will probably have to await the further action of Congress; and if additional appropriations are made at an early day, the whole of the structures could be commenced in the spring, so soon as the rainy season has terminated, in which case it is believed they can be completed and put into operation previous to the ensuing winter.

In pursuance of the authority given to the department by the eighth section of the act of 3d March, 1851, entitled "An act making appropriations for light-houses, light-boats, buoys, &c.," a board of officers, constituted as directed by the provisions of that act, was organized soon after its passage. The board is composed of the following officers, viz: Gen. Totten and Col. Kearney, of the army; Commodore Shubrick and Commander Dupont, of the navy; Prof. Bache, Superintendent of the coast survey; and Lieut. Jenkins, of the navy, as secretary.

The attention of the board has been directed to the object contemplated by Congress. The result of their labors will be transmitted in a separate report at an early day.

The completion of the experiment for testing the use and economy of the calcium light has been delayed by the sickness of the inventor, and other causes. It is expected, however, that a full report thereof will be made at an early day, which, when received, will be transmitted to Congress.

Sites for the new custom-houses authorized at Bangor, Pittsburg, Louisville, Saint Louis and Mobile, have been selected and purchased, and the necessary measures for the erection of suitable buildings are in progress.

The limited appropriation for the site and building authorized at Cincinnati will not justify the prosecution of that work beyond the location and purchase of the site. I have therefore submitted an additional estimate which is required to enable the department to erect a building adapted to the several purposes specified by Congress.

The restriction placed upon the appropriation for a custom-house and lot at Bath, Maine, has prevented any expenditure for that purpose being made. The purchase of a suitable site will absorb so large a proportion of the appropriation, as to forbid the erection of a building with the limited amount remaining at the disposal of the department. An additional appropriation of twenty-five thousand dollars is therefore recommended.

The requirements of the joint resolution of 11th September, 1841, not having yet been complied with in relation to the site for a custom-house at Norfolk, selected by the commissioners appointed for the purpose, the commencement of that structure has necessarily been delayed.

No information in regard to a proper site for the custom-house authorized in the Territory of Oregon has yet been received.

It is expected that the custom-house at Savannah will be completed and occupied within a few weeks.

The work upon the New Orleans custom-house has progressed as rapidly as circumstances would allow; that at Charleston, South Carolina, will be prosecuted with every desire for its completion at the earliest practicable day.

The intrinsic difficulties in construing and enforcing many of the provisions of our existing revenue and collection laws, and particularly those levying duties on imports, have given rise to a multiplicity of suits against the collecting officers; and often, under the practice of indemnifying collectors who see in

to have acted in good faith, the United States are subjected to heavy bills of costs.

In many instances such suits are not really necessary to procure redress for the party aggrieved, as relief might be generally obtained through an application to the Treasury Department.

By the twenty-fourth section of the tariff act of 1842 it is made the duty of collectors and other officers of the customs to execute and carry into effect all instructions of the Secretary of the Treasury relative to the execution of the revenue laws; and his decision is conclusive and binding upon them. As a proper protection of the officer, as well as to prevent the unnecessary accumulation of costs, it is respectfully suggested that some provision be made by law to prevent the institution of suits against collectors for their acts in executing the revenue and collection laws, until an application shall have been made to the department for relief and denial thereof, prescribing some period within which such application and decision by the department shall be made. Such a provision would seem the more expedient inasmuch as the department cannot in many cases exercise the power conferred by law in advance, and not even on an appeal from the collector's decision, without delaying the business of the importer and the Government. Many cases of this character arise in distant sections of the Union where such necessary delay would often prove of serious detriment to all concerned. The parties would thus save all their legal rights, in any event, and the department could often prevent the necessity and expense of litigation by affording relief.

In addition to such provision, it is also respectfully suggested that some regulation should be made by law, as to costs in suits against public officers, under the revenue and collection laws, and also to enable the department to bring up such cases for final decision to the Supreme Court, whatever may be the amount in controversy. Such a process would settle the law in such cases, and thus constitute the rule of administration, and prevent much expensive litigation. Suits involving the same principles are often upon the docket at the same time, and the decision of one ought to be sufficient to control the disposition of all. Some additional powers to enable the court, in cases involving the same construction of law, to consolidate suits against collectors, whether instituted by the same or different parties, would answer all the purposes of justice, and prevent the unnecessary multiplication of costs. It is also respectfully suggested whether the provisions of the act of 22d July, 1813, entitled "An act concerning suits and costs in courts of the United States," might not be so extended or modified, as to suits against public officers for acts under the revenue and collection laws, as to make some fixed and specific regulations limiting the allowance and amount of costs. Under the provisions of existing laws, plaintiffs within the same State with the collector may commence suit against him in State courts, and the defendant, by petition to the circuit court, can have the suit removed and entered on the docket of that court. As the defendant in such cases will doubtless, ordinarily, if not always, avail himself of this privilege, it is suggested whether such suits might not properly be required to be brought originally in the federal courts, which would be no additional disadvantage to the plaintiff, and would prevent the unnecessary accumulation of costs.

It is desirable that the numerous laws respecting the navigation and commerce of the United States should undergo a careful revision and arrangement. These enactments have been accumulating for more than half a

century, and many of their provisions are complex if not conflicting—others are still unrepealed, though they have long been inapplicable to the condition of our commerce, and of the country. A repeal of obsolete and useless provisions, and a proper arrangement of the residue under appropriate titles, with judicious amendments and additions, and the whole comprised within a single statute, or connected series of statutes, so as to be readily referred to and understood, would be a measure of great public utility, promote a more uniform and faithful administration of the laws, and afford a more certain protection to the interests of the Government and the commercial community.

Further legislation in connexion with portions of our commerce is undoubtedly necessary. Our coasting laws, however wise and useful in the infancy of the country, contain many provisions still in force, which, in consequence of the increased facilities which steam offers for transportation by land and water over our largely extended territory, are not only totally useless, but impose vexatious and embarrassing restraints on the coastwise and interior commerce, without furnishing any adequate security to the public revenue.

In consequence of this state of the laws, importers are often obliged, at no inconsiderable expense, to intrust their business with the custom-houses to agents supposed to be well versed therein; and the difficulty on the part of the officers of the customs, as well as importers, of correctly understanding and applying the provisions of such a complex mass of legislation, gives rise to frequent and expensive litigation, augments the business of the custom-houses and at this department, and gives to the operation of law that uncertainty which it is the duty of every government to avoid.

Respectfully,

THO. CORWIN,  
*Secretary of the Treasury.*

Hon. LINN BOYD,  
*Speaker of the House of Representatives.*

*List of Tables and Statements.*

- A. Statement of duties, revenues and public expenditures during the fiscal year ending June 30, 1851, agreeably to warrants issued, exclusive of trust funds and treasury notes funded.
- B. Statement of duties, revenues and public expenditures for the first quarter of the fiscal year from July 1 to September 30, 1851, agreeably to warrants issued, exclusive of trust funds and treasury notes funded.
- C. Statement of the debt of the United States on the 20th November, 1851.
- D. Statement of the redemption of treasury notes during the fiscal year ending 30th June, 1851.
- E. Statement of the number of persons employed in each district of the United States for the collection of customs during the fiscal year ending 30th June, 1851, with their occupation and compensation—per act 3d March, 1849.
- F. Statement of the advances from the treasury on account of the expenses at each custom house in the U. S. during the year ending June 30th, 1851.
- G. Statement of imports and exports.
- H. Statement of cotton exported annually from 1821 to 1851, inclusive, and the average price per pound.
- I. Statement of the aggregate value of breadstuffs and provisions exported annually from 1821 to 1851, inclusive.
- J, No. 1. Statement of the consumption of iron.
- J, No. 2. Statement of the importations of bar and pig iron manufactured in the United States.
- K, Nos. 1 to 16. Statements of the quantity and value of wines, spirits, &c., imported annually from 1843 to 1851, inclusive.
- L, Nos. 1 and 2. Statement showing the progress of construction of the marine hospitals under the superintendence of Lieut. Col. S. H. Long, U. S. corps topographical engineers, with estimates for their completion.
- M. Statement of the value and quantity of cotton, tobacco, and rice exported annually from 1821 to 1851, inclusive.
- N. Statement showing the value of goods remaining in warehouses at the close of each quarter from 30th September, 1847, to 30th June, 1851, and also the amount of duties payable thereon.
- O. Statement of the amount of hempen goods imported annually from 1821 to 30th June, 1851, inclusive.
- P. Statement exhibiting the amount of hemp and cordage imported annually from 1821 to 1851, inclusive.
- Q. Statement of the amount of certain articles imported during the years ending on the 30th June, 1844, 1845, 1846, 1848, 1849, 1850 and 1851, (after deducting the re-exportations,) and the amount of duty which accrued on each during the same period.
- R. Statement showing the amount of coin and bullion imported and exported annually from 1821 to 1851, inclusive, and also the amount of importation over exportation, and *vice versa*.
- S, No. 1. Statement of the quantity and value of bar, pig, old and scrap iron imported annually from 1821 to 1851.
- S, No. 2. Statement showing the amount of bar iron manufactured, pig iron and old scrap iron imported, from 1843 to 1851, and also the average cost per ton and the estimated duties on each.
- S, No. 3. Statement of the quantity of bar, pig, and old scrap iron, reduced into pounds, imported during the years 1840, 1842, 1844, 1846, 1848, 1849, 1850, and 1851.



## A.

*Statement of duties, revenues and public expenditures during the fiscal year ending June 30, 1851, agreeably to warrants issued, exclusive of trust funds and treasury notes funded.*

	Amount.	Total.
The receipts into the treasury during the fiscal year ending June 30, 1851, were as follows:		
From customs, viz:—		
During quarter ending September 30, 1850.....	\$14,764,043 05	
Do.....do.....December 31, 1850.....	8,361,563 77	
Do.....do.....March 31, 1851.....	14,448,679 17	
Do.....do.....June 30, 1851.....	11,443,281 98	\$43,017,567 92
From sales of public land.....		2,352 395 30
From miscellaneous and incidental sources, including military contributions in Mexico.....		948,106 65
Total receipts.....		52,312 979 87
Balance in the treasury July 1, 1850.....		6,604,544 49
Total means.....		58,917,524 36
The expenditures for the fiscal year ending June 30, 1851, exclusive of trust funds, were—		
<i>Civil list.</i>		
Legislative.....	1,274,348 58	
Executive.....	1,209,039 23	
Judiciary.....	772,248 33	
Governments in Territories of the United States.....	102,899 35	
Surveyors and their clerks.....	66,280 69	
Officers of the mint and branches.....	50,300 00	
Commissioner of the Public Buildings.....	1,933 33	
Secretary of sign patents for public lands.....	1,499 73	
Total civil list.....		\$3,478,549 24
<i>Foreign intercourse.</i>		
Salaries of ministers.....	104,054 92	
Salary of minister resident to Turkey.....	4,500 00	
Salaries of chargés des affaires.....	69,292 30	
Salaries of secretaries of legation.....	17,002 96	
Salary of dragoman and assistant dragoman to Turkey.....	187 50	
Commissioner to reside in China.....	993 33	
Secretary and Chinese interpreter.....	2,000 00	
Commissioner to Sandwich islands.....	2,400 00	
Outfits of ministers and chargés des affaires.....	57,500 00	
Compensation for certain diplomatic services.....	16,672 95	
Contingent expenses of all missions abroad.....	17,009 66	
Contingent expenses of foreign intercourse.....	31,640 00	
Salary of consul at London.....	2,000 00	
Clerk hire and office rent of consul at London.....	2,800 00	
Salary of consul at Alexandria.....	1,000 00	
Salary of consul at Beyrout.....	125 00	
Salaries of consuls at Kwang, &c., China.....	3,617 00	
Office rent of consul at Basle, Switzerland.....	152 44	
Relief and protection of American seamen.....	92,755 92	
Intercourse with Barbary powers.....	6,847 64	

## A—Continued.

	Amount.	Total.
Interpreters, guards and other expenses of consulates in Turkish dominions.....	\$380 75	
Compensation and contingent expenses of commissioners under treaty with Mexico.....	14,525 08	
Compensation and contingent expenses of commissioners under convention with Brazil.....	6,021 74	
Expenses of agent of Sublime Porte.....	4,000 00	
Instalment and interest due May 30, 1851, under 12th article of treaty with Mexico.....	3,242,400 00	
Awards under 15th article of the treaty between the United States and Mexico.....	2,516,691 11	
Total foreign intercourse.....		\$6,217,170 50
<i>Miscellaneous.</i>		
Mint establishment.....	140,590 55	
Support and maintenance of light-houses, &c.....	556,449 01	
Building light-houses, &c.....	64,173 00	
Marine hospital establishment.....	189,220 43	
Building marine hospitals, including repairs, furniture and fixtures.....	167,829 75	
Building custom-houses and warehouses, including repairs, &c.....	248,740 71	
Construction and equipment of six revenue cutters.....	568 38	
Refunding duties on foreign merchandise, per act 8th August, 1846.....	53,732 51	
Refunding duties collected under act 30th August, 1842.. Do..... authorized by act 8th May, 1846.....	207 40 60 86	
Do..... collected in Mexico.....	10,559 75	
Repayment of duties on sugar and molasses illegally exacted by collectors, refunded under a decision of the Supreme Court of the United States, acquiesced in by Treasury Department.....	433,588 28	
Payment of discriminating tonnage, per act 3d Aug., 1846.....	716 29	
Tonnage duties on Spanish vessels refunded per acts July 13, 1832, and August 8d, 1846.....	2,645 44	
Refunding to John Joseph Chance, Bishop of Natchez, duties paid on a cathedral bell.....	250 00	
Refunding to Charles P. Montgomery duties paid on bell presented him for church, St. Joseph, Ohio.....	90 60	
Payment of debentures, drawbacks, bounties and allowances.....	734,630 61	
Repayment to importers of excess of deposits for unascertained duties.....	896,024 55	
Debentures and other charges, (customs).....	72,623 82	
Compensation of special examiners of drugs and medicines.....	6,456 04	
Expenses of collecting revenue from customs subsequent to 1st January, 1850.....	1,888,471 61	
Expenses of collecting revenue from customs prior to 1st January, 1850.....	1,227 37	
Survey of the coast of the United States, including western coast.....	247,000 00	
Survey of reefs, &c., of South Florida.....	30,000 00	
Purchase of a steamer to be employed in coast survey upon Pacific coast.....	92,000 00	
Expenses of running and marking the boundary line between the United States and Mexico.....	204,377 59	
To satisfy the State of Maine under treaty stipulations...	3,440 05	

## A—Continued.

	Amount.	Total.
Pay of draughtsmen, &c., to head of scientific corps, in reconstructing maps of boundary line under treaty of Washington.....	\$13,350 00	
Salaries of assistant treasurers and clerks.....	22 937 59	
Compensation of $\frac{1}{2}$ per cent. to each designated depository.....	669 51	
Payment for horses, &c., lost in the military service of the United States.....	1,915 48	
Contingent expenses under act for collecting, &c., public revenue.....	10,245 58	
Expenses incident to loans and treasury notes.....	20,483 93	
Expenses incident to the issue of ten millions of stock for Texan indemnity.....	4,768 18	
Expenses of taking the 7th census of the United States..	672 003 00	
Taking census of Oregon Territory.....	500 00	
Publication of the laws of the United States for the years 1850 and 1851.....	8,250 00	
Printing and publishing manuscript papers of Thomas Jefferson.....	6,000 00	
Purchase of the annals of Congress.....	60,000 00	
To pay for 5,592 copies of the Congressional Globe and appendix.....	83,468 00	
To pay for 1,000 copies of the works of John Adams, 2d President of the United States.....	5,000 00	
Reporting and publishing in daily Globe 2,000 columns of proceedings of House of Representatives.....	15,000 00	
Printing Congressional Globe and appendix for members of 31st Congress.....	10,000 00	
Printing 20,000 copies of the report on commerce and navigation.....	10,225 00	
Exchanges of certain documents and other publications of Congress.....	2,000 00	
Results and account of the exploring expedition.....	25,000 00	
Erection of suitable public buildings for Territory of Minnesota.....	10,000 00	
Erection of a penitentiary in Territory of Minnesota.....	10,000 00	
Erection of suitable public building at seat of government of Territory of Utah.....	20,000 00	
Purchase of a library to be kept at the seat of government of Territory of Utah.....	5,000 00	
Repairs and alterations of public buildings in Washington, improving streets, squares, &c.....	148,633 40	
Support and maintenance of the penitentiary in the District of Columbia.....	7,800 00	
Support and maintenance of the insane paupers of the District of Columbia.....	7,169 75	
Support and medical treatment of 12 transient paupers of the District of Columbia.....	2,000 00	
Auxiliary watch for city of Washington.....	2,174 57	
Improvements in the city of Washington, 12th section act May 17, 1848.....	5,900 66	
Cleaning and deepening Washington city canal.....	15,000 00	
Completing east wing of the Patent Office building.....	72,500 00	
Relief of the several corporate cities of the District of Columbia.....	46,600 72	
Reimbursement of the debt contracted of corporate cities of the District of Columbia.....	60,000 00	
Expenses incurred for funeral of General Taylor, dec'd. late President of the United States.....	8,146 73	
Expenses of transporting the remains of General Taylor from cemetery at Washington to Kentucky.....	4,000 00	

## A—Continued.

	Amount.	Total.
Selection of certain Wabash and Erie canal lands in Ohio, per act 30th June, 1834 .....	\$27,287 58	
Surveys of public lands .....	147,198 47	
Completing geological surveys, &c., of mineral lands in Michigan, Iowa, &c. ....	17,089 49	
Expenses of the mineral land service .....	2,631 46	
Distribution of the proceeds of the public lands .....	18,214 90	
Three per cent. to the State of Ohio .....	3,035 31	
Do. .... do. .... Illinois .....	8,681 86	
Five per cent. .... do. .... Florida .....	603 91	
Do. .... do. .... Wisconsin .....	16,399 17	
Do. .... do. .... Iowa .....	5,697 46	
Repayments for lands erroneously sold .....	21,866 66	
Payment for war bounty land warrants .....	8,325 00	
Expenses of collecting revenue from sales of public lands.	145,306 78	
Debentures and other charges, (lands) .....	986 64	
Smithsonian Institution, founded at Washington, for the increase and diffusion of knowledge among men— Expenses of the Smithsonian Institution, per act 10th Au- gust, 1846 .....	30,910 14	
Patent fund .....	173,791 47	
Consular receipts .....	1,166 53	
Claims not otherwise provided for .....	1,392 04	
Relief of sundry individuals .....	115,388 74	
Miscellaneous items .....	4,762 20	
Total miscellaneous .....		\$8,177,247 71
<i>Under direction of the Department of the Interior.</i>		
Indian Department .....	2,815,599 70	
Pensions, military .....	2,062,267 17	
Do. .... naval .....	147,168 02	
Claims of the State of Virginia .....	66,807 91	
Relief of sundry individuals .....	23,492 13	
Total under Department of the Interior .....		6,115,334 98
<i>Under direction of the War Department.</i>		
Army proper .....	8,949,767 82	
Military academy .....	165,017 73	
Fortifications and other works of defence .....	601,668 64	
Armories, arsenals and munitions of war .....	921,121 86	
Harbors, rivers, roads, &c. ....	136,764 84	
Surveys .....	68,225 11	
Arming and equipping militia .....	295,949 00	
Payments to volunteers and militia of States and Territo- ries .....	635,330 40	
Relief of individuals and miscellaneous .....	125,517 83	
Total under War Department .....		11,811,792 78
<i>Under direction of the Navy Department.</i>		
Pay and subsistence, including medicines, &c. ....	2,317,214 65	
Increase, repairs, ordnance and equipments .....	1,684,337 85	
Contingent expenses .....	618,972 45	
Navy yards .....	1,021,478 65	
Navy hospitals and asylums .....	1,342 62	

## A—Continued.

	Amount.	Total.
Dry docks.....	\$601,620 95	
Steam mail service .....	1,302,365 09	
Relief of individuals and miscellaneous .....	150,661 31	
Marine corps.....	389,704 80	
Total under Navy Department.....		\$8,987,797 67
<i>Public debt.</i>		
Paying the old public debt .....	4,419 62	
Interest on public debt, including treasury notes and Mexican indemnity stock .....	3,696,721 46	
Redemption of stock of the loan of 28th January, 1847...	430,250 00	
Premium and commission on purchase of stock of the loan of 28th January, 1847.....	69,713 19	
Reimbursement of treasury notes, per acts prior to 22d July, 1846.....	277 67	
Reimbursement of treasury notes, per act of 22d July, 1846.....	100 00	
Redemption of certificates of stock issued for fourth and fifth instalments of Mexican indemnity.....	15,977 16	
Redemption of treasury notes, per act of February 4, 1819.	527 00	
Total public debt.....		4,217,986 10
Total expenditures.....		48,005,878 68
Balance in the treasury July 1, 1851.....		\$10,911,645 68

N. SARGENT, *Register.*TREASURY DEPARTMENT, *Register's Office.*

## B.

*Statement of duties, revenues, and public expenditures, for the first quarter of the fiscal year, from July 1 to September 30, 1851, agreeably to warrants issued, exclusive of trust funds and treasury notes funded.*

RECEIPTS.		
From customs .....		\$14,754,909 34
From sales of public lands .....		581,892 82
From miscellaneous and incidental sources, including military contributions in Mexico .....		224,703 67
		<u>15,561,511 83</u>
EXPENDITURES.		
Civil list, miscellaneous, and foreign intercourse .....		\$3,000,837 77
Expenses of collecting the revenue from customs .....		488,792 31
Expenses of collecting revenue from lands .....		58,319 34
Indian department .....	\$761,341 10	
Pensions .....	320,312 80	
		1,681,653 90
Army proper, &c. ....	2,752,459 27	
Fortifications, ordnance, arming militia, &c. ....	415,789 13	
		3,168,248 42
Navy .....		2,236,838 04
Paying the old public debt .....	557 67	
Interest on treasury notes and Mexican indemnity stock ..	8,040 27	
Redemption of stock issued for fourth and fifth instalments of Mexican indemnity .....	287,536 76	
Reimbursement of treasury notes, under act of July 22, 1846, in specie .....	100 00	
	296,294 70	
From which deduct repayments on account of interest on public debt .....	12,898 17	
		283,396 53
		<u>10,937,586 21</u>

TREASURY DEPARTMENT,  
Register's Office, December 2, 1851.

N. SARGENT, *Register.*

## C.

*Statement of the debt of the United States on the 20th November, 1851.*

Denomination of debt.	Rate of interest.	When payable.	Amount.
Principal and interest of the old funded and unfunded debt, treasury notes of 1812, and Yazoo scrip.....		On presentation .....	\$116,716 79
Debt of the corporate cities of the District of Columbia, assumed per act of May 20, 1826.....	5½ per cent .....	\$60,000 annually.....	840,000 00
Outstanding treasury notes, issued prior to July 22, 1846, payable or fundable.....		On presentation .....	135,711 64
Outstanding treasury notes, issued under act of July 22, 1846, payable or fundable.....		do .....	17,550 00
Outstanding treasury notes, issued under act of January 28, 1847, payable or fundable.....		do .....	9,500 00
Loan of April 15, 1842.....	6 per cent .....	December 31, 1862.....	8,198,686 03
Loan of March 3, 1843.....	5 per cent.....	July 1, 1853.....	6,287,931 35
Loan of July 22, 1846.....	6 per cent .....	November 12, 1856..	4,999,149 45
Loan of January 28, 1847.....	do .....	January 1, 1868 .....	26,265,150 00
Loan of March 31, 1848.....	do .....	July 1, 1868 .....	15,740,000 00
			62,560,895 26
Amount of debt December 1, 1850.....			\$64,228,238 37
Deduct payments—			
Old debt.....		\$2,869 19	
Cities' debt.....		60,000 00	
Stock purchased, loan of 1843.....		230,300 00	
Stock purchased, loan of 1847.....		1,070,450 00	
Stock for fourth and fifth instalments Mexican indemnity, paid.....		303,573 92	
Treasury notes paid in specie.....		650 00	
			1,667,843 11
Present amount as above .....			62,560,895 26

TREASURY DEPARTMENT.  
Register's Office, December 2, 1851.

N. SARGENT, Register.

## D.

*Statement of the redemption of treasury notes during the fiscal year ending 30th June, 1851.*

	Amount.
Reimbursement of treasury notes per acts prior to July 22, 1846, of which \$227 67 was paid for in specie, \$50 received for lands, and \$3,400 funded.....	\$3,677 67
Reimbursement of treasury notes per act of July 22, 1846, of which \$100 was paid for in specie, and \$9,500 funded .....	9,600 00
Reimbursement of treasury notes per act of January 28, 1847, all of which was funded.....	190,500 00
	<hr/> 203,777 67

TREASURY DEPARTMENT,  
*Register's Office, December 2, 1851.*

N. SARGENT,  
*Register.*



## E.

*Statement of the number of persons employed in each district of the United States, for the collection of customs, during the fiscal year ending June 30, 1851, with their occupation and compensation, per act of March 3, 1849.*

Districts.	Number of persons employed.	Occupation.	Compensat'n to each person.
Passamaquoddy .....	1	Collector.....	\$3,000 00
	1	Surveyor.....	1,733 15
	8	Inspectors.....	1,095 00
	1	Do.....	696 00
	1	Do.....	730 00
	1	Do.....	547 50
	1	Weigher and measurer.....	1,265 83
	1	Do.....do.....	1,221 15
Machias .....	1	Collector.....	855 70
	1	Inspector.....	730 00
	1	Do.....	454 50
	2	Do.....	250 00
	1	Boatman.....	175 33
Frenchman's Bay .....	1	Collector.....	1,251 74
	1	Inspector.....	880 00
	1	Do.....	500 00
	2	Do.....	300 00
	1	Do.....	365 00
Penobscot .....	1	Collector.....	1,225 23
	1	Inspector.....	1,095 00
	2	Do.....	730 00
	1	Occasional inspector.....	600 00
	1	Do.....	150 00
Waldoborough.....	1	Collector.....	1,878 39
	4	Permanent inspectors.....	1,095 00
	1	Occasional inspector.....	402 00
	1	Do.....	341 25
	1	Do.....	299 25
	1	Do.....	151 25
Wiscasset .....	1	Collector.....	909 67
	1	Deputy collector and inspector.....	1,047 00
	1	Do.....do.....	795 00
	1	Do.....do.....	720 00
	1	Do.....do.....	720 00
	1	Temporary inspector.....	250 00
	1	Do.....	150 00
	1	Measurer.....	411 74
Bath .....	1	Collector.....	1,914 81
	1	Deputy collector and inspector.....	1,095 00
	2	Inspectors, weighers, gaugers, and measurers.....	1,560 00
	1	Inspector.....	1,095 00
	2	Do.....	350 00
	1	Do.....	500 00
	1	Do.....	450 00
	1	Do.....	214 00
	1	Occasional measurer.....	48 42

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
Portland and Falmouth...	1	Collector.....	\$3,600 00
	1	Deputy collector and occasional weigher, gauger, and measurer...	1,500 00
	1	Clerk.....	700 00
	1	Do.....	100 00
	6	Inspectors.....	1,095 00
	4	Occasional inspectors.....	741 00
	1	Do.....	551 00
	2	Weighers, gaugers, and measurers...	1,500 00
	1	Surveyor.....	1,505 25
	2	Boatmen.....	300 00
Saco.....	1	Collector.....	368 81
	1	Inspector.....	603 00
	1	Do.....	72 00
	1	Do.....	24 00
	1	Aid of revenue.....	0 00
Kennebunk.....	1	Collector.....	203 02
	1	Inspector.....	600 00
	1	Do.....	80 00
	1	Do.....	32 00
York.....	1	Collector.....	271 74
	1	Inspector.....	260 00
	1	Do.....	120 00
Belfast.....	1	Collector.....	1,309 95
	1	Inspector.....	1,095 00
	1	Do.....	1,071 00
	1	Do.....	1,032 00
	1	Do.....	400 00
	1	Gauger.....	108 00
	1	Measurer.....	132 83
	1	Do.....	123 15
Bangor.....	1	Collector.....	1,876 84
	1	Deputy collector and inspector.....	1,095 00
	1	Inspector.....	1,095 00
	1	Do.....	1,011 00
	1	Inspector and gauger.....	1,138 44
	1	Gauger, weigher, and measurer.....	797 63
Portsmouth, N. H.....	1	Collector.....	577 41
	1	Naval officer.....	637 02
	1	Surveyor.....	680 62
	1	Inspector and deputy collector.....	730 00
	1	Do.....do.....	200 00
	1	Occasional inspector.....	450 00
	4	Inspectors.....	300 00
	1	Do.....	260 00
	4	Inspectors and measurers.....	687 07
	3	Occasional inspectors.....	236 60
	2	Inspectors.....	520 00
	1	Occasional inspector.....	100 00
	1	Do.....	110 00
	1	Weigher and gauger.....	797 04

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensat'n to each person.
Vermont .....	1	Collector.....	\$1,090 84
	5	Deputy collectors.....	500 00
	1	Do.....	570 00
	6	Do.....	860 00
	3	Do.....	240 00
	1	Inspector.....	500 00
	3	Do.....	240 00
	1	Do.....	160 00
	2	Boatmen.....	240 00
	2	Do.....	120 00
Newburyport .....	1	Collector.....	483 61
	1	Naval officer.....	458 89
	1	Surveyor at Ipswich.....	250 00
	1	Surveyor at Newburyport.....	556 51
	1	Inspector.....	615 00
	1	Do.....	663 00
	1	Inspector and gauger.....	983 16
	1	Weigher, measurer, and inspector...	946 10
	1	Inspector at Ipswich.....	198 00
	1	Ocasional inspector.....	45 00
Gloucester .....	1	Collector.....	944 74
	1	Surveyor.....	250 00
	1	Inspector.....	1,095 00
	1	Do.....	939 00
	1	Do.....	300 00
	1	Do.....	150 00
	1	Weigher, gauger and measurer.....	599 64
	1	Do.....do.....	549 30
	1	Boatman.....	200 00
Salem and Beverly.....	1	Collector.....	2,120 24
	1	Naval officer.....	1,490 07
	1	Surveyor at Salem.....	1,267 25
	1	Surveyor at Beverly.....	277 56
	1	Clerk.....	930 00
	3	Weighers and gaugers.....	1,376 06
	12	Inspectors.....	769 00
	2	Measurers.....	789 61
	1	Deputy collector.....	1,000 00
Marblehead .....	1	Collector.....	537 03
	3	Inspectors.....	865 00
	1	Inspector at Lynn.....	275 00
	1	Do.....	55 00
	1	Measurer.....	58 84
	1	Surveyor.....	100 00
	2	Boatmen.....	150 00
Boston and Charlestown...	1	Collector.....	6,400 00
	1	Naval officer.....	5,000 00
	1	Surveyor.....	4,900 00
	1	Assistant collector.....	2,000 00
	2	Deputy collectors.....	1,500 00
	1	Cashier.....	1,800 00
	2	Collector's clerks.....	1,400 00
	2	Do.....	1,200 00
	6	Do.....	1,200 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
Boston and Charlestown...	4	Collector's clerks.....	\$1,100 00
	7	Do.....	1,000 00
	4	Do.....	900 00
	56	Inspectors.....	1,095 00
	1	Do.....	800 00
	2	Do.....	700 00
	1	Do.....	600 00
	21	Night inspectors.....	600 00
	9	Weighers.....	1,500 00
	4	Gaugers.....	1,500 00
	8	Measurers.....	1,500 00
	2	Appraisers.....	1,500 00
	2	Assistant appraisers.....	1,200 00
	2	Appraiser's clerks.....	1,000 00
	1	Do.....	900 00
	5	Do.....	800 00
	1	Special examiner of drugs.....	1,000 00
	1	Storekeeper.....	1,400 00
	3	Assistant storekeepers.....	1,100 00
	1	Do.....	1,000 00
	1	Storekeeper's clerk.....	1,095 00
	1	Do.....	1,000 00
	1	Do.....	900 00
	1	Do.....	800 00
	1	Do.....	600 00
	1	Deputy naval officer.....	1,500 00
	1	Naval officer's clerk.....	1,200 00
	1	Do.....	1,150 00
	1	Do.....	1,100 00
	2	Do.....	1,050 00
	1	Deputy surveyor.....	1,500 00
	1	Surveyor's clerk.....	1,150 00
	1	Do.....	1,000 00
	1	Messenger.....	500 00
Plymouth.....	1	Collector.....	537 18
	1	Inspector.....	1,095 00
	1	Do.....	800 00
	1	Do.....	600 00
	1	Do.....	300 00
	1	Do.....	160 00
	1	Measurer.....	111 00
Fall River.....	1	Do.....	80 00
	1	Collector.....	1,205 94
	1	Deputy collector, weigher, gauger, &c.....	1,403 04
	1	Inspector, weigher and measurer....	1,243 60
	1	Do.....do.....	1,243 95
Barnstable.....	1	Weigher and measurer.....	624 67
	1	Collector.....	1,524 28
	1	Deputy collector, inspector, and weigher and measurer.....	627 88
	1	Deputy collector and inspector....	553 00
	1	Do.....do.....	445 00
	1	Do.....do.....	325 00
	1	Inspector.....	400 00
	1	Do.....	378 00

## E—Continued

Districts.	Number of persons employed.	Occupation.	Compensat'n to each person.
Barnstable—Continued ...	1	Inspector.....	\$260 00
	1	Temporary inspector....	21 00
New Bedford.....	1	Collector.....	3,133 00
	1	Clerk.....	500 00
	2	Inspectors.....	1,095 00
	1	Do.....	300 00
	1	Do.....	114 00
	1	Do.....	99 00
	1	Do.....	105 00
	2	Inspectors, measurers, &c.....	1,500 00
Edgartown.....	1	Inspector, weigher, &c.....	611 00
	1	Collector.....	1,203 84
	1	Deputy collector and inspector.....	600 00
	1	Do.....do.....	500 00
	1	Inspector.....	500 00
	1	Do.....	393 00
	1	Boatman.....	300 00
	1	Do.....	240 00
Nantucket.....	1	Collector.....	718 16
	1	Inspector.....	1,095 00
	1	Do.....	730 00
	2	Boatmen.....	150 00
Providence .....	1	Collector.....	1,078 90
	1	Clerk.....	600 00
	1	Naval officer.....	667 92
	1	Surveyor, Providence.....	657 48
	1	Surveyor, Pawtuxet.....	200 00
	1	Surveyor, East Greenwich.....	187 50
	2	Inspectors coastwise.....	1,095 00
	6	Inspectors, foreign.....	295 50
	1	Inspector, Pawtuxet.....	450 00
	1	Do.....do.....	300 00
	1	Do.... East Greenwich.....	206 02
	1	Weigher.....	362 01
	2	Gaugers.....	364 86
	1	Measurer of coal, &c.....	1,341 48
	1	Do.....	605 18
Bristol and Warren.....	1	Measurer of salt.....	255 47
	1	Boatman, Pawtuxet.....	800 00
	1	Boatman, East Greenwich.....	99 00
	1	Collector.....	566 28
	2	Permanent inspectors.....	547 50
	1	Do.....	420 00
	1	Temporary inspector.....	258 00
	1	Do.....	231 00
	1	Do.....	66 00
	1	Do.....	126 00
	1	Do.....	114 00
	1	Do.....	6 00
	1	Gauger.....	449 64
	1	Do.....	259 68
	1	Weigher.....	357 50

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensat'n to each person.
Bristol and Warren—Con..	1	Assistant storekeeper.....	\$528 00
	1	Boatman.....	180 00
	1	Do.....	60 00
	2	Surveyors.....	250 00
Newport.....	1	Collector.....	783 91
	1	Naval officer.....	463 73
	1	Surveyor, Newport.....	441 35
	1	Surveyor, North Kingston.....	250 00
	1	Surveyor, Tiverton.....	200 00
	1	Surveyor, East Greenwich.....	62 50
	1	Deputy collector and inspector.....	519 00
	1	Inspector.....	519 00
	1	Do.....	546 00
	1	Do.....	400 00
	4	Occasional inspectors.....	193 50
	3	Do.....	104 84
	1	Gauger.....	404 00
	1	Weigher.....	2 63
	4	Boatmen.....	125 23
Middletown.....	1	Collector.....	891 51
	1	Deputy collector ..	50 00
	1	Inspector at Middletown.....	498 00
	2	Inspectors at Hartford.....	226 50
	3	Inspectors at Saybrook.....	79 00
	1	Deputy inspector.....	18 00
	1	Surveyor at Middletown.....	326 00
	2	Surveyors at Hartford.....	238 06
	3	Surveyors at Saybrook.....	110 00
	1	Gauger at Middletown.....	42 12
	1	Weigher at Middletown.....	39 51
New London.....	1	Collector.....	1,366 68
	1	Inspector.....	600 00
	1	Do.....	650 00
	1	Do.....	250 00
	1	Do.....	500 00
	1	Do.....	100 00
	2	Weighers.....	3 56
	2	Measurers.....	10 37
	1	Boatman.....	300 00
	1	Surveyor.....	321 76
New Haven.....	1	Collector.....	2,478 89
	1	Surveyor and storekeeper.....	779 88
	1	Deputy collector and inspector.....	1,095 00
	1	Inspector.....	1,095 00
	1	Do.....	899 00
	1	Do.....	111 00
	1	Do.....	72 00
	1	Do.....	60 00
	1	Inspector, weigher, and measurer ..	1,500 00
	1	Inspector, weigher, and gauger.....	1,489 95
	1	Do.....do.....	1,490 64
	1	Inspector and boatman.....	1,028 00
Fairfield.....	1	Collector.....	1,077 90
	1	Inspector.....	1,472 57
	1	Do.....	159 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensat'n to each per- son.
Fairfield—Continued .....	1	Inspector.....	\$144 00
	1	Night inspector.....	62 00
	1	Do.....	10 00
Stonington .....	1	Collector.....	869 37
	1	Surveyor.....	150 00
	1	Inspector.....	500 00
	1	Do.....	300 00
	1	Boatman.....	216 00
	1	Do.....	144 00
Sackett's Harbor.....	1	Collector.....	717 79
	1	Deputy collector and inspector.....	730 00
	2	Do.....do.....	365 00
	2	Inspectors.....	300 00
	2	Do.....	240 00
	1	Do.....	180 00
	1	Night watch.....	412 50
	1	Do.....	180 00
	3	Temporary inspectors.....	730 00
	2	Do.....	547 50
	1	Do.....	412 50
Genesee.....	1	Collector.....	784 20
	6	Deputy collectors and inspectors.....	730 00
Oswego .....	1	Collector.....	961 84
	1	Deputy collector.....	916 67
	1	Clerk.....	730 00
	1	Do.....	600 00
	3	Inspectors.....	730 00
	1	Do.....	500 00
	1	Do.....	410 62
	1	Do.....	365 00
	1	Do.....	300 00
	1	Do.....	250 00
	1	Assistant storekeeper.....	730 00
	2	Aids of revenue.....	600 00
	1	Do.....	650 00
	1	Do.....	296 72
	1	Do.....	138 00
	1	Do.....	259 00
	2	Do.....	182 00
	1	Do.....	16 00
	1	Night watch.....	547 50
	4	Do.....	365 00
	1	Boatman.....	300 00
Niagara .....	1	Collector.....	1,359 14
	1	Deputy collector at Lewiston.....	900 00
	1	Deputy collector at Youngstown.....	730 00
	1	Deputy collector at Niagara Falls.....	400 00
	1	Deputy collector at Highteen-mile Creek.....	244 00
	1	Deputy collector at Oak Orchard Creek.....	244 00
	2	Inspectors at Lewiston.....	730 00
	1	Inspector at Niagara Falls.....	730 00
	1	Night watch at Lewiston.....	365 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each per- son.
Buffalo.....	1	Collector.....	\$1,954 23
	1	Deputy collector and inspector. ....	1,000 00
	1	Do.....do.....	730 00
	2	Do.....do.....	500 00
	3	Do.....do.....	250 00
	1	Inspector.....	1,000 00
	1	Do.....	730 00
	1	Do.....	540 00
	2	Temporary inspectors.....	822 00
	6	Night watch.....	730 00
	1	Aid of the revenue.....	122 00
	1	Boatman.....	800 00
	2	Clerks.....	730 00
Oswegatchie.....	1	Collector.....	1,460 10
	1	Deputy collector.....	900 00
	1	Inspector.....	730 00
	1	Do.....	600 00
	1	Do.....	547 50
	1	Do.....	400 00
	2	Do.....	265 00
	1	Night watch.....	166 66
	1	Do.....	83 34
Sag Harbor.....	1	Collector.....	549 86
	3	Inspectors.....	66 00
New York.....	1	Collector.....	6,400 00
	1	Auditor.....	3,000 00
	1	Cashier.....	2,500 00
	1	Assistant collector.....	2,500 00
	3	Deputy collectors.....	1,830 56
	1	Do.....	1,452 81
	1	Do.....	1,300 67
	1	Assistant cashier.....	2,000 00
	1	Assistant auditor.....	1,800 00
	2	Clerks.....	1,500 00
	1	Do.....	1,250 00
	3	Do.....	1,200 00
	1	Do.....	978 91
	1	Do.....	951 08
	1	Do.....	1,166 67
	1	Do.....	1,150 00
	1	Do.....	1,100 00
	23	Do.....	1,000 00
	1	Do.....	583 33
	1	Do.....	941 67
	1	Do.....	931 45
	2	Do.....	930 00
	4	Do.....	975 00
	1	Do.....	966 67
	1	Do.....	208 79
	12	Do.....	900 00
	3	Do.....	850 00
	1	Do.....	898 89
	1	Do.....	810 67
	1	Do.....	816 67
	13	Do.....	800 00
	1	Do.....	580 43



## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
New York—Continued....	1	Clerk.....	\$576 08
	1	Do.....	589 67
	1	Do.....	582 61
	1	Do.....	750 00
	1	Do.....	400 00
	1	Do.....	683 32
	4	Do.....	700 00
	2	Do.....	600 00
	1	Do.....	575 00
	1	Do.....	500 00
	6	Watchmen.....	547 50
	1	Keeper.....	800 00
	1	Fireman.....	456 25
	5	Porters.....	360 00
	1	Messenger.....	850 00
	2	Do.....	300 00
	1	Assistant keeper.....	382 22
	1	Messenger.....	101 36
	1	Do.....	54 00
	1	Do.....	27 42
		<i>Naval office.</i>	
	1	Naval officer.....	6,000 00
	2	Deputies.....	1,500 00
	1	Auditing deputy.....	1,500 00
	1	Clerk.....	1,200 00
	8	Do.....	1,050 00
	6	Do.....	950 00
	11	Do.....	900 00
	1	Do.....	800 00
	1	Do.....	750 00
	2	Do.....	600 00
	1	Do.....	500 00
	1	Do.....	400 00
	1	Porter.....	450 00
	1	Messenger.....	150 00
		<i>Surveyor's office.</i>	
	1	Surveyor.....	4,900 00
	1	Deputy surveyor.....	1,500 00
	4	Clerks.....	1,000 00
	1	Do.....	1,100 00
	1	Do.....	700 00
	1	Porter and messenger.....	600 00
	1	Surveyor at Albany.....	150 00
	1	Surveyor at Troy.....	250 00
	196	Inspectors.....	1,095 00
	1	Do.....	832 00
	1	Do.....	730 00
	75	Night inspectors.....	547 50
	19	Weighers.....	1,500 00
	18	Assistants.....	360 00
	8	Gaugers.....	1,500 00
	8	Assistants.....	480 00
	17	Measurers.....	1,500 00
		<i>Appraisements.</i>	
	3	Principal appraisers.....	2,163 96
	6	Assistant appraisers.....	1,663 96

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
New York—Continued...	5	Clerks.....	\$1,200 00
	1	Do.....	1,003 33
	1	Do.....	1,075 00
	1	Do.....	1,050 00
	1	Do.....	989 25
	1	Do.....	922 05
	11	Do.....	1,000 00
	1	Do.....	791 12
	1	Do.....	900 00
	1	Do.....	600 00
	3	Clerks to storekeeper.....	1,000 00
	1	Do.....	464 54
	1	Do.....	746 67
	3	Do.....	800 00
	1	Porter.....	800 00
	1	Messenger.....	780 00
	2	Foremen.....	650 00
	1	Cooper.....	624 00
	3	Samplers.....	520 00
	1	Watchman.....	676 00
	3	Do.....	520 00
	51	Laborers.....	520 00
	1	Special examiner of drugs.....	2,000 00
	1	Clerk.....	1,000 00
		<i>Public warehouses.</i>	
	1	Storekeeper and deputy collector.....	1,827 94
	1	Register.....	1,200 00
	1	Clerk.....	1,200 00
	8	Assistant storekeepers.....	1,000 00
	9	Clerks.....	1,000 00
	1	Do.....	912 88
	1	Do.....	878 66
	8	Do.....	933 33
	1	Do.....	816 66
	2	Do.....	916 67
	1	Do.....	834 45
	4	Do.....	900 00
	1	Do.....	333 33
	30	Do.....	800 00
	1	Do.....	700 00
	1	Do.....	495 65
	1	Do.....	400 00
	1	Do.....	356 93
	1	Do.....	270 11
	1	Do.....	116 67
	1	Do.....	638 71
	16	Watchmen.....	547 50
	12	Do.....	363 00
	12	Do.....	271 50
	1	Do.....	365 00
	5	Laborers.....	780 00
	2	Do.....	624 00
	2	Do.....	600 00
	18	Do.....	520 00
	17	Do.....	390 60
	14	Bargemen.....	595 00
	4	Do.....	200 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
New York—Continued	4	Measurers of passenger vessels.....	\$330 00
	1	Watchman of assistant treasurer's office.....	912 50
	1	Do.....do.....do.....	547 50
Champlain.....	1	Collector.....	1,050 71
	2	Deputy collectors and inspectors.....	750 00
	1	Do.....do.....	600 00
	8	Do.....do.....	500 00
	1	Do.....do.....	450 00
	5	Do.....do.....	400 00
	1	Clerk.....	400 00
	1	Boatman.....	180 00
	1	Do.....	120 00
Cape Vincent.....	1	Collector.....	1,014 00
	2	Deputy collectors and inspectors.....	730 00
	3	Do.....do.....	547 50
	1	Night-watch.....	547 50
	1	Aid of revenue.....	547 50
Porth Amboy.....	1	Collector.....	908 00
	1	Deputy collector.....	600 00
	3	Inspectors.....	600 00
	1	Do.....	306 00
	1	Do.....	408 00
	1	Surveyor.....	150 00
Bridgetown.....	1	Collector.....	272 47
Burlington.....	1	Collector.....	150 00
Great Egg Harbor.....	1	Collector.....	279 97
	1	Inspector.....	350 00
Little Egg Harbor.....	1	Collector.....	504 46
	1	Inspector.....	84 00
	1	Do.....	15 00
	1	Do.....	6 00
Newark.....	1	Collector.....	437 91
	1	Deputy collector and inspector.....	730 00
	1	Temporary inspector.....	102 00
Camden, N. J.....	1	Surveyor.....	265 76
Philadelphia.....	1	Collector.....	6,066 92
	1	Naval officer.....	5,000 00
	1	Surveyor.....	4,500 00
	1	Assistant collector.....	2,164 38
	1	Deputy collector.....	1,728 50
	1	Do.....	1,493 15
	2	Deputy naval officers and surveyors.....	1,500 00
	2	Appraisers.....	1,828 77
	2	Assistant appraisers.....	1,463 01
	1	Special examiner of drugs.....	1,000 00
	1	Weigher.....	1,500 00
	2	Do.....	1,200 00
	2	Do.....	1,000 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
Philadelphia—Continued..	2	Gaugers.....	\$1,500 00
	4	Measurers.....	1,500 00
	1	Clerk.....	1,533 15
	1	Do.....	1,500 00
	2	Do.....	1,200 00
	1	Do.....	1,183 24
	1	Do.....	1,100 00
	4	Do.....	1,000 00
	1	Do.....	750 00
	4	Do.....	900 00
	1	Do.....	915 76
	3	Do.....	860 00
	1	Do.....	850 00
	3	Do.....	800 00
	1	Do.....	933 15
	2	Do.....	760 00
	1	Do.....	705 82
	1	Superintendent of public stores.....	1,500 00
	1	Assistant storekeeper.....	840 00
	2	Examiners.....	1,035 00
	1	Inspector.....	730 00
	45	Do.....	1,035 00
	20	Occasional inspectors.....	730 00
	2	Do.....	547 50
	2	Night inspectors—principals.....	800 00
	26	Do.....	547 50
	4	Boatmen.....	360 00
	3	Messengers.....	600 00
	5	Laborers.....	547 50
	1	Laborer.....	456 23
	1	Do.....	400 00
	2	Watchmen.....	360 00
	3	Do.....	547 50
	1	Do.....	420 00
	1	Do.....	456 23
	1	Sampler, deputy.....	547 50
Presqu'isle.....	1	Collector.....	376 76
	1	Deputy collector.....	730 00
Pittsburg.....	1	Surveyor.....	1,878 43
Delaware.....	1	Collector.....	643 36
	3	Inspectors.....	1,035 00
	1	Do.....	800 00
	1	Do.....	500 00
	2	Messengers.....	365 00
	4	Boatmen.....	300 00
Baltimore.....	1	Collector.....	6,460 00
	1	Deputy collector.....	1,500 00
	1	Cashier.....	1,500 00
	2	Clerks.....	1,200 00
	3	Do.....	1,100 00
	1	Do.....	1,000 00
	3	Do.....	600 00
	1	Messenger.....	547 50
	1	Naval officer.....	4,394 29
	1	Deputy naval officer.....	1,200 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
Baltimore—Continued . . . .	1	Clerk . . . . .	\$600 00
	1	Surveyor . . . . .	2,283 47
	1	Clerk . . . . .	600 00
	30	Inspectors . . . . .	1,095 00
	2	Night inspectors . . . . .	638 75
	26	Do. . . . .	547 50
	6	Boatmen . . . . .	540 00
	2	Appraisers . . . . .	1,500 00
	2	Clerks to appraisers. . . . .	1,000 00
	1	Do. . . . .	600 00
	1	Messenger . . . . .	540 00
	1	Storekeeper . . . . .	1,150 00
	1	Do. . . . .	1,095 00
	2	Clerks . . . . .	1,000 00
	2	Do. . . . .	600 00
	4	Porters . . . . .	547 50
Annapolis . . . . .	1	Collector . . . . .	250 00
	1	Inspector . . . . .	1,095 00
	1	Surveyor . . . . .	270 75
	1	Do. . . . .	200 00
	1	Do. . . . .	150 00
Oxford . . . . .	1	Collector . . . . .	385 80
Vienna . . . . .	1	Collector . . . . .	514 08
Havre de Grace . . . . .	1	Surveyor . . . . .	151 97
Georgetown, D. C. . . . .	1	Collector . . . . .	1,524 88
	1	Deputy collector and inspector . . . . .	1,384 18
	1	Do. . . . . do. . . . .	821 25
	1	Gauger . . . . .	34 20
	1	Clerk . . . . .	30 56
	1	Temporary inspector . . . . .	200 00
Richmond . . . . .	1	Collector . . . . .	2,323 32
	2	Deputy collectors . . . . .	1,095 00
	2	Inspectors, weighers, and measurers . . . . .	1,095 00
Norfolk and Portsmouth . . . .	1	Collector . . . . .	2,181 67
	1	Deputy collector, inspector, and storekeeper . . . . .	1,095 00
	1	Clerk . . . . .	500 00
	1	Naval officer . . . . .	735 88
	1	Clerk . . . . .	610 00
	1	Surveyor . . . . .	444 98
	4	Inspectors . . . . .	1,095 00
	1	Do. . . . .	400 00
	1	Weigher and gauger . . . . .	1,431 85
	1	Measurer . . . . .	324 06
	1	Assistant measurer . . . . .	142 71
	1	Watchman . . . . .	365 00
	1	Boatman . . . . .	300 00
	2	Do. . . . .	150 00
	3	Surveyors . . . . .	250 00
Tappahannock . . . . .	1	Collector . . . . .	489 64
	1	Deputy collector and inspector . . . . .	200 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
Tappahannock—Continued	1	Surveyor.....	\$365 00
	1	Do.....	300 50
	1	Do.....	280 00
	1	Do.....	170 00
	1	Do.....	150 00
Cherrystone .....	1	Collector.....	208 76
	1	Surveyor.....	250 00
Yorktown .....	1	Collector.....	404 00
	1	Surveyor.....	237 40
Petersburg .....	1	Collector.....	591 00
	1	Deputy collector.....	730 00
	1	Surveyor.....	500 00
	1	Weigher, &c.....	1,500 00
	2	Inspectors.....	1,095 00
	2	Occasional inspectors.....	126 00
Alexandria .....	1	Collector.....	1,063 99
	1	Deputy collector and inspector.....	1,095 00
	1	Surveyor.....	559 67
	2	Inspectors.....	1,095 00
	1	Weigher and measurer.....	1,500 00
	1	Gauger .....	48 48
Wheeling .....	1	Surveyor and inspector .....	406 53
Yeocombo .....	1	Surveyor and inspector .....	223 45
Camden, N. C. ....	1	Collector.....	714 28
	1	Temporary inspector, gauger, &c....	347 73
	1	Do.....do.....	18 36
	1	Appraiser .....	52 00
	1	Do.....	46 00
	1	Do.....	14 00
Edenton.....	1	Collector.....	373 68
	1	Temporary inspector.....	39 75
Plymouth, N. C. ....	1	Collector.....	431 77
	1	Surveyor.....	150 00
	1	Inspector, weigher, gauger, &c.....	60 49
	1	Do.....do.....do.....	52 63
Washington .....	1	Collector.....	321 82
	1	Deputy collector, inspector, weigher, &c.....	500 00
Newbern.....	1	Collector.....	457 66
	1	Inspector.....	250 00
	1	Gauger .....	25 80
	1	Weigher .....	11 49
	1	Measurer.....	140 97
Ocracoke .....	1	Collector.....	1,026 60
	1	Inspector.....	480 00
	2	Boatmen .....	200 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
Beaufort, N. C.....	1	Collector.....	\$371 23
	1	Inspector.....	42 00
	1	Gauger.....	3 00
Wilmington.....	1	Collector.....	1,722 31
	2	Inspectors.....	600 00
	3	Temporary inspectors.....	460 00
	1	Naval officer.....	300 00
	1	Surveyor.....	815 00
	1	Boarding officer.....	480 00
	1	Weigher and gauger.....	1,500 00
	4	Boatmen.....	240 00
	1	Servant.....	225 00
Charleston.....	1	Collector.....	6,000 00
	1	Deputy collector.....	1,120 00
	1	Clerk.....	1,300 00
	1	Do.....	1,000 00
	1	Do.....	600 00
	1	Naval officer.....	2,189 97
	1	Deputy naval officer.....	628 00
	1	Surveyor.....	1,762 79
	1	Weigher.....	1,500 00
	1	Measurer.....	1,500 00
	1	Gauger.....	1,500 00
	2	Appraisers.....	1,500 00
	1	Examiner of drugs.....	1,000 00
	28	Inspectors.....	1,095 00
	6	Boatmen.....	360 00
	1	Messenger.....	365 00
	2	Temporary night-watch.....	42 00
Georgetown, S. C.....	1	Collector.....	538 61
	1	Deputy collector.....	125 00
Beaufort, S. C.....	1	Collector.....	303 32
Savannah.....	1	Collector.....	3,264 90
	1	Deputy collector.....	1,200 00
	1	Clerk.....	800 00
	10	Inspectors.....	1,095 00
	1	Inspector at Hardwick.....	250 00
	1	Inspector at Sunbury.....	250 00
	2	Appraisers.....	1,500 00
	1	Weigher and gauger.....	1,500 00
	1	Appraiser's porter.....	180 00
	1	Custom-house night-watch.....	182 50
	1	Surveyor.....	150 00
	1	Naval officer.....	150 00
	1	Storekeeper.....	800 00
	4	Bargemen.....	360 00
St. Mary's, Ga.....	1	Collector.....	630 31
	1	Inspector.....	200 00
Brunswick.....	1	Collector.....	252 57
	1	Surveyor.....	250 00
Mobile.....	1	Collector.....	3,000 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
Mobile—Continued.....	2	Clerks.....	\$105 00
	8	Inspectors.....	1,025 00
	3	Do.....	819 00
	1	Do.....	636 00
	1	Do.....	546 00
	1	Do.....	411 00
	1	Do.....	363 00
	1	Do.....	342 00
	2	Weighers and measurers.....	1,500 00
	1	Appraiser.....	422 00
	1	Gauger.....	6 62
Pearl river.....	1	Collector.....	319 43
Natchez.....	1	Collector.....	506 23
Vicksburg.....	1	Collector.....	500 00
Pensacola.....	1	Collector.....	1,066 62
	1	Surveyor.....	75 00
	1	Inspector.....	1,035 00
St. Augustine.....	1	Collector.....	500 05
	1	Inspector.....	500 00
	1	Do.....	730 00
Key West.....	1	Collector.....	1,507 27
	1	Deputy collector.....	1,035 00
	1	Inspector.....	1,035 00
	1	Do.....	550 00
	1	Clerk.....	366 00
St. Mark's.....	1	Collector.....	691 71
	3	Inspectors.....	1,035 00
St. John's.....	1	Collector.....	571 51
	2	Inspectors.....	730 00
	1	Surveyor.....	300 00
	2	Boatmen.....	180 00
Apalachicola.....	1	Collector.....	1,750 01
	2	Inspectors.....	1,035 00
	1	Weighter and gauger.....	1,500 00
	4	Boatmen.....	300 00
New Orleans.....	1	Collector.....	6,400 00
	2	Deputy collectors.....	2,500 00
	5	Clerks.....	1,500 00
	9	Do.....	1,200 00
	4	Do.....	1,000 00
	3	Do.....	900 00
	1	Porter.....	730 00
	76	Inspectors.....	1,035 00
	1	Gauger.....	1,500 00
	1	Deputy gauger.....	1,200 00
	1	Weighter.....	1,500 00
	1	Deputy weighter.....	1,200 00
	1	Measurer.....	1,500 00



## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each person.
New Orleans—Continued..	1	Deputy measurer.....	\$1,095 00
	1	Naval officer.....	5,000 00
	1	Deputy naval officer.....	1,500 00
	1	Clerk.....	1,200 00
	1	Do.....	1,050 00
	1	Do.....	730 00
	1	Surveyor.....	4,500 00
	2	Deputy surveyors.....	1,500 00
	4	Boatmen.....	540 00
	11	Do.....	360 00
	2	Appraisers.....	2,500 00
	2	Assistant appraisers.....	2,000 00
	2	Clerks.....	1,095 00
	2	Porters.....	540 00
	2	Do.....	360 00
	1	Storekeeper.....	1,500 00
	1	Deputy storekeeper.....	1,095 00
	6	Laborers.....	480 00
	8	Do.....	420 00
	2	Custom-house watchmen.....	730 00
Teché.....	1	Collector.....	502 36
	1	Deputy collector and inspector.....	150 00
Texas.....	1	Collector.....	1,750 00
	2	Inspectors.....	1,095 00
	1	Deputy collector.....	1,000 00
	1	Do.....	600 00
	1	Surveyor.....	1,000 00
	1	Boarding inspector, &c.....	1,200 00
	1	Clerk.....	800 00
Brazos de Santiago.....	1	Collector.....	1,750 00
	1	Deputy collector and inspector.....	900 00
	1	Do..... do.....	1,000 00
	2	Do..... do.....	700 00
	2	Inspectors.....	700 00
	3	Clerks.....	700 00
	1	Storekeeper.....	700 00
	1	Bargeman.....	480 00
Saluria.....	1	Collector.....	1,250 00
	1	Deputy collector.....	500 00
	2	Surveyors.....	600 00
	2	Do.....	500 00
Miami.....	1	Collector.....	325 46
	1	Inspector—Toledo.....	800 00
	1	Do..... Maumee city.....	600 00
	1	Do..... Perrysburg.....	400 00
Sandusky.....	1	Collector.....	459 52
	1	Deputy collector.....	800 00
	1	Do.....	300 00
	3	Do.....	200 00
Cuyahoga.....	1	Collector.....	591 20
	1	Deputy collector.....	730 00

## E—Continued.

Districts.	Number of persons employed.	Occupation.	Compensation to each per- son.
Cuyahoga—Continued.....	2	Inspectors.....	\$600 00
	4	Do.....	240 00
Cincinnati.....	1	Surveyor and inspector.....	3,000 00
	1	Clerk.....	600 00
Detroit.....	1	Collector.....	1,618 42
	1	Deputy collector.....	1,000 00
	1	Do.....	480 00
	1	Do.....	360 00
	1	Do.....	180 00
	4	Do.....	240 00
	1	Do.....	150 00
	1	Inspector, weigher and gauger.....	1,095 00
	1	Inspector.....	1,200 00
	1	Do.....	720 00
	1	Do.....	600 00
	9	Do.....	360 00
	5	Do.....	240 00
Michillimackinac.....	1	Collector.....	835 85
	1	Deputy collector.....	400 00
	1	Do.....	240 00
	1	Do.....	69 17
Chicago.....	1	Collector.....	835 35
	1	Deputy collector and inspector.....	480 00
	4	Do.....do.....	360 00
	1	Do.....do.....	62 50
	1	Do.....do.....	62 50
Louisville.....	1	Surveyor and inspector.....	3,098 62
Nashville.....	1	Do.....do.....	965 17
St. Louis.....	1	Surveyor, &c.....	3,350 00
	1	Aid to the customs.....	652 00
Oregon.....	1	Collector.....	1,000 00
	1	Deputy collector and inspector.....	1,583 23
	1	Do.....do.....	805 66
	5	Special inspectors.....	215 07

## F.

*Statement of the advances from the Treasury on account of the expenses at each custom-house in the United States during the year ending 30th June, 1851.*

District.	Amount.	District.	Amount.
Passamaquoddy.....Maine..	\$25,437 06	Vienna.....Md...	\$456 67
Machias.....do...	2,501 40	Port of Town Creek....do...	153 42
Frenchman's Bay.....do...	3,111 00	Georgetown.....D. C..	3,800 52
Penobscot.....do...	3,774 00	Richmond.....Va...	7,058 00
Waldoborough.....do...	6,403 00	Norfolk & Portsmouth..do...	21,872 00
Wiscasset.....do...	3,162 00	Tappahannock.....do...	1,637 00
Bath.....do...	7,638 00	Cherrystone.....do...	502 00
Portland and Falmouth..do...	15,254 00	Yorktown.....do...	366 58
Saco.....do...	980 00	Petersburg.....do...	6,007 46
Kennebunk.....do...	909 52	Alexandria.....do...	5,898 00
York.....do...	570 00	Camden.....N. C..	748 56
Belfast.....do...	2,351 00	Edenton.....do...	391 00
Bangor.....do...	5,133 23	Plymouth.....do...	577 00
Portsmouth.....N. H..	10,133 00	Washington.....do...	786 59
Vermont.....Vt...	9,996 00	Newbern.....do...	869 00
Newburyport.....Mass..	4,183 00	Ocracoke.....do...	2,140 00
Gloucester.....do...	5,204 00	Beaufort.....do...	456 50
Salem and Beverly.....do...	18,962 00	Wilmington.....do...	5,881 00
Marblehead.....do...	2,070 80	Charleston.....S. C..	53,433 99
Boston and Charlestown..do...	224,765 00	Georgetown.....do...	450 00
Plymouth.....do...	3,312 00	Beaufort.....do...	121 40
Fall River.....do...	5,304 67	Savannah.....Ga...	30,263 85
Barnstable.....do...	3,360 00	St. Mary's.....do...	786 00
New Bedford.....do...	8,292 00	Brunswick.....do...	371 36
Edgartown.....do...	3,981 00	Mobile.....Ala...	21,632 00
Nantucket.....do...	2,533 00	Natchez.....Miss...	614 89
Providence.....R. I..	11,135 00	Vicksburg.....do...	334 75
Bristol and Warren.....do...	5,414 00	Pensacola.....Fla...	2,636 00
Newport.....do...	10,307 00	St. Augustine.....do...	2,790 00
Middletown.....Conn..	2,861 00	Key West.....do...	18,084 45
New London.....do...	4,114 75	St. Mark's.....do...	6,041 00
New Haven.....do...	11,924 00	St. John's.....do...	2,783 00
Fairfield.....do...	1,846 00	Apalachicola.....do...	6,120 00
Stonington.....do...	1,613 00	New Orleans.....La...	178,282 00
Sackett's Harbor.....N. Y..	8,255 00	Teché.....do...	488 00
Genesee.....do...	4,165 00	Texas (Galveston)....Texas..	9,246 00
Oswego.....do...	11,073 00	Saluria.....do...	4,697 00
Niagara.....do...	6,525 00	Brazos de St. Jago....do...	10,437 00
Buffalo Creek.....do...	15,705 49	Miami.....Ohio...	1,528 00
Oswegatchie.....do...	5,745 00	Sandusky.....do...	2,406 00
Sag Harbor.....do...	458 00	Cuyahoga (Cleveland)..do...	4,814 00
New York.....do...	679,578 00	Detroit.....Mich...	12,925 83
Champlain.....do...	8,041 00	Michillimackinac.....do...	1,690 00
Cape Vincent.....do...	5,124 00	Chicago.....Ill...	2,816 00
Perth Amboy.....N. J..	4,082 00	California.....do...	600 00
Bridgetown.....do...	551 28	Cincinnati.....Ohio...	7,458 10
Burlington.....do...	168 00	Louisville.....Ky...	2,577 80
Great Egg Harbor.....do...	899 00	Nashville.....Tenn...	717 83
Little Egg Harbor.....do...	458 95	Pittsburg.....Penn...	559 52
Newark.....do...	1,301 00	St. Louis.....Mo...	4,814 18
Camden.....do...	157 83	Wheeling.....Va...	631 65
Philadelphia.....Penn..	165,080 09	Yeocomico.....do...	443 95
Presqu'Isle.....do...	10,368 15	Milwaukee.....Wis...	1,079 00
Delaware (Wilmington). Del...	19,322 53	Weights and measures.....	3,000 00
Baltimore.....Md...	82,950 39		
Annapolis.....do...	2,202 00		
Oxford.....do...	208 47		
		Total.....	1,918,260 45

## G—No. 1.

*Statement exhibiting the value of dutiable merchandise re-exported annually, from 1821 to 1851, inclusive, and showing, also, the value re-exported from warehouses, under the act of August 6, 1846.*

Years.	Dutiable value of merchandise re-exported.	Value re-exported from warehouses.
1821 .....	\$10,537,731	
1822 .....	11,101,806	
1823 .....	19,846,873	
1824 .....	17,222,076	
1825 .....	22,704,803	
1826 .....	19,404,604	
1827 .....	16,617,986	
1828 .....	13,167,339	
1829 .....	11,427,401	
1830 .....	12,067,162	
1831 .....	12,434,483	
1832 .....	18,448,857	
1833 .....	12,411,969	
1834 .....	10,879,529	
1835 .....	7,743,655	
1836 .....	9,232,867	
1837 .....	9,406,043	
1838 .....	4,466,384	
1839 .....	6,007,698	
1840 .....	6,805,809	
1841 .....	4,228,181	
1842 .....	4,884,464	
1843 .....	3,456,572	
1844 .....	3,962,608	
1845 .....	6,171,731	
1846 .....	5,522,577	
1847—5 months to November 30 .....	\$2,333,527	
1847—7 months to June 30 .....	2,020,880	
1848 .....	4,353,907	\$651,170
1849 .....	6,576,499	2,869,941
1850 .....	6,625,276	3,692,363
1851 .....	7,876,361	5,261,291
1851 .....	8,661,967	5,668,
Total in 31 years .....	309,644,498	18,141,471
Average per annum .....	9,988,532	3,628,294

TREASURY DEPARTMENT,  
Register's Office, January 5, 1852.

N. SARGENT, Register.

## G—No. 2.

*Statement exhibiting the value of foreign merchandise imported, re-exported, and consumed, annually, from 1821 to 1851, inclusive, and also the estimated population and rate of consumption, per capita, during the same period.*

Years ending—	Value of foreign merchandise.			Population.	Consumption, per capita.
	Imported.	Re-exported.	Consumed and on hand.		
September 30, . . . . . 1821	\$62,585,724	\$21,302,488	\$41,283,236	9,960,974	\$4 14
1822	83,241,541	22,286,202	60,955,339	10,283,767	5 92
1823	77,579,267	27,543,622	50,035,645	10,606,540	4 71
1824	80,549,007	25,337,157	55,211,850	10,929,828	5 05
1825	96,340,075	82,500,648	63,749,432	11,252,106	5 66
1826	84,974,477	24,539,612	60,434,865	11,574,889	5 22
1827	79,484,068	23,403,136	56,080,932	11,897,672	4 71
1828	88,509,824	21,595,017	66,914,807	12,220,455	5 47
1829	74,492,527	16,658,378	57,834,049	12,543,288	4 61
1830	70,876,920	14,387,479	56,489,441	12,866,020	4 39
1831	103,191,124	20,033,526	83,157,598	13,286,364	6 25
1832	101,029,266	24,039,473	76,989,793	13,706,707	5 61
1833	108,118,311	19,822,735	88,295,576	14,127,060	6 25
1834	126,521,332	23,312,811	103,208,521	14,547,393	7 09
1835	149,895,742	20,504,495	129,391,247	14,967,736	8 64
1836	189,980,035	21,746,360	168,233,675	15,388,079	10 92
1837	140,989,217	21,854,962	119,134,255	15,808,422	7 53
1838	113,717,404	12,452,795	101,264,609	16,228,765	6 23
1839	162,092,182	17,494,525	144,597,607	16,649,108	8 68
1840	107,141,519	18,190,312	88,951,207	17,069,453	5 21
1841	127,946,177	15,499,081	112,447,096	17,612,507	6 38
1842	100,162,087	11,721,538	88,440,549	18,155,561	4 87
9 months to June 30, 1843	64,753,799	6,552,697	58,201,102	18,698,615	3 11
Year to June 30, . . . . . 1844	108,435,035	11,484,867	96,950,168	19,241,670	5 03
1845	117,254,564	15,346,830	101,907,734	19,784,725	5 15
1846	121,691,797	11,346,623	110,345,174	20,827,780	5 42
1847	140,545,638	8,011,158	138,534,480	20,870,835	6 60
1848	154,998,928	21,132,315	133,866,613	21,413,890	6 25
1849	147,857,489	13,088,865	134,768,624	21,956,945	6 13
1850	178,138,318	14,951,808	163,186,510	23,246,301	7 01
1851	223,419,005	21,743,293	201,675,712	24,250,000	8 31

N. SARGENT, *Register.*

TREASURY DEPARTMENT,  
*Register's Office, January 5, 1852.*

*Statement exhibiting the total value of imports, and the imports consumed in the United States, exclusive of specie, during each fiscal year from 1821 to 1851; showing, also, the value of the domestic and foreign exports, exclusive of specie, and the tonnage employed during the same periods.*

[11]

50

Year.	Total imports, including specie, &c.	Imports consumed, exclusive of specie.	Domestic produce exported, exclusive of specie.	Foreign merchandise exported, exclusive of specie.	Total exports, including specie, &c.	Tonnage.
1821.....	\$62,585,724	\$43,696,405	\$43,671,894	\$10,824,429	\$64,974,382	1,298,958
1822.....	83,241,541	68,367,425	49,874,079	11,504,270	72,160,281	1,324,639
1823.....	77,679,262	51,308,936	47,165,408	21,172,435	74,009,030	1,336,566
1824.....	80,649,007	53,816,567	50,649,500	18,822,605	76,986,657	1,389,163
1825.....	96,340,075	66,395,722	66,944,745	23,793,588	99,536,388	1,423,112
1826.....	84,974,477	57,662,577	52,499,855	20,440,934	77,595,822	1,534,191
1827.....	79,484,068	54,901,108	57,878,117	16,431,830	82,324,827	1,620,608
1828.....	88,509,824	66,975,475	49,976,632	14,044,608	72,264,686	1,741,292
1829.....	74,492,527	54,741,571	55,087,307	12,347,314	72,258,671	1,260,798
1830.....	70,876,920	49,575,099	58,524,878	13,145,857	73,819,508	1,191,776
1831.....	103,191,124	82,808,110	59,218,583	13,077,069	81,310,583	1,267,847
1832.....	101,029,266	75,327,688	61,726,529	19,794,074	87,176,043	1,439,460
1833.....	108,118,311	83,470,067	69,950,856	17,577,876	90,140,433	1,606,161
1834.....	126,521,332	86,973,147	80,623,662	21,636,553	104,336,973	1,758,907
1835.....	149,895,742	122,007,974	100,459,481	14,756,321	121,693,577	1,824,940
1836.....	189,980,035	158,811,392	106,570,942	17,767,762	128,663,040	1,882,103
1837.....	140,989,217	113,810,571	94,280,895	17,162,232	117,419,376	1,896,686
1838.....	113,717,404	86,552,598	95,560,880	9,417,690	108,486,616	1,995,640
1839.....	162,092,132	145,870,816	101,625,533	10,626,140	121,028,416	2,096,380
1840.....	107,141,619	86,259,335	111,660,561	12,008,371	132,085,946	2,180,764
1841.....	127,946,177	114,776,309	103,636,236	8,181,235	121,851,803	2,130,744
1842.....	100,162,087	87,996,318	91,799,242	8,078,753	104,691,534	2,092,391
1843 (9 months ending June 30).....	64,753,799	37,294,129	77,686,354	5,139,335	84,346,480	2,158,603
1844.....	108,435,035	96,390,518	99,631,774	6,214,058	111,206,046	2,280,095
1845.....	117,254,564	105,699,541	98,465,330	7,684,781	114,646,606	2,417,002
1846.....	121,691,797	110,048,859	101,718,042	7,805,206	113,488,616	2,562,085

1817.....	116,545,638	116,257,595	150,574,844	8,166,754	158,648,622	2,839,046
1848.....	154,098,928	140,651,902	130,203,709	7,986,802	154,032,131	3,154,042
1849.....	147,857,439	132,565,108	131,710,081	8,641,091	145,755,820	3,334,016
1850.....	178,136,318	164,032,033	134,900,233	9,475,493	151,898,720	3,535,454
1851.....	223,419,005	207,618,003	178,620,138	10,347,121	218,433,011	3,772,439

TREASURY DEPARTMENT, *Register's Office*, January 5, 1852.

N. SARGENT, *Register*.

## H.

*Statement exhibiting the quantity and value of cotton exported annually from 1821 to 1851 inclusive, and the average price per pound.*

Years.	COTTON.				Average price per pound.
	Sea island.	Other.	Total.	Value.	
	Pounds.				
					Cents.
1821.....	11,344,066	113,549,339	124,893,405	\$20,157,484	16.2
1822.....	11,250,635	133,424,460	144,675,095	24,035,058	16.6
1823.....	12,136,688	161,586,582	173,723,270	20,445,520	11.8
1824.....	9,525,722	132,843,211	142,368,933	21,247,401	15.4
1825.....	9,665,278	165,784,629	175,449,907	36,846,649	20.9
1826.....	5,372,852	138,662,563	204,535,415	25,025,214	12.2
1827.....	15,140,798	273,169,317	291,310,115	29,359,545	10.0
1828.....	11,288,419	199,392,044	210,580,463	22,487,229	10.7
1829.....	12,833,307	252,003,879	264,837,186	26,575,311	10.0
1830.....	8,147,165	290,311,937	298,459,102	29,674,883	9.9
1831.....	8,311,762	268,668,022	276,979,784	25,289,492	9.1
1832.....	8,743,373	313,471,749	322,215,122	31,724,682	9.8
1833.....	11,142,987	313,555,617	324,698,604	36,191,105	11.1
1834.....	8,085,937	376,631,970	384,717,907	49,448,402	12.8
1835.....	7,752,736	379,696,256	387,448,992	61,961,302	16.8
1836.....	7,849,597	415,781,710	423,631,307	71,284,925	16.8
1837.....	5,286,971	438,924,566	444,211,537	63,240,102	14.2
1838.....	7,286,340	588,665,957	595,952,297	61,556,811	10.3
1839.....	5,107,404	408,516,808	413,624,212	61,238,382	14.8
1840.....	8,779,669	735,161,392	743,941,061	63,870,307	8.5
1841.....	6,237,424	523,966,676	530,204,100	51,330,341	10.2
1842.....	7,254,099	577,462,918	584,717,017	47,593,464	8.1
1843.....	7,515,079	784,782,027	792,297,106	49,119,806	6.2
1844.....	6,099,076	657,534,379	663,633,455	54,063,501	8.1
1845.....	9,389,625	863,516,371	872,905,996	51,739,643	5.92
1846.....	9,388,533	538,169,522	547,558,055	42,767,341	7.91
1847.....	6,293,973	520,925,985	527,219,958	53,415,848	10.34
1848.....	7,724,148	806,550,283	814,274,431	61,998,294	7.61
1849.....	11,969,259	1,014,633,010	1,026,602,269	66,396,967	6.4
1850.....	8,236,463	627,145,141	635,381,604	71,984,616	11.3
1851.....	8,299,656	918,937,433	927,237,089	112,315,317	12.11

TREASURY DEPARTMENT,  
Register's Office, November 10, 1851.

N. SARGENT,  
Register.



## I.

*Statement exhibiting the aggregate value of breadstuffs and provisions exported annually from 1821 to 1851.*

	Amount.
Year ending September 30, 1821.....	\$12,341,901
Do.....do.....1822.....	13,886,856
Do.....do.....1823.....	13,767,847
Do.....do.....1824.....	15,059,484
Do.....do.....1825.....	11,634,449
Do.....do.....1826.....	11,303,496
Do.....do.....1827.....	11,685,556
Do.....do.....1828.....	11,461,144
Do.....do.....1829.....	13,131,858
Do.....do.....1830.....	12,075,430
Do.....do.....1831.....	17,538,227
Do.....do.....1832.....	12,424,703
Do.....do.....1833.....	14,209,128
Do.....do.....1834.....	11,524,024
Do.....do.....1835.....	12,009,399
Do.....do.....1836.....	10,614,130
Do.....do.....1837.....	9,588,359
Do.....do.....1838.....	9,636,650
Do.....do.....1839.....	14,147,779
Do.....do.....1840.....	19,067,535
Do.....do.....1841.....	17,196,102
Do.....do.....1842.....	16,902,876
Nine months ending June 30, 1843.....	11,204,123
Year ending.....do.....1844.....	17,970,135
Do.....do.....1845.....	16,743,421
Do.....do.....1846.....	27,701,121
Do.....do.....1847.....	68,701,921
Do.....do.....1848.....	37,472,751
Do.....do.....1849.....	38,155,507
Do.....do.....1850.....	26,051,373
Do.....do.....1851.....	21,948,651

TREASURY DEPARTMENT,  
Register's Office, December 12, 1851.

N. SARGENT, Register.

## J—No. 1.

*Statement of the consumption of iron in the United States at the date therein specified, and of the rate per capita.*

Years.	Consumption of iron, in tons.	Population of the United States.	Rate, in pounds, per capita.
1842	330,055	18,155,641	401
1846	834,625	20,327,780	92
1848	953,377	21,412,890	93
1849	932,687	21,959,945	95
1850	901,632	23,246,301	86
1851	751,750	21,250,000	63

## J—No. 2.

*Statement of the importations of bar iron manufactured by rolling or otherwise, and of pig iron, into the United States, and of the cost thereof, at the periods therein referred to.*

Time.	Tons.	Value.	Average value.	Tariff.
Year ending September 30, 1842..	109,055	\$3,390,117	\$33 88	Specific.
2 months ending June 30, 1843...	25,885	887,083	34 27	do.
Year ending June 30, 1844.....	64,658	1,849,169	28 60	do.
Do.....1845.....	96,875	3,070,196	31 69	do.
Do.....1846.....	69,625	2,782,420	39 96	do.
5 months ending Nov. 30, 1846....	22,989	1,105,036	48 07	do.
7 months ending June 30, 1847....	60,560	2,433,647	40 18	Ad valorem.
Year ending June 30, 1848.....	153,377	5,470,227	35 66	do.
Do.....1849.....	289,687	7,991,451	27 58	do.
Do.....1850.....	337,532	9,092,561	26 94	do.
Do.....1851.....	341,750	9,011,833	26 08	do.

## K.

*Statement exhibiting the quantity and value of wines, spirits, &c., imported annually from 1843 to 1851 inclusive; and also showing the foreign cost per gallon under specific and ad valorem duties.*

## No. 1.—MADEIRA WINE.

Period of importation.	Gallons.	Value.	Av. cost per gallon.	Duty.
9 months ending June 30, 1843.....	3,949	\$9,075	\$2 29.8	Specific.
Year ending June 30, 1844.....	16,754	30,575	1 82.5	
Year ending June 30, 1845.....	101,176	145,237	1 43.5	
Year ending June 30, 1846.....	169,797	122,895	1 11.9	
6 months ending November 30, 1846..	117,117	128,613	1 09.8	Ad valorem.
7 months ending June 30, 1847.....	13,806	5,717	41.4	
Year ending June 30, 1848.....	44,634	21,630	48.4	
Year ending June 30, 1849.....	193,971	105,302	54.3	
Year ending June 30, 1850.....	303,125	150,096	49.51	
Year ending June 30, 1851.....	163,941	116,008	70.76	

## No. 2.—SHERRY WINE.

9 months ending June 30, 1843.....	4,685	6,491	1 38.5	Specific.
Year ending June 30, 1844.....	18,665	23,418	1 25.4	
Year ending June 30, 1845.....	23,616	38,289	1 62.1	
Year ending June 30, 1846.....	26,538	41,761	1 57.0	
6 months ending November 30, 1846..	14,543	26,194	1 79.5	Ad valorem.
7 months ending June 30, 1847.....	77,521	56,061	72.3	
Year ending June 30, 1848.....	215,935	109,983	50.9	
Year ending June 30, 1849.....	170,794	128,510	75.2	
Year ending June 30, 1850.....	212,092	118,952	56.08	
Year ending June 30, 1851.....	259,277	154,668	59.65	

## No. 3.—SICILY WINE.

9 months ending June 30, 1843.....	14,579	6,617	60.6	Specific.
Year ending June 30, 1844.....	31,180	15,000	48.1	
Year ending June 30, 1845.....	110,590	46,033	50.4	
Year ending June 30, 1846.....	209,131	74,000	85.4	
6 months ending November 30, 1846..	21,281	8,933	42.0	Ad valorem.
7 months ending June 30, 1847.....	92,631	24,230	26.2	
Year ending June 30, 1848.....	190,294	67,364	35.4	
Year ending June 30, 1849.....	180,851	32,231	24.6	
Year ending June 30, 1850.....	91,123	24,933	27.36	
Year ending June 30, 1851.....	301,010	98,975	32.88	

## No. 4.—PORT WINE IN CASKS.

9 months ending June 30, 1843.....	38,593	25,714	66.6	Specific.
Year ending June 30, 1844.....	223,615	156,878	70.2	
Year ending June 30, 1845.....	260,593	162,358	62.3	
Year ending June 30, 1846.....	272,628	148,895	40.0	
6 months ending November 30, 1846..	80,991	62,851	77.6	Ad valorem.
7 months ending June 30, 1847.....	8,075	3,791	47.0	
Year ending June 30, 1848.....	501,123	170,134	34.0	
Year ending June 30, 1849.....	711,268	272,700	38.8	
Year ending June 30, 1850.....	626,211	305,454	48.77	
Year ending June 30, 1851.....	762,967	349,849	45.85	

## K—Continued.

## No. 5.—CLARET, IN CASKS.

Period of importation.	Gallons.	Value.	Average cost per gallon.	Duty.
9 months ending June 30, 1843.....	873,895	\$134,598	\$0 15.40	Specific.
Year ending June 30, 1844.....	933,198	218,239	21.97	
Year ending June 30, 1845.....	1,051,862	219,633	23.73	
Year ending June 30, 1846.....	951,351	249,703	26.24	
6 months ending November 30, 1846..	294,433	111,453	37.85	Ad valorem.
7 months ending June 30, 1847.....	591,656	119,811	20.26	
Year ending June 30, 1848.....	1,227,071	221,416	18.04	
Year ending June 30, 1849.....	1,912,701	263,856	13.79	
Year ending June 30, 1850.....	1,919,766	267,445	13.93	
Year ending June 30, 1851.....	1,940,121	280,333	14.46	

## No. 6.—OTHER RED WINES.

9 months ending June 30, 1843.....				Specific.
Year ending June 30, 1844.....	340,387	60,096	17.65	
Year ending June 30, 1845.....	495,688	143,210	28.90	
Year ending June 30, 1846.....	954,646	316,821	33.19	
6 months ending November 30, 1846..	1,072,689	328,814	30.65	Ad valorem.
7 months ending June 30, 1847.....	529,454	119,411	22.14	
Year ending June 30, 1848.....	781,073	180,928	22.16	
Year ending June 30, 1849.....	994,458	221,177	22.24	
Year ending June 30, 1850.....	1,469,256	265,988	18.10	
Year ending June 30, 1851.....	1,245,201	236,727	19.01	

## No. 7.—OTHER WHITE WINES.

9 months ending June 30, 1843.....	123,832	28,205	22.77	Specific.
Year ending June 30, 1844.....	268,414	75,090	27.98	
Year ending June 30, 1845.....	591,735	211,183	36.69	
Year ending June 30, 1846.....	705,808	310,241	43.96	
6 months ending November 30, 1846..	618,267	296,736	48.00	Ad valorem.
7 months ending June 30, 1847.....	278,482	69,831	25.08	
Year ending June 30, 1848.....	840,687	193,358	23.00	
Year ending June 30, 1849.....	971,895	210,139	21.62	
Year ending June 30, 1850.....	1,088,801	215,353	19.79	
Year ending June 30, 1851.....	1,085,374	209,847	19.83	

## No. 8.—BRANDY.

9 months ending June 30, 1843.....	191,822	106,267	55.40	Specific.
Year ending June 30, 1844.....	782,510	606,633	77.52	
Year ending June 30, 1845.....	1,081,314	819,540	75.79	
Year ending June 30, 1846.....	963,147	839,231	87.13	
6 months ending November 30, 1846..	331,108	355,451	107.30	Ad valorem.
7 months ending June 30, 1847.....	623,309	575,621	92.35	
Year ending June 30, 1848.....	1,370,111	1,135,089	82.84	
Year ending June 30, 1849.....	2,064,091	1,347,514	65.28	
Year ending June 30, 1850.....	4,145,862	2,659,637	64.14	
Year ending June 30, 1851.....	3,163,783	2,128,679	67.28	

## K—Continued.

## No. 9.—GRAIN SPIRITS.

Period of Importation.	Gallons.	Value.	Av. cost per gallon.	Duty.
9 months ending June 30, 1843.....	259,129	\$121,547	\$0 46.91	Specific.
Year ending June 30, 1844.....	416,918	171,015	41.02	
Year ending June 30, 1845.....	606,311	262,543	43.30	
Year ending June 30, 1846.....	677,785	345,352	50.95	
5 months ending November 30, 1846..	136,323	86,073	63.14	
7 months ending June 30, 1847.....	327,635	143,549	43.81	Ad valorem.
Year ending June 30, 1848.....	676,683	327,493	48.40	
Year ending June 30, 1849.....	796,276	327,957	41.19	
Year ending June 30, 1850.....	751,183	361,078	48.07	
Year ending June 30, 1851.....	984,417	364,204	36.99	

## No. 10.—OTHER SPIRITS.

9 months ending June 30, 1843.....	135,399	32,095	23.7	Specific.
Year ending June 30, 1844.....	210,477	78,027	37.07	
Year ending June 30, 1845.....	270,484	78,957	29.12	
Year ending June 30, 1846.....	221,344	81,713	36.92	
5 months ending November 30, 1846..	65,477	28,862	44.08	
7 months ending June 30, 1847.....	160,747	57,806	35.96	Ad valorem.
Year ending June 30, 1848.....	228,671	75,948	33.21	
Year ending June 30, 1849.....	542,492	145,784	26.87	
Year ending June 30, 1850.....	339,169	118,779	33.57	
Year ending June 30, 1851.....	309,214	100,850	32.61	

## No. 11.—BEER, ALE, AND PORTER FROM ENGLAND.

9 months ending June 30, 1843.....	63,612	57,098	89.76	Specific.
Year ending June 30, 1844.....	107,489	102,157	95.04	
Year ending June 30, 1845.....	79,802	73,729	92.97	
Year ending June 30, 1846.....	117,621	110,397	94.71	
5 months ending November 30, 1846..	46,146	42,987	93.15	
7 months ending June 30, 1847.....	132,157	67,305	50.93	Ad valorem.
Year ending June 30, 1848.....	130,008	101,171	77.82	
Year ending June 30, 1849.....	146,473	118,233	80.72	
Year ending June 30, 1850.....	156,735	129,957	82.92	
Year ending June 30, 1851.....	275,336	189,010	68.64	

## No. 12.—BEER, ALE, AND PORTER FROM SCOTLAND.

9 months ending June 30, 1843.....	7,423	6,335	85.34	Specific.
Year ending June 30, 1844.....	19,236	18,343	95.36	
Year ending June 30, 1845.....	26,711	21,294	79.72	
Year ending June 30, 1846.....	33,464	39,831	1 03.55	
5 months ending November 30, 1846..	2,151	1,895	88.1	
7 months ending June 30, 1847.....	15,375	8,657	56.31	Ad valorem.
Year ending June 30, 1848.....	39,282	21,533	54.06	
Year ending June 30, 1849.....	52,297	30,088	57.53	
Year ending June 30, 1850.....	52,856	41,790	79.07	
Year ending June 30, 1851.....	88,179	56,736	64.34	

## K—Continued.

*Recapitulation of the average cost of wines, spirits, and ale and porter.*

Wines, &c.	Under specific duties.	Under ad valorem duties.	Difference.	Equal to—
	<i>Per gallon.</i>	<i>Per gallon.</i>	<i>Per gallon.</i>	<i>Per cent.</i>
No. 1. Madeira.....	\$1 55.5	\$0 62.87	\$1 02.63	\$0 66
No. 2. Sherry .....	1 52.5	62.83	82.67	58.8
No. 3. Sicily.....	47.3	29.29	18.01	58.07
No. 4. Port, in casks.....	63.3	42.78	20.52	82.4
No. 5. Claret, in casks.....	25.3	16.09	9.21	36.4
No. 6. Other red wines.....	27.8	20.93	6.67	24.15
No. 7. Other white wines.....	35.68	21.76	13.92	32.00
No. 8. Brandy.....	80.63	74.38	6.25	7.75
No. 9. Grain spirits.....	49.06	43.69	5.37	10.94
No. 10. Other spirits.....	34.18	32.44	1.74	5.10
No. 11. Ale and porter from England.	93.13	72.21	20.92	22.46
No. 12. Ale and porter from Scotland.	90.41	62.26	28.15	31.13

TREASURY DEPARTMENT,  
*Register's Office, December 24, 1851.*

N. SARGENT, *Register.*

## K—Continued.

## No. 13.—MOLASSES.

Imported.	Tariff.	Gallons.	Value.	Average.	Result.
				<i>Cents.</i>	
Nine months ending June 30, 1843..	Specific.....	10,794,710	\$1,134,820	10.50	Average invoice cost at specific duty ..... \$0 15.10 Average invoice cost at ad valorem duty.. 10.16 Reduction in average cost ..... 4.94 Equal to.....per cent. 82.72
Year ending June 30, 1844.....	do.....	20,785,739	2,833,753	13.63	
Do.....1845.....	do.....	16,775,947	3,154,782	18.80	
Do.....1846.....	do.....	20,863,903	3,332,297	15.97	
Five months ending Nov. 30, 1846..	do.....	4,979,653	651,253	13.08	
Seven months ending June 30, 1847..	Ad valorem...	25,245,281	2,342,987	9.28	
Year ending June 30, 1848.....	do.....	33,640,287	3,435,708	10.21	
Do.....1849.....	do.....	23,796,816	2,778,174	11.67	
Do.....1850.....	do.....	25,044,835	2,890,185	11.54	
Do.....1851.....	do.....	36,376,772	3,707,581	10.16	

## K—Continued.

## No. 14.—RAW SUGARS.

(Which include all sugars imported, except refined.)

Imported.	Tariff.	Pounds.	Value.	Average.	Result.
				Cents.	
Nine months ending June 30, 1848..	Specific .....	70,632,356	\$2,490,943	3.53	Average invoice cost at specific duty ..... \$0 03.97 Average invoice cost at ad valorem duty.. 3.48 Reduction in average cost......49 Equal to.....per cent. 12.37
Year ending June 30, 1844.....	.....do.....	184,589,007	7,061,244	3.83	
Do.....1846.....	.....do.....	113,619,978	4,647,564	4.09	
Do.....1846.....	.....do.....	127,775,496	5,429,360	4.25	
Do.....1846.....	.....do.....	32,611,636	1,372,842	4.21	
Five months ending Nov. 30, 1846..	.....do.....	203,267,751	8,487,251	4.15	
Seven months ending June 30, 1847.	Ad valorem ..	255,008,125	9,310,706	3.53	
Year ending June 30, 1848.....	.....do.....	258,917,226	8,014,822	3.09	
Do.....1849.....	.....do.....	217,629,131	7,500,482	3.45	
Do.....1850.....	.....do.....	368,328,298	12,118,006	3.28	
Do.....1851.....	.....do.....				



## K—Continued.

## No. 15.—CIGARS.

Imported.	Tariff.	Thousands.	Value.	Average.	Result.
Nine months ending June 30, 1843...	Specific .....	34,510	\$463,431	\$13 43	Average invoice cost at specific duty ..... \$15 48 Average invoice cost at ad valorem duty.... 11 89 Reduction in average cost..... 3 69 Equal to.....per cent. 23 19
Year ending June 30, 1844.....	do.....	64,607	974,431	15 08	
Do.....1845.....	do.....	73,366	1,160,644	15 82	
Do.....1846.....	do.....	79,218	1,282,861	16 20	
Five months ending Nov. 30, 1846...	do.....	40,746	645,389	15 84	
Seven months ending June 30, 1847...	Ad valorem ..	43,268	562,512	12 81	
Year ending June 30, 1848.....	do.....	125,065	1,360,408	10 83	
Do.....1849.....	do.....	106,982	1,439,765	13 46	
Do.....1850.....	do.....	124,303	1,469,097	11 81	
Do.....1851.....	do.....	216,792	2,520,902	11 32	

## K—Continued.

## No. 16.—CARPETING.

(Ingrain, Brussels, and all other woolen carpetings.)

Imported.	Tariff.	Yards.	Value.	Average.	Result.
Nine months ending June 30, 1843..	Specific .....	142,768	\$180,810	\$1 27	Average invoice cost at specific duty..... \$1 38 Average invoice cost at ad valorem duty..... 90 Reduction in average cost..... 48 Equal to..... per cent. 34
Year ending June 30, 1844.....	do.....	218,161	289,475	1 33	
Do.....1845.....	do.....	306,446	431,914	1 41	
Do.....1846.....	do.....	172,226	253,513	1 47	
Five months ending Nov. 30, 1846..	do.....	56,014	83,265	1 49	
Seven months ending June 30, 1847.	Ad valorem ..	391	335	86	
Year ending June 30, 1848.....	do.....	695,328	634,360	92	
Do.....1849.....	do.....	542,376	464,468	85	
Do.....1850.....	do.....	833,500	719,904	86	
Do.....1851.....	do.....	984,944	923,989	94	

*Statement L, Nos. 1 and 2.*

BUREAU OF TOPOGRAPHICAL ENGINEERS,  
*Washington, October 13, 1851.*

SIR: I have the honor of transmitting herewith an extract from the annual report of Lieutenant Colonel S. H. Long, corps topographical engineers, showing the progress of construction of the marine hospitals under his superintendence, with estimates for their completion.

Respectfully, sir, your obedient servant,

J. J. ABERT,  
*Colonel Corps Topographical Engineers.*

HON. T. CORWIN,  
*Secretary of the Treasury, Washington.*

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L, No. 1.

*Extract from the annual report of Lieutenant Colonel S. H. Long, corps topographical engineers, dated September 1, 1851.*

MARINE HOSPITAL AT LOUISVILLE.

The condition, progress, &c., of this work, prior to the commencement of the last fiscal year, have been sufficiently explained in my annual report of September 1st, 1850, and in two special reports subsequently rendered, viz: My report of 23d October following, to the Topographical Bureau, and of 7th of November of the same year, to the honorable Secretary of the Treasury, to which I take leave to refer, for all desired details under the head, up to the date last mentioned.

From this date even to the present time, the construction of the hospital has been prosecuted with the utmost diligence, and embraces the following items of work, most of which have been commenced and completed within the period just specified. The items are as follows, viz:

The procuring and setting of all the mantels, fireplaces, and fire fronts, together with iron railings required for the hospital; the plastering of all the rooms and apartments of the building, from the cellars to the belvidere, inclusive, together with the over-coating of the sub-basement columns or piers, and the exterior of the foundation walls below the water-table, with hydraulic cement; the procuring and setting of the hot-air and ventilating registers; the interior or architrave finish of all the rooms of the hospital, (the lumber for which having been previously dressed;) the hanging of all the doors and windows of the hospital; the completion of all the stairways from the cellar to the belvidere, inclusive of hand-rails, balusters, newel posts, &c.; the glazing required in connexion with the windows, doors, &c.; the painting of the entire hospital outside and inside, including all the piazza floors, the floors of all the main wards, &c.; the lining and setting of four water-tanks, holding nearly two thousand gallons each; the tubing and other plumber's work for connecting said tanks with the water-closets, &c., and for conveying the wash water from the tanks to the rain-water cisterns; the digging and lining of two rain-water cisterns containing three hundred and thirty-two barrels each; the digging and

walling of two privy vaults twenty feet deep, as receptacles for all discharges from the water-closets, sinks, &c.; paving the hospital cellar with brick, and grouting the same with hydraulic cement; the construction of four bathing-rooms under the front piazza of the hospital; the construction and erection of a flag-staff rising twenty-four feet above the peak of the belvidere, and the application of a lightning-rod, cardinal pointers, and a vane six feet long, fashioned in the likeness of an *alligator gar*. A double force-pump, for the purpose of draining water from the cisterns, whenever required, to replenish either or all of the tanks near the cornice of the building, has been procured, and set under the rear piazza, and is to be supplied with an ascending copper pipe, with such hose-nozzle, hoses, &c., as are needful for the conveyance of water to all parts of the hospital.

Sloped pavements of broken stone, together with an open drain of brick-work for carrying off the water that may fall upon the pavements, and in rear of the hospital; said pavement and drain covering an area of eighty-seven by fifty-four feet, and the latter discharging into a subterranean sewer. A substantial under-ground sewer of brick masonry, fifteen by eighteen inches in the clear, and five hundred and thirteen feet long, with suitable gratings of cast iron at the inlets and outlets, to exclude vermin, &c.; said sewer being in a suitable position, and having a sufficient capacity to convey away all the water that may fall upon the hospital lot.

In addition to the works above enumerated, others have been commenced and considerable progress has been made towards their completion; but the appropriations for this hospital having been very nearly or quite exhausted, their completion has been unavoidably postponed. Among the works alluded to are,—the construction of two hot-air furnaces for warming the building, &c. Flues, &c., connecting the same with the chimneys and with the rooms to be warmed. The construction of a balustrade fence along High street, in front of the hospital. The construction of a similar fence, enclosing a hospital yard. The construction of a similar fence, enclosing a hospital yard of suitable size. Surface grading in the front, rear, and at both ends of the hospital. Paving of brick-walks on all sides of the same. Surface-drains for conveying water from High street back upon the lot, in order to obviate the abrasions and washings of the street and hill slope in front.

The means of accomplishing these, and a few other items of work not yet commenced, are to be looked for in a new appropriation for this hospital, which may be estimated as follows:

For completing two brick furnaces.....	\$2,000
Do brick side-walks.....	500
For fencing river front of hospital lot and yard.....	2,000
For grading and draining.....	500
Total.....	<u>5,000</u>

The Louisville hospital has been so far completed as to admit the reception of furniture ever since the 18th of July last, agreeably to my report of that date.

## MARINE HOSPITAL AT PADUCAH.

My annual report of September 1, 1850, explains the nature and extent of the work done, materials procured, &c., in furtherance of the construction of the hospitals, and the condition and progress of the same, at the commencement of the last fiscal year.

The operations performed and the progress made towards the completion of this work, during the year commencing July 1, 1850, and ending June 30, 1851, and subsequently to the present date, are as follows, viz :

The erection of the entire superstructure of brick-work, including the setting of stone water-tables, door and window sills and caps, door-frames, window-frames, &c., for the entire building. The flooring, roofing and trimming the same, and supplying the cornices with copper gutters. Setting all the stone door-steps and paving the cellar with brick and hydraulic cement. The construction and setting of four iron tanks, containing more than two thousand gallons each. Two rain-water cisterns containing about three hundred and thirty barrels each. Two privy vaults of suitable size. The various items of plumber's work, tubing, &c., required in connexion with the cisterns, tanks, water-closets, &c., &c. Painting of the whole exterior of the building with three coats. Plastering of all the rooms and apartments of the building. Procuring and setting hot-air and ventilating registers. The fitting and setting of the interior and architrave finish of the entire building. The fitting and hanging of all the doors, windows, shutter-blinds, &c., of the same. The construction and erection of all the stairways of the building, from the cellar to the belvedere inclusive, together with various other items of less note.

The works in progress and remaining to be completed, are as follows, viz : Procuring and setting iron-railings in the piazzas. The grading in front and rear and at both ends of the hospital. Setting of fire fronts, grates, &c. The construction of the hot-air furnaces, with their flues, &c., for warming the building. Procuring and applying a double-acting force pump to serve as a fire-engine, &c., for the hospital. Procuring and setting the flag-staff, lightning-rod, cardinal pointers, vane, &c. Painting the interior of the hospital throughout with three coats, and the exterior of the roof and cornice with one coat. Laying walks, paved with brick, on all sides of the building. Construction of balustrades, fence around hospital yard. Surface-drains on various parts of the lot ; together with sundry minor operations too numerous to mention.

The hospital at this time may be regarded as ready for the reception of furniture ; the painting of the interior and the setting of the fire-fronts, grates, &c., being the main impediments to its immediate occupancy.

## MARINE HOSPITAL AT NAPOLEON.

Although arrangements were made, by contracts or otherwise, for the preparation and delivery of most of the materials, labor, &c., required for the construction of this work, prior to the commencement of the last fiscal year, yet all operations at the site of the hospital were rendered impracticable, by reason of excessive floods in the Arkansas and Mississippi rivers, till August, 1850, when operations preliminary to the work of construction were commenced with the utmost energy, and prosecuted with signal despatch,

during the entire low-water season, beginning at that time, and continuing till the 8th of March, 1851, about seven months only.

The work done and materials delivered during this comparatively short period were as follows, viz: the manufacture of all the bricks required for the foundations and walls of the entire hospital. The digging of a cellar under the entire building; the formation of terraces around the same. The digging and walling of a well, which at first gave promise of a plentiful supply of pure water, but soon failed. The delivery of all the timber required for the frame work of the hospital. The preparation and delivery of all the window and door-frames, doors, sash, shutter-blinds, architrave finish, &c., &c., for the entire building. The delivery of sand and lime, and the construction of all the brick masonry of the foundations, walls, chimneys, &c., from the bottom of the cellar to the tops of the chimneys. The procuring and insertion of cast-iron door and window sills and caps, and of cast-iron chimney bands and copings for the chimneys. The fitting and laying of all the flooring and ceiling joists, rafters, girders, &c., of the entire building. These several items were accomplished and ready for inspection and acceptance on the 8th of March, as above, the very day on which the floods of the two rivers above mentioned had again become so excessive as to prevent any further operations on the ground surrounding the base of the hospital.

The work of construction was nevertheless prosecuted with great energy and zeal, under exceedingly unfavorable circumstances, for the purpose of having the masonry protected as much as possible from the ravages of the weather during the approaching hot and inclement season.

On the 7th of June following, the roofing and shingling, the formation and application of the cornices with gutters of copper, and various other outside work for protecting the building from storms, winds, rains, and other accidents of weather, were so far advanced as to secure the desired protection. Prior to the date last mentioned, sickness and general debility began to prevail among the workmen and laborers, and throughout the neighborhood, to an alarming extent. A single individual only, of all employed in the public service, was exempted from disease, and the residue were so much alarmed that they would not consent to serve at that place any longer. Under these circumstances, it was deemed advisable to suspend all further operations on this hospital, except in so far as relates to its custody and safe keeping, till the middle or latter part of the current month, when the work of construction is expected to be resumed again with due energy.

In the mean time, arrangements have been made for the supply of all the additional materials, labor, &c., required for the completion of the hospital in due time, probably within the period of low water, expected to prevail during the current fall and winter.

Among the items of work required to be done, must be included the sinking and lining of two rain-water cisterns of about four hundred barrels each; the enlargement of the terrace around the building to such an extent that it may present a surface one hundred and fifty feet wide on all sides of the building, &c. It is believed that the enlargement of the terrace just mentioned will contribute to the exclusion of water from the cellar of the hospital, which without it is liable to be charged with water, by underground percolations, whenever the surface of the river is higher than the bottom of the cellar.

Various other items of work also remain to be done, viz: the laying of

the floors of the entire building; digging and walling sink vaults; grading and paving cellar floor and the walks around the building; procuring and setting door steps of cast iron; setting plaster grounds and plastering the interior of the entire building; procuring and setting hot-air and ventilating registers; fitting and setting the interior and architrave finish; fitting and hanging doors, window shutters, blinds, &c.; preparing and setting all the staircases of the building; procuring and setting the fire fronts, grates, &c., and laying the hearths; painting the exterior and interior of the building with three coats; procuring and setting four iron water tanks, and all the plumber's work in connexion with the same, and with the water closets, bath rooms, kitchen, wash room, wash room cisterns, &c; the construction and application of a double force pump, or fire-engine, for the conveyance of water from the cisterns to all parts of the building; with various other items that need not here be enumerated.

#### MARINE HOSPITAL AT NATCHEZ.

The condition, progress and prospects of this work, on the 1st September, 1850, were fully explained in my annual report of that date. To this, as also to a subsequent report to the Topographical Bureau, dated October 23d of the same year, I take leave to refer for any details that may be required in relation to these topics.

All operations on this hospital except such as could be performed by a single individual employed as carpenter and keeper of the building, and the public property pertaining thereto, were suspended from the 30th of June, 1850, to an early date in April, 1851, for want of adequate appropriations to carry on the work. At the date last mentioned, and in anticipation of the appropriation by Congress for the fiscal year beginning on the 1st day of July, 1851, the work was resumed with all practicable energy, and has been prosecuted with vigor till the present time.

The items of work done, materials procured, &c., since the resumption as above, are as follows, viz :

Four large rain-water cisterns, containing about four hundred and fifty barrels each, have been formed beneath the surface of the ground; also two privy sink baths walled and lined with cement, twenty feet deep. The entire cellar has been paved with brick; the floors of the entire hospital previously begun, have been completed; the door steps have been set; the plaster grounds have been applied; the plastering of the entire building is nearly completed; the interior or architrave finish has mostly been fitted and applied; the staircases of the entire building, from the cellar pavements to the belvidere, are nearly completed; the exterior of the entire building has been covered with three coats of paint; the doors, windows and shutter blinds have been hung; the fire fronts and grates have been procured, and the hearths laid. Much of the grading around the hospital has already been done.

In addition to the works in progress as above, arrangements have been made for completing the grading around the building; for laying brick pavements on the terrace walks in front and rear, and at the ends of the hospital, together with broad steps paved with brick, leading down the slopes of the terrace, in front and rear of the building; for connecting the tanks with the cisterns, water closets, washstands, kitchen, wash-room,

&c., by means of leaden pipes and other plumber's work : for painting the interior of the entire hospital ; for the construction of two hot-air furnaces with flues, &c., for warming the hospital : for the construction and application of a double force pump or fire-engine, with the conduits, hose, &c., requisite to convey the water from the cisterns to all parts of the building ; for the setting of the fire fronts, grates, &c., in all the fireplaces ; for the drainage of the hospital site, &c., by means of paved surface drains and other water ways ; for fencing the hospital yard : for the construction and erection of a flag-staff, lightning rod, cardinal pointers, vanes, &c., and for various other works and operations that need not here be enumerated. To these several duties must be added the superintendence of the various works now in progress at the several marine hospitals, hereinbefore treated of, together with such other operations as may be found needful to the entire completion of those hospitals.

It remains that I here subjoin an estimate of the sums required for the prosecuting the various works committed to my charge, and for the completion of the several hospitals under my superintendence within the next fiscal year, beginning on the 1st of July, 1852, and ending on the 30th June, 1853, which is briefly as follows :

Probable amount required for the completion of the grading, draining, fencing, warming and watering the marine hospital at Louisville, Kentucky-----	\$5,000 00
At Paducah-----	5,000 00
At Napoleon-----	6,000 00
At Natchez-----	6,000 00

Respectfully submitted :

S. H. LONG,  
*Lieut. Col. Top. Eng., Supt. Eng. W. R. Impts., &c. &c.*

Col. J. J. ABERT,  
*Chief Topographical Engineers, Washington, D. C.*

### L. No. 2.

*Estimate of the cost of completing the United States Marine Hospital near  
St. Louis, Missouri.*

For lumber, carpenters' work and hardware-----	\$9,976 00
For lathing, plastering, painting and glazing-----	4,025 00
For plumber work, cisterns, tanks, baths, kitchen and water pipes-----	5,450 00
For iron railing for porticoes, steps, &c., paving and flagging,	1,800 00
	21,251 00

Heating the building by steam will require the unexpended balance of  
\$5,519 11.

Respectfully, your obedient servant,

DANIEL T. WRIGHT,  
*Superintendent.*

Hon. T. CORWIN,

*Secretary of the Treasury, Washington, D. C.*

St. Louis, Mo., November 17, 1851.



OFFICE UNITED STATES MARINE HOSPITAL,  
Near St. Louis, Missouri, November 17, 1851.

SIR: In obedience to your request contained in your communication of the 6th instant, I have the honor to submit the following report in respect to the United States marine hospital now being erected near the city of St. Louis, Missouri.

The building now presents the

Stone work, complete except the steps and chimney caps, which require setting.

Brick work finished, except four pediments, and the building of the chimneys above the roof.

Cast-iron work, finished except the railing.

Frame carpenter's work, for roof and belvedere now being raised, and the work on the cornice progressing.

The building may be closed in and protected from exposure by the 20th of next month, and there will then remain an unexpended balance, of the several appropriations made by Congress for this work, amounting to five thousand five hundred and nineteen dollars and eleven cents (\$5,519 11.)

The building can be completed and ready for the reception of patients by the first day of September, 1852. In the opinion of the undersigned, the existing appropriations are insufficient to complete the building, and he submits herewith an estimate of the sum which will be required for that object, and begs that reference may be had to the statement marked No. 1, wherein it is shown that an additional appropriation of *twenty-one thousand two hundred and fifty-one dollars will be required*. As it will require the full amount of unexpended balance to heat the building, that sum may remain for that purpose if sanctioned by you.

In addition to the information called for, I beg leave to state that, owing to the bad quality of the material (cut stone) used in the foundation of the building by my predecessor, I was compelled, for the safety of the building, to remove it and supply its place with a better article. This change was necessarily attended with considerable expense. I also raised the height of the basement, and have so arranged the plan of the building that it will, when completed, accommodate two hundred inmates instead of one hundred and forty, according to the original plan.

I send herewith a drawing of the building and its position, which occupies a beautiful eminence, affording a pleasing view of the river and surrounding country. Though not required to do so by your communication, yet I beg to suggest the pressing necessity which exists for the completion of the United States marine hospital at this place. According to the report of the custom-house officer, the number of enrolled steam vessels at Saint Louis on the 31st December, 1850, was one hundred and eighteen, measuring 27,962 tons, and sixty-two vessels, other than steamers, measuring 4,004 tons, which, at a low estimate, would employ four thousand men and boys; and I learn, from the proper officer of the city hospital, that seven-twelfths of the disabled river men are provided for at that institution; and I am furthermore informed that about one hundred are annually provided for by the Sisters of Charity at their institution, without compensation. These, with the great number of foreign immigrants who crowd the hospitals of Saint Louis, constitute a most onerous burden upon its citizens. But, what is more to be deplored, the crowded condition of the hospitals detracts from the comfort of their inmates, and is doubtless the cause of much suffering and many deaths. In conclusion, allow me to say that suffering humanity

demand the speedy completion of the United States marine hospital at this place, and it is obedience to her voice that has led me to transgress the strict requirements of your communication in this report.

I have the honor to be, with great respect, your obedient servant,

DANIEL T. WRIGHT,

*Superintendent.*

To Hon. T. CORWIN,

*Secretary of the Treasury, Washington City, D. C.*

## M.

*Statement exhibiting the quantity and value of cotton, tobacco and rice exported annually from 1821 to 1851, inclusive.*

Years.	COTTON.			TOBACCO.		RICE.	
	Sea Island—lbs.	Other—lbs.	Value.	Hogshheads.	Value.	Tierces.	Value.
1821.....	11,844,066	113,549,339	\$20,157,484	66,858	\$5,648,902	88,291	\$1,419,07
1822.....	11,250,635	133,424,460	21,065,058	83,169	6,222,838	87,009	1,551,82
1823.....	12,136,688	161,586,582	20,445,520	90,009	6,282,672	101,115	1,826,985
1824.....	9,625,722	132,845,941	21,947,401	77,883	4,855,566	113,229	1,882,982
1825.....	9,665,278	166,784,629	36,846,649	75,984	6,115,623	97,015	1,925,245
1826.....	6,972,852	198,562,563	25,025,214	61,098	5,347,208	111,063	1,977,446
1827.....	15,140,798	279,169,317	29,350,545	100,025	6,577,123	133,518	2,313,908
1828.....	11,288,419	199,302,044	22,487,229	96,278	5,269,900	175,019	2,620,696
1829.....	12,833,307	252,003,879	29,675,811	77,131	4,982,974	132,923	2,514,370
1830.....	8,147,165	290,311,937	26,674,883	83,810	5,586,365	130,697	1,986,824
1831.....	8,311,762	268,668,022	25,289,492	86,718	4,892,388	116,517	2,016,267
1832.....	8,743,373	313,471,749	31,724,682	106,806	5,999,769	120,327	2,152,631
1833.....	11,142,987	313,555,617	36,191,105	83,153	5,755,968	144,163	2,744,418
1834.....	8,085,987	376,631,970	40,448,402	87,979	6,595,305	121,886	2,122,272
1835.....	7,752,736	379,606,256	64,961,302	94,353	8,250,577	110,861	2,210,331
1836.....	7,849,507	415,781,710	71,284,925	109,042	10,058,640	212,983	2,548,750
1837.....	6,286,971	438,924,566	63,240,102	100,232	5,795,647	106,084	2,309,279
1838.....	7,286,340	588,665,957	61,556,811	100,596	7,392,029	71,048	1,721,819
1839.....	5,107,404	408,516,808	61,238,982	78,995	9,882,943	93,820	2,460,198
1840.....	8,779,660	735,161,392	83,870,307	119,484	9,383,957	101,660	1,942,076
1841.....	6,237,424	523,966,676	54,330,341	147,825	12,576,703	101,617	2,010,107
1842.....	7,254,009	577,462,918	47,593,464	158,710	9,540,755	114,617	1,907,387
1843.....	7,515,079	784,782,027	49,119,806	94,454	4,650,979	106,766	1,625,726
1844.....	6,099,076	657,534,379	54,063,501	163,042	8,397,255	184,715	2,182,468
1845.....	9,389,625	863,516,371	51,739,643	147,163	7,469,819	118,621	2,160,456
1846.....	9,388,533	638,109,522	42,767,341	147,998	8,478,270	124,007	2,564,991
1847.....	6,293,973	520,925,985	53,415,848	135,762	7,242,086	144,427	3,605,896

M—Continued.

Years.	COTTON.			TOBACCO.		RICE.	
	Sea Island—lbs.	Other—lbs.	Value.	Hogsheads.	Value.	Tierces.	Value.
1848.....	7,724,148	806,550,283	\$61,998,291	130,665	\$7,551,122	100,403	\$2,331,824
1849.....	11,060,259	1,014,633,010	66,890,967	101,521	5,804,207	128,861	2,569,862
1850.....	8,230,463	627,145,141	71,984,616	145,729	9,951,023	127,069	2,631,557
1851.....	8,299,656	918,037,433	112,815,817	95,945	9,219,251	105,590	2,170,927

N. SARGENT, Register.

TREASURY DEPARTMENT, REGISTER'S OFFICE, November 10, 1851.

[11]

## N.

*Statement showing the value of goods remaining in warehouses at the close of each quarter, from the 30th of September, 1847, to the 30th of June, 1851, as exhibited by the quarterly returns of the collectors of the customs, under the provisions of the act of the 6th of August, 1846: and also the amount of duties payable thereon.*

Periods ending—	Goods remaining in warehouses.	
	Value.	Duties.
September 30, 1847.....	\$2,618,758	\$1,264,624 55
December 31, 1847.....	4,863,591	1,524,887 16
March 31, 1848.....	5,291,179	1,669,067 39
June 30, 1848.....	6,272,275	1,936,464 00
September 30, 1848.....	5,419,676	1,649,182 85
December 31, 1848.....	7,201,246	2,152,544 50
March 31, 1849.....	5,450,593	1,702,639 37
June 30, 1849.....	7,830,010	2,501,394 35
September 30, 1849.....	6,021,627	1,927,754 72
December 31, 1849.....	6,163,151	1,997,536 75
March 31, 1850.....	5,600,318	2,009,165 33
June 30, 1850.....	8,247,055	3,077,129 80
September 30, 1850.....	8,162,721	2,930,035 49
December 31, 1850.....	7,307,623	2,384,419 50
March 31, 1851.....	7,127,751	2,293,090 13
June 30, 1851.....	10,047,061	3,172,328 08
Total.....	104,624,635	34,192,263 97
Average quarterly value.....	\$6,539,039	\$2,137,016 49

N. SARGENT, Register.

TREASURY DEPARTMENT, Register's Office, December 27, 1851.

Statement exhibiting the value of hempen goods imported annually from 1821 to June 30, 1851, inclusive.

Years ending—		MANUFACTURES OF HEMP.						Total value.
		Sail duck:	Sheeting, brown and white.	Ticklenburgs, osnaburgs, and burlaps.	Cotton bagging.		Other manufactures of hemp:	
					Square yards.	Value.		
September 30...	1821.....	\$894,276	\$226,174					\$1,120,450
Do.....	1822.....	1,524,486	332,842					1,857,328
Do.....	1823.....	1,024,180	472,826					1,497,006
Do.....	1824.....	990,017	678,735	\$37,338	898,775	\$111,486	\$30,618	1,873,114
Do.....	1825.....	677,151	405,739	381,063	4,470,775	637,023	33,408	2,134,384
Do.....	1826.....	856,474	470,705	411,667	2,204,822	274,973	48,909	2,662,728
Do.....	1827.....	766,810	336,124	353,826	3,346,427	366,913	60,208	1,883,466
Do.....	1828.....	1,041,749	352,468	604,674	3,667,121	408,626	43,052	2,600,581
Do.....	1829.....	362,333	247,865	631,709	2,729,835	274,073	52,505	1,468,485
Do.....	1830.....	317,347	250,237	668,665	688,015	69,126	133,103	1,333,478
Do.....	1831.....	470,060	351,499	614,645	207,906	18,965	122,009	1,477,119
Do.....	1832.....	776,191	346,027	368,320	803,489	87,966	84,114	1,660,618
Do.....	1833.....	860,323	327,518	648,891	1,421,185	158,681	40,622	2,036,015
Do.....	1834.....	720,780	400,000	300,000	1,962,920	237,260	21,955	1,679,995
Do.....	1835.....	828,826	426,942	337,011	7,054,789	921,036	39,032	2,655,847
Do.....	1836.....	662,652	655,141	392,194	13,203,095	1,701,451	54,459	3,365,896
Do.....	1837.....	540,421	541,771	384,716	3,431,675	429,251	55,467	1,951,626
Do.....	1838.....	683,070	336,345	262,725	1,670,337	173,825	47,292	1,591,157
Do.....	1839.....	760,199	535,789	483,269	2,093,693	220,023	97,436	2,096,716
Do.....	1840.....	615,723	261,173	329,054	2,986,075	310,211	71,934	1,588,155
Do.....	1841.....	904,493	325,167	539,772	6,786,889	723,678	73,271	2,566,381
Do.....	1842.....	616,880	119,782	187,006	4,855,255	421,824	37,042	1,273,684
9 months to June 30, 1843.....		236,965	83,503	68,099	1,410,628	105,403	41,842	626,602
Year to June 30.....	1844.....	850,317	200,216	236,736	1,696,868	163,094	68,667	1,608,420

Do.....1845.....	272,091	106,790	195,471	1,551,044	117,331	905,782	897,945
Do.....1846.....	217,162	64,010	278,309	79,965	5,972	201,211	766,664
Do.....1847.....	205,593	60,066	228,960	123,189	10,396	184,856	684,880
Do.....1848.....	280,518	49,546	195,157	298,918	27,525	105,329	658,075
Do.....1849.....	125,788	52,353	119,217	1,453,248	121,368	101,053	519,774
Do.....1850.....	68,386	13,670	67,364	2,914,304	251,905	187,121	588,416
Do.....1851.....	74,854	1,868	7,967	1,015,132	98,164	483,925	661,568

TREASURY DEPARTMENT, *Register's Office.*

N. SARGENT, *Register.*

P.

*Statement exhibiting the quantity and value of hemp and cordage imported annually from 1821 to 1851 inclusive.*

Years ending—	HEMP AND CORDAGE.						
	Hemp, unmanufactured.		Cordage, tarred, and cables.		Cordage, untarred, and yarn.		Total.
	Cwt.	Value.	Pounds.	Value.	Pounds.	Value.	
September 30.....1821.....	86,192	\$510,489	931,697	\$107,867	.....	.....	\$618,356
1822.....	178,503	1,054,764	1,725,142	147,821	.....	.....	1,202,085
1823.....	115,735	674,454	1,424,900	122,277	.....	.....	796,731
1824.....	94,846	485,075	489,877	19,170	49,280	\$4,923	509,168
1825.....	76,817	431,787	858,138	42,646	105,086	19,393	484,826
1826.....	88,116	551,757	1,505,167	77,186	119,107	7,413	636,350
1827.....	100,566	635,854	1,127,109	56,162	85,236	6,339	698,355
1828.....	161,604	1,075,243	2,164,096	109,451	81,629	6,744	1,191,441
1829.....	95,195	655,935	1,848,254	97,436	109,775	8,868	762,230
1830.....	30,782	200,338	1,437,735	71,291	152,826	8,114	279,743
1831.....	51,909	295,706	681,507	33,522	105,725	6,344	335,572
1832.....	150,739	866,865	2,459,501	116,389	79,129	3,959	987,253
1833.....	94,026	470,973	3,012,738	112,538	148,509	10,513	621,054
1834.....	102,211	514,743	3,895,598	147,805	160,727	6,759	669,307
1835.....	102,163	528,981	2,157,071	81,594	152,551	5,766	616,341
1836.....	147,190	815,558	1,866,773	82,561	117,613	5,984	901,103
1837.....	84,965	483,792	754,582	34,108	262,655	12,180	530,080
1838.....	81,391	512,506	1,441,464	75,142	194,914	9,917	597,565
1839.....	87,461	607,766	1,881,152	106,902	30,901	2,331	710,999
1840.....	93,788	686,777	1,480,933	89,504	379,014	13,434	789,715
1841.....	72,962	561,039	1,813,045	112,995	1,408,247	68,930	712,970
1842.....	39,730	267,819	1,019,740	66,548	390,806	19,491	353,888
9 months to June 30, 1843.....	36,299	228,882	381,612	26,570	258,613	6,820	292,278
Year to June 30.....1844.....	50,752	292,365	1,124,529	68,319	319,829	14,817	345,531

[11]

76



1845.....	28,155	145,209	1,114,839	67,209	415,963	22,391	234,809
1846.....	31,131	180,281	805,509	47,289	825,828	38,618	266,188
1847.....	9,545	56,377	763,655	46,711	388,727	20,881	123,969
1848.....	27,157	187,905	3,138,920	223,904	287,874	15,622	427,431
1849.....	86,892	491,633	1,887,482	129,120	252,271	17,290	638,043
1850.....	85,394	579,814	2,040,091	139,751	1,884,400	117,626	837,191
1851.....	37,530	223,984	636,847	41,173	2,853,000	172,612	437,769

THE TREASURY DEPARTMENT, *Register's Office*, November 10, 1851.

N. SARGENT, *Register*.

Q.

*Statement exhibiting the value of certain articles imported during the years ending on the 30th of June, 1844, 185, 18 46, 1848, 1849, 1850 and 1851, (after deducting the re-exportations;) and the amount of duty which accrued on each during the same periods, respectively.*

Articles.	1844.		1845.		1846.	
	Value.	Duties.	Value.	Duties.	Value.	Duties.
Woollens.....	\$9,408,279	\$8,313,495	\$10,504,423	\$3,731,014	\$9,935,925	\$3,480,797
Cottons.....	13,236,830	4,850,731	13,360,729	4,008,272	12,857,422	4,865,483
Hempen goods.....	865,427	213,862	801,661	198,642	696,888	138,394
Iron and manufactures of.....	2,395,760	1,607,113	4,075,142	2,416,063	3,660,581	1,629,581
Sugar.....	6,807,245	4,597,093	4,019,708	2,555,075	4,397,239	2,713,866
Hemp, unmanufactured.....	261,913	101,338	140,372	55,122	180,221	62,282
Salt.....	892,112	654,881	883,359	678,069	748,566	509,244
Coal.....	203,681	133,845	187,962	130,221	336,691	254,149
<b>Total.....</b>	<b>34,161,247</b>	<b>15,472,358</b>	<b>31,003,356</b>	<b>14,671,418</b>	<b>32,813,533</b>	<b>\$13,653,796</b>

[11]

73

Q—Continued.

Articles.	1848.		1849.		1850.		1851.	
	Value.	Duties.	Value.	Duties.	Value.	Duties.	Value.	Duties.
Woollens.....	\$15,061,102	\$4,196,007	\$18,503,202	\$3,723,768	\$16,900,916	\$4,682,457	\$19,239,930	\$5,331,600
Cottons.....	17,205,417	4,166,673	15,183,759	3,769,565	19,681,612	4,896,278	21,486,502	5,348,695
Hempen goods.....	606,900	121,880	460,335	92,067	490,077	98,015	615,239	123,048
Iron and manufactures of..	7,060,470	2,118,141	9,262,667	2,778,770	10,864,680	3,259,404	10,780,312	3,234,094
Sugar.....	8,775,223	2,632,567	7,275,780	2,182,734	6,950,716	2,085,215	13,478,709	4,043,613
Hemp, unmanufactured...	180,335	54,100	478,232	143,470	574,783	172,435	212,811	63,843
Salt.....	1,027,656	205,531	1,424,529	284,906	1,227,518	245,504	1,025,300	205,060
Coal.....	426,997	128,099	382,254	114,676	361,855	108,557	478,095	143,429
Total .....	50,344,100	13,622,498	47,970,658	13,089,956	57,052,157	15,547,865	67,316,898	18,493,382

TREASURY DEPARTMENT, Register's Office, January 3, 1852.

N. SARGENT, Register.

*Statement exhibiting the amount of coin and bullion imported and exported annually from 1821 to 1851 inclusive; and also the amount of importation over exportation, and of exportation over importation, during the same years.*

Years ending—	COIN AND BULLION.		
	Imported.	Exported.	Excess of— Import'n over Export'n over exportation. importation.
September 30.....1821	\$8,064,890	\$10,478,059	\$2,413,159
1822	3,369,846	10,810,160	7,440,314
1823	5,097,896	6,372,987	1,275,091
1824	8,379,835	7,014,552	\$1,365,283
1825	6,150,765	8,797,055	2,646,290
1826	6,880,956	4,704,533	2,176,423
1827	8,151,130	8,014,880	136,250
1828	7,480,741	8,243,476	762,735
1829	7,403,612	4,924,020	2,479,592
1830	8,153,994	2,178,773	5,975,221
1831	7,305,945	9,014,931	1,708,986
1832	5,907,504	5,656,340	251,164
1833	7,070,368	2,611,701	4,458,667
1834	17,911,632	2,076,758	15,834,874
1835	13,131,447	6,477,775	6,653,672
1836	13,400,881	4,324,336	9,076,545
1837	10,516,414	5,976,249	4,540,165
1838	17,747,116	3,508,046	14,239,070
1839	6,595,176	8,776,743	3,181,567
1840	8,882,813	8,417,014	465,799
1841	4,988,633	10,034,332	5,045,699
1842	4,087,016	4,813,539	726,523
9 months to June 30, 1843	22,320,335	1,520,791	20,799,544
Year to June 30.....1844	5,830,429	5,454,214	376,215
1845	4,070,242	8,606,495	4,536,253
1846	3,777,732	3,905,268	127,536
1847	24,121,289	1,907,789	22,213,500
1848	6,360,224	15,841,620	9,481,396
1849	6,651,240	5,404,648	1,246,592
1850	4,628,792	7,522,994	2,894,202
1851	5,453,981	29,465,752	24,011,771
Total.....	268,903,854	222,855,800	112,290,606
			66,242,632

TREASURY DEPARTMENT,  
Register's Office, December 27, 1847.

N. SARGENT, Register.

## S No. 1.

Statement exhibiting the quantity and value of bar iron, pig iron, and old and scrap iron, imported annually from 1821 to 1851.

Years ending—	IRON.								Total value.
	Bar, manufactured by rolling.		Bar, manufactured other- wise.		Pig iron.		Old and scrap iron.		
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	
September 30. .... 1821	386, 778	\$1, 213, 041							\$1, 213, 041
1822	684, 139	1, 864, 868							1, 864, 868
1823	698, 013	1, 891, 635							1, 891, 635
1824	115, 809	240, 727	425, 966	\$1, 205, 856	2, 313	\$3, 444			1, 450, 027
1825	85, 010	224, 497	492, 998	1, 562, 146	16, 309	36, 513			1, 823, 156
1826	88, 741	223, 259	467, 515	1, 590, 350	34, 092	67, 004			1, 880, 613
1827	162, 052	347, 792	440, 200	1, 323, 749	35, 118	46, 881			1, 718, 422
1828	205, 897	441, 000	667, 849	2, 141, 178	69, 937	93, 025			2, 675, 203
1829	66, 408	119, 326	589, 638	1, 884, 049	22, 771	28, 811			2, 032, 186
1830	138, 981	226, 336	613, 865	1, 730, 375	22, 499	25, 644			1, 982, 355
1831	344, 918	544, 664	466, 359	1, 260, 166	138, 967	160, 681			1, 965, 511
1832	427, 745	701, 549	763, 002	1, 929, 493	203, 025	222, 303			2, 853, 345
1833	560, 566	1, 002, 750	722, 486	1, 837, 473	186, 601	217, 668	19, 963	\$24, 035	3, 081, 926
1834	577, 927	1, 187, 236	635, 698	1, 742, 883	222, 265	270, 325	32, 746	33, 243	3, 233, 687
1835	566, 204	1, 050, 152	630, 584	1, 641, 359	245, 917	289, 779	12, 806	11, 609	2, 992, 899
1836	933, 514	2, 131, 828	658, 752	1, 891, 214	170, 822	272, 978	24, 953	28, 224	4, 324, 244
1837	956, 792	2, 573, 367	626, 512	2, 017, 346	282, 571	422, 929	15, 333	18, 391	5, 032, 033
1838	723, 486	1, 825, 121	426, 889	1, 166, 196	243, 830	319, 099	8, 739	7, 567	3, 317, 983
1839	1, 205, 697	3, 181, 180	711, 153	2, 054, 094	250, 154	285, 300	11, 783	10, 161	5, 530, 735
1840	656, 574	1, 707, 649	576, 881	1, 689, 831	110, 314	114, 562	14, 142	15, 749	3, 527, 791
1841	1, 261, 118	2, 172, 278	592, 108	1, 614, 619	245, 353	223, 228	15, 670	10, 537	4, 020, 662
1842	1, 231, 985	2, 058, 453	390, 236	1, 041, 410	378, 881	295, 281	13, 713	8, 207	3, 398, 354

S No. 1—Continued.

[11]

Years ending—	IRON.								Total value.
	Bar, manufactured by rolling.		Bar, manufactured otherwise.		Pig iron.		Old and scrap iron.		
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.	
9 months to June 30, 1843	315,157	\$511,282	125,081	\$327,550	77,461	\$48,251	8,157	\$2,743	\$889,826
June 30.....1844	757,824	1,065,582	230,451	583,065	298,880	200,522	42,663	43,896	1,872,565
1845	1,023,772	1,691,748	303,530	872,167	550,209	506,291	110,950	119,740	3,189,936
1846	482,170	1,127,418	420,569	1,165,429	483,756	489,673	47,247	66,534	2,838,954
1847	803,670	2,129,489	308,223	854,708	557,114	554,486	37,871	40,699	3,579,382
1848	1,631,786	3,679,598	403,127	975,214	1,032,641	815,415	182,600	140,037	5,610,204
1849	3,469,142	8,060,068	211,964	525,770	2,112,649	1,405,618	189,001	144,424	8,135,876
1850	4,959,022	7,397,166	294,132	744,735	1,497,487	950,660	202,090	101,981	9,254,642
1851	5,086,039	7,324,283	403,973	900,026	1,344,990	787,524	167,885	112,029	9,123,862

82

TREASURY DEPARTMENT, *Register's Office*, December 10, 1851.

N. SARGENT, *Register*.

*Statement exhibiting the quality and value of bar iron, manufactured by rolling and otherwise, pig iron and old and scrap, imported annually from 1843 to 1851, inclusive, and also the average cost per ton and the estimated amount of duties which accrued on each during the same period.*

### BAR IRON, MANUFACTURED BY ROLLING.

Periods.	Tons and cwt.	Value.	Average cost.	Rate of duty.	Duties.
During 9 months to June 30, 1843 .....	15,757 17	\$54,282	\$32 45	\$25 00	\$393,946 25
During year to June 30, 1844 .....	37,891 04	1,065,582	28 12	25 00	947,280 00
During year to June 30, 1845 .....	51,188 12	1,691,748	38 05	25 00	1,279,715 00
During year to June 30, 1846 .....	24,108 16	1,127,418	46 76	25 00	602,720 00
During 5 months to November 30, 1846 .....	8,088 08	434,316	53 63	25 00	202,460 00
During 7 months to June 30, 1847 .....	82,085 08	1,695,173	52 83	30 per cent.	508,551 90
During year to June 30, 1848 .....	81,589 06	3,679,598	45 10	do.	1,103,879 40
During year to June 30, 1849 .....	173,457 02	6,060,068	34 93	do.	1,818,020 40
During year to June 30, 1850 .....	247,951 02	7,397,166	29 83	do.	2,319,149 80
During year to June 30, 1851 .....	254,301 19	7,324,283	28 80	do.	2,197,284 90

## S No. 2—Continued.

## BAR IRON, MANUFACTURED OTHERWISE THAN BY ROLLING.

Periods.	Tons and cwt.	Value.	Average cost.	Rate of duty.	Duties.
During 9 months to June 30, 1843.....	6,254 01	\$327,650	\$52 37	\$17 00	\$106,318 85
During year to June 30, 1844.....	11,822 11	583,065	49 32	17 00	200,983 35
During year to June 30, 1845.....	18,176 10	872,167	47 99	17 00	209,000 60
During year to June 30, 1846.....	21,328 09	1,165,429	54 65	17 00	362,583 65
During 6 months to November 30, 1846.....	10,413 02	588,322	56 50	17 00	177,022 70
During 7 months to June 30, 1847.....	4,998 01	266,386	53 30	30 per cent.	70,916 80
During year to June 30, 1848.....	20,156 07	975,214	48 38	do.	292,664 20
During year to June 30, 1849.....	10,698 04	625,770	49 61	do.	157,731 00
During year to June 30, 1850.....	14,700 12	744,735	50 64	do.	228,420 60
During year to June 30, 1851.....	20,198 13	900,026	44 55	do.	270,007 80



## S No. 2—Continued.

## PIG IRON.

Periods.	Tons and cwt.	Value.	Average cost.	Rate of duty.	Duties.
During 9 months to June 30, 1843 .....	3,873 01	\$48,251	\$12 46	\$9 00	\$34,857 45
During year to June 30, 1844.....	14,994 00	200,522	13 42	9 00	134,496 00
During year to June 30, 1845.....	27,510 09	506,291	18 40	9 00	247,694 05
During year to June 30, 1846.....	24,187 16	489,573	20 24	9 00	217,690 20
During 5 months to November 30, 1846 .....	4,478 05	82,398	18 40	9 00	40,304 25
During 7 months to June 30, 1847.....	23,477 09	472,088	20 11	30 per cent.	141,626 40
During year to June 30, 1848.....	51,632 01	815,415	15 79	do.	244,624 50
During year to June 30, 1849.....	105,632 09	1,405,613	13 30	do.	421,683 90
During year to June 30, 1850.....	74,874 07	950,660	12 69	do.	285,198 00
During year to June 30, 1851.....	67,249 10	787,524	11 71	do.	236,257 20

## OLD AND SCRAP IRON.

Periods.	Tons and cwt.	Value.	Average cost.	Rate of duty.	Duties.
During 9 months to June 30, 1843.....	157 14	\$2,743 00	\$17 43	\$10 00	\$1,578 50
During year to June 30, 1844.....	2,133 03	43,396 00	20 34	10 00	21,331 50
During year to June 30, 1845.....	5,847 10	119,740 00	20 48	10 00	58,475 00
During year to June 30, 1846.....	2,360 07	56,534 00	23 95	10 00	23,603 50
During year to June 30, 1846.....	250 03	5,831 00	23 32	10 00	2,501 50
During 5 months to November 30, 1846.....	1,643 08	34,868 00	21 22	30 per cent.	10,460 40
During 7 months to June 30, 1847.....	6,630 00	110,037 00	21 12	do.	42,011 10
During year to June 30, 1848.....	9,450 01	144,424 00	15 28	do.	43,327 20
During year to June 30, 1849.....	10,104 10	161,981 00	16 03	do.	18,594 30
During year to June 30, 1850.....	8,394 05	112,029 00	13 35	do.	33,608 70
During year to June 30, 1851.....					

N. SARGENT, Register.

TREASURY DEPARTMENT, Register's Office, November 10, 1851.

## S No. 3.

*Statement exhibiting the quantity of bar, pig and old scrap iron, reduced to pounds, imported during the years 1840, 1842, 1844, 1846, 1848, 1849, 1850 and 1851, and the quantity per capita of such importations during these years respectively.*

Years ending--	Population.	IRON.	
		Bar, pig and old imported—pounds of.	Quantity per capita—pounds of.
September 30, 1840.....	17,069,453	165,323,448	9.68
September 30, 1842.....	18,155,561	241,711,213	13.31
June 30, 1844.....	19,241,670	161,440,768	8.40
June 30, 1846.....	20,327,780	178,776,943	8.79
June 30, 1848.....	21,413,890	397,897,093	18.58
June 30, 1849.....	21,956,945	714,327,913	32.53
June 30, 1850.....	23,246,301	778,705,872	33.50
June 30, 1851.....	24,250,000	784,323,344	32.34

N. SARGENT, *Register*.

TREASURY DEPARTMENT,  
*Register's Office, November 10, 1851.*



REPORT  
OF  
THE SECRETARY OF WAR,

WITH

*Statements showing the contracts made under authority of that Department,  
during the year 1851.*

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JANUARY 9, 1852.

Ordered to lie on the table, and be printed.

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WAR DEPARTMENT,  
*Washington, January 7, 1851.*

SIR: In compliance with the requirements of the acts of April 21, 1808, and March 3, 1809, I have the honor to transmit herewith, statements showing what contracts have been made under the authority of this Department during the year 1851.

Very respectfully, your obedient servant,

C. M. CONRAD,  
*Secretary of War.*

HON. WILLIAM R. KING,  
*President of the Senate.*

*Statement of contracts and purchases made and received at the Ordnance Office during the year 1851.*

Names of contractors.	Articles contracted for or purchased.	Price paid or to be paid.	Place of delivery.	Date.
Cyrus Alger & Co.....	2 6-pounder bronze guns..... 1 12-pounder bronze howitzer.....	40 cents a pound..... do do.....	Boston, Mass..... do.....	May 5, 1851. May 5, 1851.
James T. Ames.....	10 6-pounder bronze guns..... 3 12-pounder bronze howitzers.....	do do..... do do.....	Springfield, Mass... do.....	November 15, 1851. November 15, 1851.
J. R. Anderson.....	12,228 32-pounder shot.....	3 cents and 3¼ mills per pound.....	Fort Munroe, Va.... Middletown, Conn...	October 20, 1851. December 14, 1850.
Henry Aston.....	Sundry parts for repairs of pistols..... do do.....	\$190 10..... \$48 81.....	do..... New York.....	August 1, 1851. October 21, 1851.
J. T. Bell.....	1,000 cartridge-box belts and plates..... 1,000 waist belts and plates..... 1,000 bayonet scabbards..... 140 non-commissioned officers' belts and plates..... 160 rifle waist belts and plates.....	75 cents each..... 82 cents each..... 65 cents each..... 68 cents each..... 53 cents each.....	do..... do..... do..... do..... do.....	October 21, 1851. October 24, 1851. October 21, 1851. October 24, 1851. October 21, 1851.
J. Boyd & Sons.....	200 sabre belts..... 2,000 cartridge-box belts and plates..... 2,000 waist belts and plates..... 1,500 bayonet scabbards..... 280 non-commissioned officers' belts and plates..... 300 rifle waist belts and plates..... 450 sabre belts..... 125 pairs holsters..... 125 sabre belts.....	\$1 35 each..... 75 cents each..... 32 cents each..... 55 cents each..... 68 cents each..... 47 cents each..... \$1 35 each..... \$2 50 a pair..... \$1 33 each.....	do..... do..... do..... do..... do..... do..... do..... do..... do.....	October 21, 1851. October 24, 1851. October 24, 1851. October 24, 1851. October 24, 1851. October 21, 1851. October 24, 1851. November 6, 1851. November 6, 1851.
Samuel Colt.....	2,000 pistols and appendages..... 500 pistol screw drivers..... 250 bullet moulds..... 20 rings..... 160 powder flasks..... 160 screw drivers..... 160 bullet moulds.....	\$24 each..... 17 cents each..... 46½ cents each..... 1 cent each..... \$1 each..... 17 cents each..... 46½ cents each.....	Hartford, Conn..... do..... do..... do..... do..... do..... do.....	May 8, 1851. July 22, 1851. July 22, 1851. July 22, 1851. October 27, 1851. October 27, 1851. October 27, 1851.
Joseph Deal.....	For building two workshops and one engine house at Frankford arsenal.	To be paid for by measurement at specified prices.	Frankford, Pa.....	May 20, 1851.

Robert Dingee.....	200 cavalry sabre belts and knots.....	\$1 58 each.....	New York.....	March 20, 1851.
H. A. Dingee.....	250 cavalry sabre belts.....	\$1 33 each.....	do.....	March 21, 1851.
	1,500 cartridge-box belts and plates.....	75 cents each.....	do.....	October 24, 1851.
	1,500 waist belts.....	25 cents each.....	do.....	October 24, 1851.
	1,000 waist belt plates.....	7 cents each.....	do.....	October 24, 1851.
	1,500 bayonet scabbards.....	55 cents each.....	do.....	October 24, 1851.
	200 non-commissioned officers' belts and plates.....	68 cents each.....	do.....	October 24, 1851.
	200 rifle waist belts and plates.....	47 cents each.....	do.....	October 24, 1851.
	325 sabre belts.....	\$1 35 each.....	do.....	October 24, 1851.
	125 pairs holsters.....	\$2 50 per pair.....	do.....	November 6, 1851.
Ira N. Johnson.....	125 sabre belts.....	\$1 33 each.....	do.....	November 6, 1851.
G. Kemble.....	10,000 percussion pistols.....	\$6 75 each.....	Middletown, Conn..	March 28, 1851.
	4 mortar beds.....	\$704 46.....	New York.....	June 5, 1851.
Dennis Kennedy.....	1 testing machine.....	\$1,215 53.....	do.....	May 5, 1851.
	For building river-wall and embankment at Frankford arsenal.....	\$6,974 28.....	Frankford arsenal...	June 23, 1851.
Knap & Totten.....	2 10-inch columbiads.....	\$2,335 42.....	Pittsburg.....	May 23, 1851.
	2 8-inch columbiads.....	\$2,335 42.....	do.....	May 23, 1851.
J. C. Nixon.....	250 carbine swivels.....	83 cents each.....	New York.....	March 20, 1851.
Peck & Barnett.....	For building two barracks and one stable at St. Louis arsenal.....	\$12,348 13.....	St. Louis, Mo.....	July 16, 1851.
J. J. Pittman.....	500 rifle waist belts.....	44 cents each.....	New York.....	March 20, 1851.
	250 sword knots.....	25 cents each.....	do.....	March 20, 1851.
	1,500 cartridge-box belts and plates.....	75 cents each.....	do.....	October 24, 1851.
	1,500 waist belts.....	25 cents each.....	do.....	October 24, 1851.
	1,000 waist belt plates.....	7 cents each.....	do.....	October 24, 1851.
	1,500 bayonet scabbards.....	55 cents each.....	do.....	October 24, 1851.
	200 non-commissioned officers' belts and plates.....	68 cents each.....	do.....	October 24, 1851.
	200 rifle waist belts and plates.....	47 cents each.....	do.....	October 24, 1851.
	325 sabre belts.....	\$1 35 each.....	do.....	October 24, 1851.
	125 pairs holsters.....	\$2 50 per pair.....	do.....	November 6, 1851.
	125 sabre belts.....	\$1 33 each.....	do.....	November 6, 1851.
Francis A. Quinette.....	For building a magazine and several out-houses at Jefferson barracks, Mo.....	\$15,922 08.....	Near St. Louis, Mo..	May 30, 1851.
E. Remington & Sons.....	5,000 percussion rifles.....	\$11 each.....	Ilion, N. Y.....	November 21, 1851.
C. S. Storms.....	1,000 gun slugs.....	15½ cents each.....	New York.....	March 20, 1851.
	500 rifle cartridge boxes.....	\$1 05 each.....	do.....	March 20, 1851.
	1,000 bayonet scabbards (cadets).....	55½ cents each.....	do.....	September 1, 1851.
	24 sabre belts and knots.....	\$1 44½ each.....	do.....	September 17, 1851.
	1,000 cartridge-box belts and plates.....	75 cents each.....	do.....	October 24, 1851.

# STATEMENT—Continued.

[12]

Names of contractors.	Articles contracted for or purchased.	Price paid or to be paid.	Place of delivery.	Date.
C. S. Storms .....	1,000 waist belts and plates .....	32 cents each .....	New York .....	October 24, 1851.
	1,500 bayonet scabbards .....	55 cents each .....	do .....	October 24, 1851.
	140 non-commissioned officers' belts and plates .....	68 cents each .....	do .....	October 24, 1851.
	150 rifle waist belts and plates .....	47 cents each .....	do .....	October 24, 1851.
	200 sabre belts .....	\$1 35 each .....	do .....	October 24, 1851.
	1,320 horse-artillery sabre belts .....	\$1 13 each .....	do .....	November 18, 1851.
Louis Winckelmaier .....	For building a carriage-maker's shop at St. Louis arsenal .....	\$7,295 97 .....	St. Louis, Mo .....	March 20, 1851.

ORDNANCE OFFICE,  
January 2, 1852.

H. K. CRAIG,  
Colonel of Ordnance.



*Statement of contracts made during the year 1851, for works under the direction of the Bureau of Topographical Engineers.*

No.	Place and date.	Parties.	Sureties.	Article or thing contracted for.
1	Portsmouth, N. H., June 16, 1851.	Lory Odell, Collector, with George W. Pendexter.	.....	Carpenters' work.—For removing the entire wood-work of the interior of the light-house on the Whale's-back rock in Maine, and re-finishing the same again in a thorough and workmanlike manner, with the best of materials, for the sum of \$875.
2	Portsmouth, N. H., June 16, 1851.	Lory Odell, Collector, with Joseph W. Coburn.	.....	Masons' work.—For picking out and repointing the joints of the masonry on the outside of the base and tower of the light-house on the Whale's-back rock in Maine, with the best hydraulic mortar, and in the best manner, for the sum of \$285 49.
3	Washington, October 21, 1851.	Capt. Thomas J. Lee, with William Wurdemann.	.....	Base-measuring apparatus.—For furnishing the necessary materials and constructing for the United States an apparatus for measuring base lines, to be delivered within nine months from the date of this contract, for the sum of \$2,500.

BUREAU TOPOGRAPHICAL ENGINEERS, January 1, 1852.

J. J. ABERT, *Colonel Corps Topographical Engineers.*

ENGINEER DEPARTMENT,  
*Washington, December 31, 1851.*

SIR : I have the honor to transmit, herewith, a list of the contracts made by officers of this Department, during the year 1851, which have been received at the office.

I am very respectfully, sir, your obedient servant,

J. G. TOTTEN,

*Brevet Brigadier General and Colonel of Engineers.*

Hon. C. M. CONRAD,

*Secretary of War.*

*List of contracts received at and made under the Engineer Department during the year 1851.*

Names of contractors.	Date of contract.	When to be completed.	For what object, and on what terms.
James J. Given.....	December 19, 1850..	June 30, 1851.....	For the delivery at Fort Delaware, of 170,000 feet, board measure, 4-inch white pine plank, at \$13 per thousand; and if the delivery is completed by the 30th June, 1851, then \$14 to be paid.
Bigler, Wright & Co.....	December 11, 1850..	June 30, 1851.....	For the delivery at Fort Delaware, of 38,000 cubic feet of white pine hewn timber, at 10 cents per running foot; and if the delivery is completed before the 30th June, 1851, then 12 cents per running foot.
Tyler, Johnson, Dunnock & Weatherby...	January 6, 1851.....	June 30, 1851.....	For the delivery at Fort Delaware, of 50,000 feet, board measure, 4-inch white pine plank, at \$13 per thousand; and if the delivery is completed by 30th June, 1851, then \$14 per thousand to be paid.
A. H. Newbold.....	April 28, 1851.....	August 16, 1851...	For constructing fifteen iron stairs for soldiers' barracks at Fort Wayne, Michigan, at three cents per pound for all cast iron, and ten cents per pound for all wrought iron used in the construction of said stairs.
John A. Kelly.....	July 19, 1851.....	August 20, 1851...	For repairing cisterns at Castle Pinckney, Charleston harbor, for the sum of \$560.
Edward M. Burch, M. D.....	July 26, 1851.....	.....	For rendering services as physician and surgeon to all persons in the employ of the engineer department, on works in Charleston harbor, S. C., at \$40 per month.

ENGINEER DEPARTMENT, *Washington, December 31, 1851.*

JOS. G. TOTTEN, *Brevet Brigadier General and Chief Engineer.*

*List of Contracts on account of the Medical and Hospital Department of the Army for the year 1851.*

[121]

Date of contract.	Names of the contractors.	The article or thing contracted for.	The place where delivered or performed.	Amount of compensation.	Remarks.
1841					
April 1	Horatio Adams ...	Medical attend'ce and medicinos	Watertown arsenal, Mass.....	\$50 per month....	
1843.					
March 11	Cyrus Briggs.....	.....do.....do.....	Kennebeck arsenal, Me.....	20....do.....	
April 1	Augustus Viele....	.....do.....do.....	Watervleit arsenal, N. Y.....	30....do.....	
1845.					
Nov. 1	P. P. Burton .....	.....do.....do.....	Little Rock arsenal, Ark.....	25....do.....	
1846.					
Jan. 1	J. L. Dawson.....	.....do.....do.....	Charleston arsenal, S. C.....	25....do.....	
Feb. 5	Wm. H. Russell....	.....do.....do.....	Mt. Vernon arsenal, Ala.....	45....do.....	
1847.					
Jan. 5	Enoch Agnew.....	.....do.....do.....	2d batallion Palmetto regiment .....	50....do.....	Discharged Jan. 20, 1847.
20	F. W. Mather.....	.....do.....do.....	Pennsylvania regiment.....	100....do.....	.....do.....Mar. 27, 1847.
Feb. 7	R. McMillan.....	.....do.....do.....	Tampico, Mexico .....	150....do.....	.....do.....May 27, 1847.
Nov. 17	Laurence Byrne....	.....do.....do.....	Pikesville arsenal, Md.....	20....do.....	
May 10	Jno. G. McKibben .....	.....do.....do.....	1st regiment New York volunteers..	2 50 per day....	.....do.....July 10, 1847.
1848.					
Dec. 14	T. G. Catlin.....	.....do.....do.....	Fort Niagara, N. Y.....	30 per month....	
1849.					
Jan. 24	N. W. Oliver.....	.....do.....do.....	Fort Constitution, N. H.....	30....do.....	
June 2	W. Manning.....	.....do.....do.....	Fort Brady, Mich.....	30....do.....	.....do.....July 1, 1851.
July 1	R. W. Gulmette .....	.....do.....do.....	San Antonio, Texas .....	82....do.....	.....do.....Mar. 16, 1851.
6	L. B. Mayberry .....	.....do.....do.....	Fort Sullivan, Me.....	30....do.....	
15	A. A. Marshal.....	.....do.....do.....	Escort to J. Collier to California .....	30....do.....	.....do.....Nov. 3, 1849.
23	Edward Worrell....	.....do.....do.....	Fort Delaware, Del.....	10....do.....	
Aug. 15	John Carter.....	.....do.....do.....	Augusta arsenal, Ga.....	20....do.....	
Sept. 11	David Hunter.....	.....do.....do.....	Madison barracks, N. Y.....	30....do.....	.....do.....Feb. 10, 1851.
Oct. 18	J. W. Robertson....	.....do.....do.....	Austin, Texas.....	35....do.....	.....do.....Mar. 22, 1851.
1850.					
July 18	W. Reidell.....	.....do.....do.....	Fredericksburg, Texas.....	60....do.....	.....do.....Dec. 18, 1850.
Aug. 1	W. Spottawood .....	.....do.....do.....	Pensacola, Fla.....	65....do.....	.....do.....Dec. 8, 1851.
18	H. L. Briggs.....	.....do.....do.....	Fort Croghan, Texas .....	81 88.do.....	.....do.....Mar. 26, 1851.

Aug.	19	Edward Kane.....do.....	Plattsburg barracks.....	30....do.....do.....	Oct. 19, 1851.
Sept.	5	J. Overstreet.....do.....	Rancho del China, Cal.....	200....do.....do.....	Feb. 5, 1851.
	1	C. C. Parry.....do.....	San Louis Rey, Cal.....	200....do.....do.....	Feb. 28, 1851.
	14	J. J. Milhan.....do.....	New York city.....	60....do.....do.....	April 30, 1851.
Oct.	1	J. H. de Waldegg.....do.....	Texas mounted volunteers.....	82....do.....do.....	
	15	W. G. Hatch.....do.....	Fort Clark, Iowa.....	82....do.....do.....	April 7, 1851.
	23	G. W. Semple.....do.....	Fort Monroe, Va.....	40....do.....do.....	Jan. 4, 1851.
	25	J. L. McKenney.....do.....	Camp San Antonio river.....	81 50.do.....do.....	Mar. 5, 1851.
May	4	Nick Spring.....do.....	Fort Smith, Ark.....	40....do.....do.....	July 11, 1850.
Nov.	14	A. Brainard.....do.....	Detroit arsenal, Mich.....	20....do.....do.....	
	17	W. T. Mills.....do.....	Texas mounted volunteers.....	83....do.....do.....	
	24	A. B. Campbell.....do.....	Fort Millin, Pa.....	40....do.....do.....	
Dec.	3	J. K. Wetherly.....do.....	Battalion of artillery.....	100....do.....do.....	Jan. 24, 1851.
	9	P. H. Hard.....do.....	Fort Ontario, N. Y.....	30....do.....do.....	May 26, 1851.
	18	W. Keidell.....do.....	Fort Martin Scott, Texas.....	80....do.....do.....	Jun. 18, 1851.
1851.					
Jan.	9	Nick Spring.....do.....	Fort Smith, Ark.....	20....do.....do.....	Mar. 15, 1851.
	18	T. A. Pinckney.....do.....	Key West barracks, Fla.....	100....do.....do.....	Feb. 18, 1851.
Feb.	5	Geo. A. Sturgis.....do.....	Rancho del China, Cal.....	200....do.....do.....	May 21, 1851.
	8	Charles Page.....do.....	Key West barracks, Fla.....	40....do.....do.....	Oct. 1, 1851.
	10	D. N. Mahon.....do.....	Carlisle barracks, Pa.....	40....do.....do.....	
	12	F. M. Robertson.....do.....	Castle Pinckney, S. C.....	50....do.....do.....	Mar. 10, 1851.
	21	R. B. Simpson.....do.....	Allegheny arsenal, Pa.....	30....do.....do.....	May 8, 1851.
March	7	D. P. Gray.....do.....	Camp San Antonio, Texas.....	81 50.do.....do.....	
	14	S. W. Crawford.....do.....	Fort Croghan, Texas.....	81 83.do.....do.....	Mar. 31, 1851.
	15	Nick Spring.....do.....	Fort Smith, Ark.....	30....do.....do.....	
	20	R. W. Guelmette.....do.....	Camp Brooke, Texas.....	82....do.....do.....	
April	1	Julian Rogers.....do.....	Fort Clark, Iowa.....	82....do.....do.....	July 12, 1851.
	1	Thos. H. Webb.....do.....	Boundary Commission.....	82....do.....do.....	
	26	John F. Brown.....do.....	5th infantry in the field.....	100....do.....do.....	
May	8	R. B. Simpson.....do.....	Allegheny arsenal, Pa.....	20....do.....do.....	
	12	T. C. Smith.....do.....	Fort Ingo, Texas.....	50....do.....do.....	Aug. 6, 1851.
	19	D. H. Gibson.....do.....	Fort Towson, C. N.....	25....do.....do.....	
	21	E. Pollard.....do.....	5th infantry to New Orleans.....	100....do.....do.....	June 1851.
June	12	W. G. Curtis.....do.....do.....	Fort Johnston, N. C.....	40....do.....do.....	Aug. 10, 1851.
	18	James H. Wilson.....do.....	Pittsburg, Pa.....	20....do.....do.....	
July	1	John P. DuVal.....do.....	Fort Mason, Texas.....	81 83.do.....do.....	
	1	Linus Mott.....do.....do.....	Fort Brady, Mich.....	30....do.....do.....	Aug. 2, 1851.
	15	Alfred Benson.....do.....	Columbia barracks, Oregon.....	20....do.....do.....	
Aug.	3	G. C. M. Roberts.....do.....	Fort McHenry, Md.....	40....do.....do.....	Sept. 22, 1851.

# LIST OF CONTRACTS.—Continued.

Date of contract.	Names of the contractors.	The article or thing contracted for.	The place where delivered or performed.	Amount of compensation.	Remarks.
1851.					
Aug. 18	Thos. Foster.....	Medical attendance.....	Fort Snelling to Pembino, Min.....	\$30 per month....	
Oct. 1	Charles Page.....	do.....	Key West barracks, Fla.....	70....do.....	
2	Arch'd Taylor.....	do.....	Recruits for 5th infantry.....	Pay of Ass't Sur.	
23	Wm. T. Bell.....	do.....	Fort Howard, Wis.....	30 per month....	
Nov. 11	Chas. Sutherland..	do.....	Fort Monroe, Va.....	40....do.....	
1846.					
July 13	James L. Ord.....	do.....	3d regiment artillery, Cal.....	100....do.....	Discharged Sept. 8, 1848.
1851.					
Nov. 10	John H. Bayne.....	do.....	Fort Washington, Md.....	30....do.....	do.....Dec. 9, 1851.
17	S. H. Towksbury..	do.....	Fort Preble, Me.....	30....do.....	
26	Isaac G. Porter....	do.....	Fort Trumbull, Ct.....	30....do.....	

TH. LAWSON, *Surgeon General.*

SURGEON GENERAL'S OFFICE, *January 2, 1852.*

*Statement of contracts made in the Subsistence Department during the year 1851.*

Posts.	Contractors.	By whom made.	For—	Date.	Commencing.	Terminating.	Amount.
New Orleans barracks, La.	Hyatt & Stump.	Com. Gen. of Subsistence.	Subsistence.....	Oct. 17, 1851	June 1, 1852	March 1, 1853	\$2,467 16
Baton Rouge barracks, La.	do	do	do	do	do	do	2,467 16
Key West, Fla.	do	do	do	do	do	do	2,618 07
Fort McHenry, Md.	James C. Adams.	do	do	Oct. 24, 1851	do	do	2,173 44
Fort Monroe, Va.	do	do	do	do	do	do	4,980 00
Fort Washington, Md.	do	do	do	do	do	do	3,023 50
Castle Pinckney, S. C.	do	do	do	do	do	do	2,376 18
Fort Moultrie, S. C.	do	do	do	do	do	do	6,841 00
Fort Hamilton, N. Y.	do	do	do	do	do	do	2,215 94
Fort Mifflin, Pa.	do	do	do	do	do	do	2,215 94
Fort Trumbull, Ct.	D. J. Odell.	do	do	do	do	do	2,164 78
Fort Preble, Me.	do	do	do	do	do	do	2,122 19
Fort Constitution, N. H.	do	do	do	do	do	do	2,188 84
Fort Sullivan, Me.	do	do	do	do	do	do	2,093 66
Fort Independence, Mass.	do	do	do	do	do	do	4,173 50
Fort Adams, R. I.	do	do	do	do	do	do	6,555 87
Fort Gibson, Ark.	J. P. Brawley.	do	do	Nov. 3, 1851	In all May, 1852	In all May, 1852	6,707 46
Fort Towson, C. N.	do	do	do	do	In all April, 1852	In all April, 1852	2,648 32
Fort Smith, Ark.	do	do	do	do	In all May, 1852	In all May, 1852	1,007 06
Fort Leavenworth, Mo.	James S. Henderson	do	do	Nov. 1, 1851	June 1, 1852	June 1, 1852	7,932 45
Fort Johnston, N. C.	George Schabel.	do	do	Oct. 22, 1851	do	March 1, 1853	4,600 50
Albany, N. Y.	John Martin.	Capt. J. Hayden.	Rations to recruits	Jan. 1, 1851	Jan. 1, 1851	Jan. 1, 1852	
Whitehall, N. Y.	W. H. Hagadorn	do	do	Feb. 1, 1851	Feb. 1, 1851	Aug. 1, 1851	
New York city.	John Thompson.	Bt. Major A. P. Howe.	do	March 1, 1851	March 1, 1851	Dec. 31, 1851	
Champlain arsenal, Vt.	P. W. Collins & Co.	W. A. Newman.	Rat'ns to ord. men	March 24, 1851	April 1, 1851	March 31, 1852	
Geneva, N. Y.	J. G. Tompkins.	Bt. Capt. J. P. Hatch	Rations to recruits	March 19, 1851	March 19, 1851	Not stated.	
New Bedford, Mass.	A. Brown.	Bt. Capt. C. G. Merchant.	do	April 1, 1851	April 1, 1851	April 30, 1851	
Pottsville, Pa.	D. Hill.	Capt. G. C. Westcott.	do	do	do	June 30, 1851	
Fitchburg, Mass.	W. F. Day.	Bt. Capt. C. G. Merchant.	do	May 1, 1851	May 1, 1851	Optional.	
Buffalo, N. Y.	S. D. Flagg.	Bt. Lt. Col. J. R. Smith.	do	July 1, 1851	July 1, 1851	June 30, 1852	
Albany, N. Y.	G. H. Newcomb & Co.	Capt. J. Hayden.	do	July 14, 1851	July 8, 1851	July 13, 1852	
Nashville, Tenn.	F. W. Collet.	Bt. Capt. T. Claiborne.	do	July 31, 1851	July 31, 1851	July 31, 1852	

## STATEMENT—Continued.

Posts.	Contractors.	By whom made.	For—	Date.	Commencing.	Terminating.	Amount.
Whitehall, N. Y.....	W. H. Hagadorn...	Bt. Lt. Col. W. H. T. Walker	Rations to recruits	Aug. 1, 1851	July 25, 1851	Jan. 25, 1852	
Dayton, Ohio.....	James Murray	Lt. G. W. Howland	do	do	Aug. 1, 1851	Sept. 30, 1851	
Chicago, Ill.....	Adam Eaton	Lt. Del. Floyd—Jones	do	April 1, 1851	April 1, 1851	Optional.	
St. Louis, Mo.....	P. Heffernan	Bt. Capt. Geo. Sykes	do	July 1, 1851	July 1, 1851	July 31, 1851	
St. Louis, Mo.....	John Regan	Capt. A. J. Lindsay	do	July 26, 1851	Aug. 6, 1851	Optional.	
Louisville, Ky.....	George Schalk	Lt. W. B. Lane	do	Aug. 9, 1851	Aug. 9, 1851	Not stated.	
Cleveland, Ohio.....	C. N. Elston	Capt. N. Newton	do	Aug. 11, 1851	July 17, 1851	Sept. 30, 1851	
Harrisburg, Pa.....	A. Fishburn	Capt. R. P. MacLay	do	Oct. 17, 1851	Oct. 17, 1851	Optional.	
Valparaiso, Chili.....	J. Waddington	Maj. R. B. Lee	Flour, beans, &c.	Feb. 20, 1851			
Santa Fe, N. M.....	Ellison & Davy	Lt. J. C. McFerran	Beans, &c.	April 5, 1851			
Fort Washington, Md.....	Emerson & Baggett	Lt. O. B. Wilcox	Fresh beef	Jan. 1, 1851	Jan. 1, 1851	Dec. 31, 1851	
Fort Sullivan, Mo.....	D. J. Odell	Lt. J. K. Duncan	do	do	do	June 30, 1851	
Fort Millin, Pa.....	J. Cassidy	Capt. J. Roberts	do	do	do	Dec. 31, 1851	
Washington arsenal.....	S. J. Little	Lt. T. L. Ringgold	do	Feb. 1, 1851	Feb. 1, 1851	do	
Fort Duncan, Texas.....	W. L. Cazneau	Lt. J. B. Plummer	do	Feb. 19, 1851	do	Feb. 1, 1852	
St. Louis arsenal, Mo.....	W. Hollmaster	Lt. J. McNutt	do	March 1, 1851	March 1, 1851	Feb. 28, 1852	
Fort Independence.....	Davis & Severance	Lt. J. W. Patton	do	Feb. 24, 1851	Feb. 24, 1851	Aug. 24, 1851	
Fort Wood, N. Y.....	B. W. Valentine	Bt. Capt. E. Johnson	do	March 1, 1851	March 1, 1851	Aug. 31, 1852	
Fort Graham, Texas.....	A. F. Leonard	Lt. C. D. Jordan	do	March 20, 1851	April 1, 1851	Sept. 30, 1851	
Fort McIntosh, Texas.....	B. Benavides	Lt. P. T. Turnley	do	March 22, 1851	do	do	
Fort Smith, Ark.....	A. Neise	Lt. A. G. Bankhead	do	April 1, 1851	April 2, 1851	April 2, 1852	
Fort Gibson, Ark.....	W. D. Shaw	Lt. S. Archer	do	April 22, 1851	May 1, 1851	April 30, 1852	
Fort Kearney, O. R.....	C. A. Perry	Bt. Maj. J. A. Haskin	do	April 29, 1851	July 15, 1851	July 15, 1851	
Post on the Arkansas.....	do	do	do	do	May 30, 1851	May 30, 1851	
Key West, Fla.....	G. Alderdade	Capt. J. A. Vodges	do	May 1, 1851	May 1, 1851	Oct. 30, 1851	
Baton Rouge barracks.....	M. Langé	Lt. D. Nickel	do	Jan. 1, 1851	Feb. 1, 1851	Jan. 31, 1852	
Fort Trumbull.....	R. F. Lyons & Co.	Lt. R. H. Smith	do	Jan. 17, 1851	Jan. 14, 1851	Jan. 14, 1852	
En route to El Paso.....	Lewis & Groesbeck	Bt. Maj. J. Longstreet	do	April 19, 1851	April 19, 1851	do	
Fort Scott, Mo.....	J. Preston	Bt. Maj. A. Cady	do	May 1, 1851	May 1, 1851	April 30, 1852	
Fort Worth.....	S. Gilmore	Lt. S. H. Starr	do	May 21, 1851	June 15, 1851	June 15, 1852	
Santa Fe, N. M.....	A. Duvall & Co.	Lt. J. C. McFerran	do	June 10, 1851	July 1, 1851	June 30, 1852	
Carlisle barracks.....	John Noble	Bt. Capt. J. Love	do	June 14, 1851	do	do	



New York city.....	A. Ponton.....	Capt. G. C. Westcott.....	do.....	June 21, 1851.....	do.....	do.....
Fort Brown, Tenn.....	N. Chano.....	Lt. John Gibbon.....	do.....	June 29, 1851.....	do.....	June 30, 1851
Fort Brady.....	G. C. Godfrey.....	Lt. R. Macfeely.....	do.....	June 20, 1851.....	June 25, 1851	June 25, 1852
Pottsville, Pa.....	J. Spohn.....	Capt. S. G. Simmons.....	do.....	July 28, 1851.....	July 23, 1851	July 23, 1852
Fort Sullivan.....	J. Norton.....	Lt. J. K. Duncan.....	do.....	Aug. 1, 1851.....	Aug. 1, 1851	Jan. 31, 1852
Boston, Mass.....	Burgess & Talbott.....	Bt. Maj. E. Johnson.....	do.....	Aug. 5, 1851.....	do.....	Not stated.
Rochester, N. Y.....	J. McIntosh.....	Capt. J. Hayden.....	do.....	Aug. 11, 1851.....	Aug. 11, 1851	Aug. 10, 1852
Baltimore, Md.....	Henry Wade.....	Bt. Lt. Col. R. C. Buchanan.....	do.....	Sept. 1, 1851.....	Sept. 1, 1851	Aug. 31, 1852
Fort Mackinac.....	W. Saltonstall.....	Lt. D. A. Russell.....	do.....	Sept. 13, 1851.....	Oct. 1, 1851	Sept. 30, 1852
Fort Snelling.....	R. Steele.....	Bt. Capt. S. B. Buckner.....	do.....	Sept. 8, 1851.....	Oct. 31, 1851	Oct. 31, 1851
Fort Dodge.....	J. Saylor.....	Bt. Maj. S. Woods.....	do.....	Sept. 10, 1851.....	Oct. 16, 1851	May 15, 1852
Fort Merrill, Texas.....	John Ross.....	Lt. S. D. Carpenter.....	do.....	Sept. 22, 1851.....	Oct. 1, 1851	Sept. 30, 1852
Fort McIntosh.....	G. W. Pierce.....	Lt. P. F. Turley.....	do.....	Sept. 26, 1851.....	do.....	March 31, 1852
Newport barracks.....	M. Ryan.....	Bt. Maj. E. Vandorn.....	do.....	Sept. 30, 1851.....	do.....	Sept. 30, 1852
Fort Howard.....	W. Wilson.....	Lt. B. D. Forsythe.....	do.....	Oct. 1, 1851.....	do.....	do.....
Fort Constitution.....	J. B. Carrier.....	Bt. Capt. H. B. Field.....	do.....	Oct. 9, 1851.....	Oct. 10, 1851	Oct. 9, 1852
Fort Adams.....	T. B. Sherman.....	Bt. Maj. J. F. Reynolds.....	do.....	do.....	Oct. 9, 1851	Oct. 8, 1852
Fort Ontario.....	D. C. Buell.....	Lt. E. Underwood.....	do.....	Oct. 17, 1851.....	Dec. 1, 1851	Nov. 30, 1852
Fort Preble.....	Jones & Phinney.....	Lt. J. Kellogg.....	do.....	Dec. 17, 1851.....	Oct. 17, 1851	Oct. 16, 1852
Madison barracks.....	H. McKee.....	Bt. Capt. W. S. Grant.....	do.....	Dec. 31, 1851.....	Nov. 1, 1851	Oct. 31, 1852
Charleston harbor.....	Brown & Johnson.....	Lt. J. H. Carlisle.....	do.....	Nov. 10, 1851.....	Nov. 11, 1851	do.....
Fort Leavenworth.....	J. W. Drew.....	Lt. S. D. Sturgis.....	do.....	Nov. 15, 1851.....	do.....	Aug. 31, 1852

GEO. GIBSON, C. G. S.

OFFICE OF COMMISSARY GENERAL OF SUBSISTENCE,  
Washington, January 6, 1852.

QUARTERMASTER GENERAL'S OFFICE,  
*Washington city, January 7, 1852.*

SIR: I have the honor to enclose herewith, the annual statement of contracts of the Quartermaster's Department, for the year 1851, in which is included such contracts of the year 1850, as were received at this office after the statement for that year was sent in.

Very respectfully, your obedient servant,

TH. S. JESUP,  
*Quartermaster General.*

Hon. C. M. CONRAD,  
*Secretary of War, Washington city.*

*Statement of contracts for transportation, fuel, building materials, repairs, &c., of the Quartermaster's department, being in continuation of the statement made for the year 1850.*

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
1	Fort Howard, Wis., October 12, 1850.	Lieut. J. B. Collins, a. a. q. m., with Peter White.	Transportation of troops: To transport, from Fort Howard, Wis., to the pay-ground of the Menomonic Indians and back again to Fort Howard, 2 officers and 32 privates, &c., with their baggage, for the sum of \$140.	John Whitehill, Oliver Quinette.
2	St. Louis, Mo., November 12, 1850.	Lieut. Col. T. Swords, q. m., with F. A. Quinette.	Building a gun-shed: To build and finish, at Jefferson barracks, Mo., a gun-shed, according to schedule given, for the sum of \$1,312. Bond, \$2,000.	
3	New York, December 14, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with Wm. A. Parsons.	Charter: For the charter of the ship Kate Hunter, to transport, from Bedlow's Island, New York harbor, to Brazos San Jago and Corpus Christi, 2 officers and 206 men, with their baggage and such other public property as may be sent on board, for the sum of \$2,190. Demurrage, \$80 per day.	
4	New York, December 23, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with John A. McGaw.	Charter: For the charter of the ship Helen McGaw, from New York and Old Point Comfort, Va., to San Francisco, Benicia, or some other port in San Francisco Bay, to transport, from New York, stores, and from Old Point Comfort 1 officer and 27 men, with such other stores as may be there put on board, for the sum of \$24,000. Demurrage, \$80 per day.	
5	St. Louis, Mo., January 17, 1851.	Lieut. Col. T. Swords, q. m., with John Rogers, jr.	Coal: To deliver at Jefferson barracks, Mo., during the month of February, 1851, 3,000 bushels of good stone coal, for the sum of 13 cents per bushel. Bond, \$3,000.	Ashton Johnson, J. B. S. Lemoine.
6	Pensacola, Fla., December 1, 1850.	Capt. H. D. Grafton, a. a. q. m., with Jesse Pritchett.	Wood: To deliver in Pensacola harbor, during the year commencing December 1, 1850, good oak wood, in quantities required, for the sum of \$3 80 per cord, delivered at Fort Barrancas; \$1 10 per cord, at Fort Pickens; and \$6 25 per cord, at Fort McRee. Bond, \$2,000.	H. F. Ingraham, C. P. Knapp.
7	Fort Howard, Wis., July 24, 1850.	Lieut. G. B. Collins, a. a. q. m., with John P. Arndt.	Wood: To deliver at Fort Howard, Wis., at such times as may be required, 400 cords of good wood, for the sum of \$1 87½ per cord. Bond, \$800.	H. Eugene Eastman, J. W. Arndt.
8	Newport barracks, Ky., December 7, 1850.	Major E. Van Dorn, a. a. q. m., with F. F. Logan.	Transportation of troops: To transport, from Newport barracks, Ky., to New Orleans, La., on the steamer South America, 1 officer and 100 recruits, 2 laundresses, and 1 servant, for the sum of \$10 for the officer, and \$2 50 each for the others.	

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
9	Fort Moultrie, S. C., January 1, 1861.	Lieut. H. Benson, a. a. q. m., with Daniel Sinclair.	Wood: To deliver at Fort Moultrie, S. C., as much wood of good quality as may be required during the year 1861, for the sum of \$4 50 per cord. Bond, \$1,000.	George Kinlock.
10	Santa Fe, N. M., Aug- ust 21, 1860.	Capt. L. C. Easton, a. q. m., with Tully & Ferguson.	Transportation of stores: To transport, from Santa Fé to Doñana, N. M., in wagons, 16 boxes and 9 tierces of clothing and 2 iron pots—total weight 4,952 pounds—to be delivered before September 15, 1860, for the sum of 6 cents per pound.	
11	Newport barracks, Ky., July 15, 1860.	Lieut. J. H. Potter, a. a. q. m., with Rogers & Sher- lock.	Transportation of troops: To transport, from Newport barracks, Ky., to Jefferson barracks, Mo., on the steamer Fashion, 3 officers and 173 recruits, &c., with their baggage, for the sum of \$8 for each officer, and \$4 each for the others.	
12	Newport barracks, Ky., August 16, 1860.	Lieut. J. H. Potter, a. a. q. m., with Hugh Campbell.	Transportation of troops: To transport, from Newport barracks, Ky., to Jefferson barracks, Mo., on the steamer Hindo, 3 officers and 70 recruits, laundresses, &c., with their baggage, for the sum of \$8 for each officer, and \$2 75 each for the others.	
13	St. Louis, Mo., August 18, 1860.	Capt. N. J. T. Dana, a. q. m., with J. La Barge, jr.	Transportation of troops: To transport, from St. Louis to Fort Leavenworth, on the steamer St. Ange, 7 officers and 250 men, with their baggage, for the sum of \$8 for each officer, \$4 for each man, and \$6 for each horse; extra freight, 25 cents per 100 lbs.	
14	St. Louis, Mo., August 13, 1860.	Capt. N. J. T. Dana, a. q. m., with W. C. Jewett.	Transportation of troops: To transport, from Jefferson barracks, Mo., to Fort Leavenworth, on the steamer Kansas, 7 officers and 250 men, with their baggage, for the sum of \$8 for each officer, \$4 for each man, and \$6 for each horse; extra freight, 25 cents per 100 pounds.	
15	New York, February 1, 1861.	Brig. Gen. H. Whiting, a. q. m. g., with Gorham Bas- sett & Co.	Charter: For the charter of the barque Kepler, from the city of New York to Indianola, Texas, to transport two officers and 160 men and laundresses, for the sum of \$2,470. Demurrage, \$65 per day.	
16	New York, January 18, 1861.	Brig. Gen. H. Whiting, a. q. m. g., with F. & D. Fowler.	Charter: For the charter of the ship Stephen Surman, to transport, from New York city to San Diego and Benicia, California, subsistence stores: to San Diego, 1,288 barrels, 110 boxes, and 210 kegs; to Benicia, 2,877 barrels, 220 boxes, and 320 kegs, more or less, for the sum of \$17,400. Demurrage, \$60 per day.	

17	New York, January 18, 1851.	Brig. Gen. H. Whiting, a. q. m. g., with Francis Burritt.	Charter: For the charter of the ship Elizabeth Ellen, from New York city to Fort Vancouver, Oregon, to transport 5,122 barrels, 365 boxes, and 400 kegs, (subsistence stores,) with other military supplies, for the sum of \$22,990. Demurrage, \$75 per day.
18	St. Louis, Mo., August 5, 1850.	Capt. N. J. T. Dana, a. q. m., with Henry J. Moore.	Transportation of troops, &c.: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer Pocahontas, a detachment of United States troops, consisting of one cabin and 4 deck passengers, also 50 horses, for the sum of \$8 for the cabin and \$4 for each deck passenger, and \$6 for each horse.
19	St. Louis, Mo., August 12, 1850.	Capt. N. J. T. Dana, a. q. m., with Thomas Baker.	Transportation of troops, &c.: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer Sacramento, 5 men and 75 horses, for the sum of \$4 for each man and \$6 for each horse.
20	St. Louis, Mo., August 22, 1850.	Capt. N. J. T. Dana, a. q. m., with C. D. Blossom.	Transportation of troops, &c.: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer El Paso, 5 men, 40 horses, and 20 mules, for the sum of \$4 for each man, \$7 for each horse, and \$6 for each mule.
21	St. Louis, Mo., August 22, 1850.	Capt. N. J. T. Dana, a. q. m., with William Edds.	Transportation of troops, &c.: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer Robert Campbell, 5 men, 40 horses, and 20 mules, for the sum of \$4 for each man, \$7 for each horse, and \$6 for each mule.
22	St. Louis, Mo., August 31, 1850.	Capt. N. J. T. Dana, a. q. m., with D. S. Raymond.	Transportation of troops, &c.: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer Saranac, 5 men and 40 horses, for the sum of \$4 for each man, and \$6 for each horse.
23	St. Louis, Mo., August 17, 1850.	Capt. N. J. T. Dana, a. q. m., with E. Saltmarch.	Transportation of troops: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer Saranac, 2 men and 2 laundresses, for the sum of \$8 each.
24	St. Louis, Mo., August 31, 1850.	Capt. N. J. T. Dana, a. q. m., with E. Saltmarch.	Transportation of troops, &c.: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer Saranac, 3 men and 19 mules, for the sum of \$4 for each man, and \$7 for each mule.
25	St. Louis, Mo., September 4, 1850.	Capt. N. J. T. Dana, a. q. m., with C. D. Blossom.	Transportation of troops, &c.: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer El Paso, 8 men and 50 horses, for the sum of \$4 for each man, and \$7 for each horse.
26	St. Louis, Mo., September 17, 1850.	Capt. N. J. T. Dana, a. q. m., with A. C. Montfort.	Transportation of troops: To transport, from St. Louis, Mo., to Fort Snelling, M. T., on the steamer Dr. Franklin, No. 2, 1 officer and 25 men, for the sum of \$12 for the officer, and \$5 for each man.
27	Fort Gates, Texas, November 4, 1850.	Lieut. H. Haldeman, a. a. q. m., with A. J. Mackaye.	Corn: To deliver at Fort Gates, Texas, during the year ending December 31, 1851, good quality corn, in such quantities as shall be required, for the sum of \$1 73 per bushel. Bond, \$5,000.

George W. Glascock  
and Thomas J.  
Allen.

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
28	Baton Rouge, La., January 11, 1851.	Lieut. Col. L. B. Webster, a. a. q. m., with Jacob Zug.	Wood: To deliver at Baton Rouge, La., during the year 1851, such quantity of good, sound wood as may be required, for the sum of \$2 95 per cord.	
29	St. Louis, Mo., July 22, 1850.	Capt. N. J. T. Dana, a. q. m., with P. Yore.	Transportation of troops: To transport, from Jefferson barracks, Mo., to Fort Leavenworth, on the steamer St. Paul, 4 officers and 200 men, with their baggage, for the sum of \$8 for each officer, and \$4 for each man.	
30	St. Louis, Mo., July 23, 1850.	Capt. N. J. T. Dana, a. q. m., with J. Cheever.	Transportation of troops: To transport, from Jefferson barracks, Mo., to Fort Leavenworth, on the steamer Anna, 4 officers and 200 enlisted men, for the sum of \$8 for each officer and \$4 for each man.	
31	Vancouver, Oregon, May 15, 1850.	Capt. R. Ingalls, a. q. m., with Samuel Buckman.	Charter: For the charter of the bark Melton, from Vancouver to Astoria, Oregon, to transport supplies for 90 persons, 6 months' quartermaster's stores, 20 arsenals with 200 bushels of forage, officers and soldiers' baggage, and other public property, for the sum of \$1,500. Demurrage, \$62 50 per day.	
32	Fort Snelling, M. T., May 12, 1850.	Bt. Capt. R. W. Kirkham, a. q. m., with John Atchison.	Transportation of troops: To transport, from Fort Snelling, M. T., to Muscatin, Iowa, on the steamer Highland Mary, No. 2, 2 officers and 113 men, &c., also 45 horses, 23 mules, 6 wagons, and quartermaster and subsistence stores over and above the troops' baggage, for the sum of \$8 for each officer, \$4 50 for each man, and \$6 for each horse and mule, and \$8 for each wagon. Extra freight, 50 cents per 100 pounds.	
33	Fort Mackinac, Mich., January 22, 1851.	Lieut. H. Deyer, a. a. q. m., with Tully O'Malley.	Wood: To deliver at Fort Mackinac, Mich., during the year commencing May 1, 1851, all the wood required, not exceeding 330 cords, for the sum of \$3 44 per cord. Bond, \$2,000.	Michael Donsman and Augustus Todd.
34	Fort Brady, Mich., January 4, 1851.	Lieut. E. Russell, a. a. q. m., with E. J. Hulbert.	Wood: To deliver at Fort Brady, Mich., by July 1, 1851, 150 cords of good quality wood, for the sum of \$2 70 per cord. Bond, \$1,000.	Lewis M. Dickens and William Rolean.
35	Fort Smith, Ark., Au- gust 1, 1850.	Capt. A. Montgomery, a. q. m., with J. L. C. Allison.	Hay: To deliver at Fort Smith, Ark., by 22d August next, 50 tons of good, merchantable hay, for the sum of \$5 47 per ton.	
36	Philadelphia, Pa., Oc- tober 19, 1850.	Maj. G. H. Croswan, q. m., with Bishop & Watson.	Transportation of troops: To transport, from Fort Millin, Pa., to New Orleans, La., on the bark Charles Thompson, 2 officers and 55 enlisted men, servants, and laundresses, with their baggage and stores, for the sum of \$1,120.	

37	Alexandria, Va., October 17, 1850.	Lieut. J. C. Davis, a. a. q. m., with Stephen Shinn & Son.	Charter: For the charter of the brig Nancy, from Fort Washington, on the Potomac, to New Orleans, La., to transport 2 officers, and forty-five men and women, for the sum of \$2,500.
38	St. Anthony, M. T., September 26, 1850.	Bt. Capt. R. W. Kirkham, a. q. m., with John Rollins.	Transportation of troops: To transport, from St. Anthony, M. T., to Fort Gaines, M. T., on the steamboat Governor Ramsay, 1 officer and 23 men, with their baggage, &c., for the sum of \$2 50 each for the officer and men.
39	New York, April 1, 1851.	Major O. Cross, q. m., with J. Atkins & Co.	Transportation of troops: To transport from Bedlow's Island, N. Y., to New Orleans, La., on the ship Juliet, 3 officers and 240 men and laundresses, with their stores and baggage, for the sum of \$1,200. Demurrage \$50 per day.
40	Key West, Fla., November, 4 1850.	Lt. J. C. Booth, a. a. q. m. with A. F. Tift.	Transportation of troops: To transport from Key West, Fla., to Charleston, S. C., on the steamship Isabel, 2 companies of the (D and E) 4th artillery, with their officers and servants and camp and garrison equipage, for the sum of \$1,340.
41	Savannah, Ga., August 14, 1850.	Capt. M. S. Miller, a. q. m., with Erastus Lodge.	Charter: For the charter of the schooner J. H. Holmes from Savannah, Ga., to Indian river, Fla., to be at the exclusive use of the United States, and to transport such stores as she may be freighted with, (in bulk about 1300 barrels) for the sum of \$950.
42	St. Louis, Mo., August 20, 1850.	Capt. N. J. T. Dana, a. q. m., with M. L. Atchison.	Transportation of troops: To transport from St. Louis, Mo., to Fort Leavenworth, on the steamer Highland Mary, 1 officer and 15 men, with their baggage; for the sum of \$8 for the officer, and \$3 for each man.
43	St. Louis, Mo., April 1, 1850.	Capt. L. C. Easton, a. q. m., with A. C. Montfort.	Transportation of troops: To transport from St. Louis to Fort Snelling, on the steamer Dr. Franklin, No. 2, 10 men and 1 laundress, for the sum of \$4 each.
44	St. Louis, Mo., August 23, 1850.	Capt. N. J. T. Dana, a. q. m., with J. Cheever.	Transportation of troops: To transport from Jefferson barracks to Fort Leavenworth on the steamer Anna, 3 officers and 70 men, for the sum of \$8 for each officer and \$4 for each man, and \$6 for each sick man furnished a state-room.
45	Savannah, Ga., June 23, 1850.	Capt. M. S. Miller, a. q. m., With R. Harbersham.	Charter: For the charter of the schooner Cotton Plant from Savannah, Ga., to Indian river, Fla., to be at the exclusive use of the United States, and to transport such stores as she may be freighted with, for the sum of \$400.
46	Savannah, Ga., November 12, 1850.	Capt. M. S. Miller, a. q. m., with James A. Dubel.	Charter: For the charter of the brig Henrietta from Savannah, Ga., to Indian river, Fla., to be at the exclusive use of the United States, and to transport such stores as she may be freighted with, for the sum of \$700.
47	Savannah, Ga., November 16, 1850.	Capt. M. S. Miller, a. q. m., with Cohens & Hertz.	Charter: For the charter of the steamer Jasper from Indian river, Fla., to Charleston, S. C., to be at the exclusive use of the

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
48	New York, February 15, 1851.	Brig. Gen. H. Whiting, a. q. m. g., with Wetmore & Cryder.	United States, and transport such troops and stores as may be required (elsewhere than named if deemed necessary) for the sum of \$1,000 per week and pro rata per day, whilst in public employ. Charter: For the charter of ship Montauk from New York City to San Diego and Benicia, Cal., to transport 2027 barrels and 223 boxes subsistence stores to Benicia, and 982 barrels and 109 boxes subsistence stores to San Diego for the sum of \$15,950. Demurrage \$65 per day.	
49	Detroit, Mich., January 1, 1851.	Bt. Capt. E. S. Sibley, a. q. m., with S. Gillet.	Rent of fishing privileges: To rent for the term of two years from January 1, 1851, of the United States, the exclusive privilege of fishing upon the fishing ground situated upon the Military Reserve at Fort Gratiot, for the sum of \$125 per annum.	
50	Newport, Ky., April 10, 1851,	Bt. Maj. E. Van Dorn, a. q. m., with J. Tucker.	Transportation of troops: To transport from Newport, Ky., to Jefferson barracks, Mo., on the steamer Pike, No. 9, 1 officer and 70 men, with their camp and garrison equipage, for the sum of \$10 for the officer, and \$2 50 for each man.	
51	Fort Leavenworth, Mo. February 25, 1851.	Lt. Col. T. Swords, q. m., with B. Holladay.	Transportation of stores: To transport from Fort Leavenworth, Mo., to Forts Kearney and Laramie, in good substantial wagons, such army stores as shall be for transportation during the years 1851 and 1852, for the sum of \$3 80 per hundred to Fort Kearney, and \$6 80 per hundred to Fort Laramie. Bond \$20,000.	J. M. Hughes. Joseph Charles.
52	Fort Atkinson, Iowa, February 17, 1851.	Lt. Col. T. Swords, q. m., with L. Harkins.	Taking charge of public property: To take in charge and tend to the preservation and security of the Military Reservation at Fort Atkinson, from November 2, 1850, for the sum of \$25 per month.	
53	Fort Leavenworth, Mo. March 10, 1851.	Lt. Col. T. Swords, q. m., with Perry & Young.	Transportation of stores: To transport from Fort Leavenworth, Mo., to Fort Mackay, in good substantial wagons, such army stores as shall be for transportation during the years 1851 and 1852, for the sum of \$1 23 per hundred. Bond, \$50,000.	A. W. Riley. W. Dickey.
54	Prarie du Chien, Wis., March 18, 1851.	Lt. Col. T. Swords, q. m., with E. P. Wood.	Taking charge of public property: To take in charge and tend to the preservation and security of the Military Reservation at Fort Crawford, Wis., from March 18, 1851, for the sum of \$25 per month.	



55	Indian river, Fla., September, 18, 1850.	Capt. Thos. Jordan, a. q. m., with Jas. P. Lighbourn.	Transportation of stores; To transport from Indian River to Fort Dallas, E. Fla., on the schooner Fire Fly, so many barrels, kegs and boxes of subsistence stores as can be stowed under cover, for the sum of 75 cents per barrel, 38 cents per keg, and 20 cents per box.
56	Newport barracks, Ky., April 15, 1851.	Bt. Maj. E. Van Dorn, a. a. q. m., with H. J. Spotts.	Transportation of troops: To transport from Newport barracks, Ky., to Jefferson barracks, Mo., on the steamer Lady Franklin, 1 officer and 100 recruits, servants, &c., with their baggage, &c., for the sum of \$10 the officer, and \$2 50 for the others, apiece.
57	New York, August 7, 1850.	Bt. Gen. H. Whiting, a. q. m. g., with Hussey & Murray.	Transportation of troops: To transport from Bedlow's Island, N. Y., to Port Lavaca, Tex., on the barque Milford, 3 officers, and 105 men, laundresses, &c., with their baggage and stores, such as may be put aboard, for the sum of \$2,950. Demurrage, \$50 per day.
58	New York, July 31, 1851.	Brig. Gen. H. Whiting, a. q. m. g., with J. Howard & Son.	Transportation of troops: To transport from Bedlow's island, N. Y., to Port Lavaca, Texas, on the steamer Galveston, 3 officers and 88 recruits, with their baggage, for the sum of \$60 for each officer, and \$20 for each man.
59	New York, September 24, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with J. Belknap Smith.	Rent of burying-ground: To rent for the term of 99 years, 20 lots, containing 1,600 superficial feet, situated in the New York Bay Cemetery, county of Hudson, New Jersey, for the sum of \$300.
60	New York, July 18, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with John W. Mills.	Transportation of troops: To transport from New York city to St. Louis, Mo., by way of Buffalo and the lakes, 3 officers and 252 non-commissioned officers, privates, &c., with their baggage, for the sum of \$20 for each officer, and \$13 75 for each man. All baggage over 100 pounds per man, \$3 25 per hundred.
61	New York, September 20, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with W. Nelson.	Transportation of troops: To transport from Bedlow's island, N. Y., to Port Lavaca, Texas, on the ship Sultana, 3 or 4 officers and 170 men, and 6 laundresses, with baggage, and what other property there may be to send, for the sum of \$4,000. Demurrage, \$70 per day.
62	New York, October 19, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with W. H. Parsons.	Charter: For the charter of the ship Kate Hunter, from Governor's island, N. Y., to Tampa Bay, Fla., to transport 5 officers and 188 men and laundresses, with their baggage, and what other property there may be to send, for the sum of \$1,995. Demurrage, \$80 per day.
63	Charleston, S. C., November 18, 1850.	Lient. J. C. Booth, a. a. q. m., with H. Missroon.	Transportation of troops: To transport from Charleston, S. C., to Fort Hamilton, N. Y., on the steamer Southerner, two companies of 4th artillery, D and E, with their officers, servants, baggage, &c., with one horse, for the sum of \$1,151.

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
64	Indianola, Texas, April 1, 1851.	Lieut. E. Hays, a. a. q. m., with Wm. M. Cook.	Rent of wharf and warehouse: To rent for the term of 6 months from date, the wharf and warehouse (known as Cook's,) situated in Indianola, Texas, together with lots adjoining, occupied at present by the United States, for the sum of \$80 per month.	Pierre Choteau, Jr., & Co., and Franklin Steele.
65	Fort Gaines, M. T., July 10, 1850.	Capt. N. J. T. Dana, a. q. m., with Chas. W. Borup.	Hay and oats: To deliver at Fort Gaines, M. T., 10,000 bushels of oats before March 1, 1851, and 300 tons of prairie hay before February 1, 1851, the quantity of each to be increased or diminished one-fifth, if required, for the sum of \$1 30 per bushel for the first 2,300 bushels of oats; for the remaining quantity, \$1 per bushel; for the hay, \$8 per ton, and all over amount named, \$10 per ton. Bond for oats, \$3,000. Bond for hay, \$800.	
66	New York, October 24, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with Thos. F. Stanton.	Transportation of troops: To transport from New York to New Orleans, La., on the ship Francis P. Sage, 2 officers and 28 men, being the non-commissioned S. and B., &c., for the sum of \$730.	
67	New York, October 23, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with N. P. Thompson.	Charter: For the charter of the ship Silas Leonard, from Bedlow's island, N. Y., to Indianola, Lavaca bay, Texas, to transport 2 officers and 158 recruits and laundresses, with their stores and baggage, with such other property as there may be to send, for the sum of \$1,995. Demurrage, \$60 per day.	Elijah Rogers, W. W. Porter, Jonathan Hicklin, Jas. W. Reuick, G. R. Smith, A. M. Forbes.
68	New York, August 3, 1850.	Maj. D. H. Rucker, a. q. m., with John W. Mills.	Transportation of stores: To transport from New York to St. Louis, Mo., within nine days from their arrival at the New York depot, such lots of clothing and other stores as there may be to forward from time to time, for the sum of \$5 per hundred pounds.	
69	Fort Leavenworth, Mo., February 17, 1851.	Lieut. Col. T. Swords, q. m., with Jones & Russell.	Transportation of stores: To transport from Fort Leavenworth, Mo., to Santa Fe and Albuquerque, in good strong wagons, during the years 1851 and 1852, such army stores as may be required to be sent, for the sum of \$8 59 per 100 pounds to Santa Fe, and \$9 50 per 100 pounds to Albuquerque. Bond \$50,000.	
70	St. Paul, M. T., April 2, 1851.	Capt. N. J. T. Dana, a. q. m., with C. W. Bomp.	Corn and oats: To deliver what short forage may be required at Fort Ripley during the period of a year from date, (the existing	

71	St. Louis, Mo., October 2, 1850.	Capt. N. J. T. Dana, a. q. m., with T. M. Meline.	contract for forage being hereby annulled by these parties,) for the sum of \$1 25 per bushel for oats delivered prior to next harvest; for the remainder, 90 cents per bushel; for corn, \$1 50 per bushel.
72	St. Louis, Mo., August 10, 1850.	Capt. N. J. T. Dana, a. q. m., with P. Yore.	Transportation of troops: To transport from St. Louis, Mo., to Fort Leavenworth, on the steamer Sacramento, 5 enlisted men and 1 laundress, for the sum of \$1 apiece.
78	St. Louis, November 8, 1850.	Lieut. Col. T. Swords, q. m., with Beach, Eddy & Co.	Transportation of horses: To transport from St. Louis, Mo., to Fort Leavenworth, on the steamer St. Paul, 125 horses, with their forage, and hired citizens, for the sum of \$7 for each horse, and \$4 for each man.
74	St. Louis, October 29, 1850.	Lieut. Col. T. Swords, q. m., with Jos. Labarge, jr.	Transportation of stores: To transport from St. Louis, Mo., to Jefferson barracks, Mo., on the steamer Kingston, 23,000 feet of lumber, 6,500 bricks, 50 barrels of pork, 5 sacks of salt, and such other stores as may be required, for the sum of \$150.
75	St. Paul, M. T., April 2, 1851.	Capt. N. J. T. Dana, a. q. m., with C. W. Bomp.	Transportation of troops: To transport from St. Louis, Mo., to Fort Leavenworth, Mo.; on the steamer St. Ange, one laundress, with her baggage, for the sum of \$5.
76	Fort Smith, Ark., July 2, 1850.	Capt. A. Montgomery, a. q. m., with Jas. Withers.	Transportation of stores: To receive and store at St. Paul, M. T., and transport thence to Fort Ripley, all such army stores as may be destined for Fort Ripley, during a year from March 15, 1851, for the sum of \$1 12½ per 100 pounds.
77	St. Louis, Mo., April 18, 1851.	Lieut. Col. T. Swords, q. m., with Joseph Clymer.	Transportation of troops: To transport from Fort Smith, Ark., to Fort Gibson, on the steamer J. B. Gordon, company E, 5th infantry, officers, men, &c., with their baggage and stores, for the sum of \$325, and <i>pro rata</i> to any point short of Fort Gibson.
78	New York, May 10, 1851.	Major O. Cross, q. m., with M. O. Roberts.	Transportation of stores: To transport, in wagons, from Fort Leavenworth to El Paso, Texas, and Dona Ana and Don Fernando de Taos, N. M., during the years 1851 and 1852, such army stores as there shall be to be transported, for the sum of \$12 84 per 100 pounds to El Paso, \$12 50 per 100 pounds to Dona Ana, and \$8 83 per 100 pounds to Fernando de Taos. Bond, \$50,000.
			Charter: For the charter of the steamer Crescent City, from New York harbor to Savannah, Ga., to transport 12 officers and 300 men and 1 undresses, with their baggage, for the sum of \$1,200 per day whilst in Government use; 3 days' pay allowed for her return to New York.

David Waldo, Jabez Smith, Wm. McCoy.

# STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
79	La Vaca, Texas, November 1, 1846.	Capt. J. R. Irvine, a. q. m., with Thos. Haynes.	Rent of ground: To rent 6 acres of land, being part of the town tract of La Vaca, and the undivided property of Thos. Haynes, C. K. Bullard, and J. M. Smith, until such a time as said land is divided, for the consideration of the benefit arising from the occupation by the United States.	
80	New Orleans, La., May 2, 1851.	Col. T. F. Hunt, dep. q. m. g., with J. C. Cable.	Transportation of troops: To transport, from New Orleans, La., to Jefferson barracks, on the steamboat James Hewett, such number of officers, men, &c., with their stores and baggage, as there may be to be transported, for the sum of \$15 for each officer, and \$2 50 each for the men.	
81	New Orleans, La., Ap'l 24, 1851.	Col. T. F. Hunt, dep. q. m. g., with C. J. Meeker & Co.	Transportation of troops: To transport, from New Orleans, La., to St. Joseph's Island, Aransas Bay, Texas, and return, on the steamboat Fanny, such troops as there may be to be transported to and from either place, for the sum of \$15 for each officer, and \$8 for each man, to St. Joseph's Island, and \$15 for each officer, and \$6 for each man, to New Orleans.	
82	New Orleans, La., Ap'l 21, 1851.	Col. T. F. Hunt, dep. q. m. g., with T. B. Smith.	Transportation of troops: To transport, from New Orleans, La., to Fort Smith, Ark., on the steamer Cleona, and to Fort Gibson, if required, such number of troops as there shall be to go, not exceeding 4 companies and 8 horses, for the sum of \$15 for each officer, and \$5 for each man, to Fort Smith, and \$5 and \$2 50, respectively, in addition, to Fort Gibson; and for each of the horses \$12 to Fort Smith, and \$15 to Fort Gibson.	
83	New Orleans, La., January 3, 1851.	Capt. R. E. Clary, a. q. m., with H. E. Boelmer.	Transportation of troops: To transport, from New Orleans barracks to Indianola, Texas, on the steamer Portland, 1 officer and 77 recruits, with their stores, &c., for the sum of \$20 for the officer, and \$8 for each man.	
84	Newport barracks, Ky., May 27, 1851.	Brevet Major E. Van Dorn, a. a. q. m., with H. J. Spotts.	Transportation of troops: To transport, from Newport barracks to Jefferson barracks, Mo., on the steamer Lady Franklin, a detachment of 13 enlisted men, for the sum of \$2 50 for each man.	
85	New Orleans, La., May 17, 1851.	Col. T. F. Hunt, dep. q. m. g., with A. Warden.	Transportation of troops: To transport, from New Orleans barracks to Fort Smith, Ark., on the steamboat Pontiac, No. 2, such	

86	Fort Graham, Texas, February 14, 1851.	Lieut. C. D. Jordan, a. a. q. m., with Jesse Sutton.	number of troops (officers and privates) as there shall be to be transported, for the sum of \$15 for each officer, and \$9 for each man.
87	New York, May 21, 1851.	Major O. Cross, q. m., with Silvester Center.	Wood: To deliver at Fort Graham, Texas, all the fire-wood, building-timber, and charcoal, that shall be required between February 1, 1851, and June 30, 1851, for the sum of \$3 per cord for the wood and timber, and 25 cents per bushel for coal.
88	Fort Gibson, C. N., March 12, 1851.	Lieut. Sam'l Archer, a. a. q. m., with Hugh L. Rogers.	Transportation of troops: To transport, from New York city to Jefferson barracks, Mo., by the way of Buffalo and the lakes, 1 officer and 85 non-commissioned officers, privates, &c., for the sum of \$25 for the officer, and \$11 for each man; extra freight, \$2 75 per 100 pounds.
89	San Francisco, Cal., September 5, 1850.	Capt. J. L. Folsom, a. q. m., with Ogden & Haynes.	Transportation of troops: To transport, from Fort Gibson, C. N., to Fort Smith, Ark., on the steamer General Shields, company E, 5th infantry, with their baggage, for the sum of \$300.
90	Savannah, Ga., Janu- ary 9, 1851.	Capt. M. S. Miller, a. q. m., with John Wilson.	Transportation of troops: To transport, from San Francisco, Cal., to San Pedro, Cal., on the barque Galinda, 4 officers, 18 privates, and 3 laundresses, of company A, 2d infantry, with their stores, &c., for the sum of \$1,600.
91	St. Louis, Mo., March 20, 1851.	Lieut. Col. T. Swords, q. m., with Wm. C. Jewett.	Charter: For the charter of the schooner Kossuth, from Savannah, Ga., to Indian river, Fla., to be at the exclusive use of the United States, and transport such stores as she may be freighted with, for the sum of \$650.
92	St. Louis, Mo., March 1, 1851.	Lieut. Col. T. Swords, q. m., with Wm. C. Jewett.	Transportation of troops: To transport, from Jefferson barracks to Fort Leavenworth, on the steamer Kansas, 1 officer and 37 men, laundresses, &c., with their arms, &c., for the sum of \$15 for the officer, and \$6 for each man; freight, 75 cents per 100 pounds.
93	St. Louis, Mo., March 1, 1851.	Lieut. Col. T. Swords, q. m., with Wm. C. Jewett.	Transportation of troops: To transport, from St. Louis, Mo., to Jefferson barracks, on the steamer Kansas, 16 enlisted men, with arms, &c., for the sum of \$1 each.
94	New York, June 3, 1851.	Major O. Cross, q. m., with Thos. Wardle.	Transportation of troops: To transport, from Jefferson barracks to Fort Leavenworth, on the steamer Kansas, 2 officers and 84 men and laundresses and 13 horses, with their arms, &c., for the sum of \$10 for each officer, \$3 for each man, and \$6 for each horse; freight, 40 cents per 100 pounds.
			Charter: For the charter of the ship Catharine, from New York harbor to Smithville, N. C., and Fort Moultrie, Charleston, S. C., to transport 2 companies of artillery and 68 recruits, with their baggage and stores, for the sum of \$1,600. Demurrage, \$50 per day.

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
95	Washington city, D. C., October 1, 1850.	Lieut. Col. J. D. Graham, a. q. m., with Mary J. Flood.	Rent of rooms: To furnish, at Washington city, rooms, bedding, fire and lights for a detachment of United States troops, from October 1, 1850, during the pleasure of the officer commanding, for the sum of \$1 per week for each man.	
96	Savannah, Ga., February 25, 1851.	Capt. M. S. Miller, a. q. m., with L. W. Conner.	Charter: For the charter of the schooner Uranus, from Savannah, Ga., to Indian river, Fla., to be at the exclusive use of the United States, and to transport such stores as she may be freighted with, for the sum of \$100. Demurrage, \$15 per day.	
97	New York, December 21, 1850.	Brig. Gen. H. Whiting, a. q. m. g., with H. Tooker.	Charter: For the charter of the schooner O. L. Bayles, from New York harbor to Fort Washington, Potomac river, to transport one company of the 4th artillery, with their officers and stores, as directed, for the sum of \$300.	
98	Austin, Texas, June 11, 1851.	Lieut. A. D. Tree, r. q. m., with Josiah Fisk.	Hay: To deliver at Austin arsenal, Texas, 100 tons of good quality prairie hay, on or before August 31, 1851, for the sum of \$7 25 per ton. Bond, \$183.	E. S. Johnson, Geo. H. Gray.
99	Austin, Texas, June 2, 1851.	Lieut. A. D. Tree, r. q. m., John McGuire.	Hay: To deliver at Austin, Texas, 100 tons of good quality prairie hay, on or before August 31, 1851, for the sum of \$7 per ton. Bond, \$166.	Geo. Hancock, Josiah Fisk.
100	Austin, Texas, June 2, 1851.	Lieut. A. D. Tree, r. q. m., with John Phillips.	Hay: To deliver at Austin, Texas, 100 tons of good quality prairie hay, on or before August 31, 1851, for the sum of \$7 per ton. Bond, \$166.	Ed. Zimmerman, Calvin Bell.
101	Austin, Texas, April 17, 1851.	Lieut. A. D. Tree, r. q. m., with Jos. Lee.	Wood: To deliver at Austin, Texas, 150 cords of good merchantable wood, on or before November 30, 1851, for the sum of \$3 per cord. Bond, \$300.	J. W. Robertson, Jno. C. Lee.
102	New Orleans, La., July 7, 1851.	Capt. R. E. Clary, a. q. m., with J. T. Black.	Transportation of troops: To transport from New Orleans to Jefferson barracks, Mo., on the steamer Ohio, 8 officers and 35 enlisted men, with their laundresses, &c., for the sum of \$25 for each officer and \$10 for each man, &c.	
103	New York, June 28, 1851.	Maj. O. Cross, q. m., with James Downey.	Coal: To deliver at Bedlow's and Governor's islands, Forts Hamilton and Lafayette, before October 1, 1851, 1,520 tons of best quality broken and screened anthracite coal, for the sum of \$3 25 per ton for such as shall be delivered at Bedlow's and	

104	Fort Gibson, C. N., June 13, 1851.	Lieut. H. M. Black, r. q. m., with Abraham Allen.	Governor's islands, and \$3 21 per ton for such as shall be delivered at Fort Hamilton and Fort Lafayette. Transportation of troops: To transport from Fort Gibson, C. N., to Brazos river, <i>via</i> Fort Washita, Ark., in eight good wagons, the baggage, hospital and subsistence supplies of the headquarters, non-commissioned staff, and band, and one company of the 5th regiment of infantry, for the sum of \$5 per day for each wagon while in public service.	
105	Fort Gibson, C. N., June 24, 1851.	Lieut. H. M. Black, r. q. m., with James Wilkins.	Hay: To deliver at Fort Gibson, C. N., before September 1, 1851, 175 tons of good clean hay, for the sum of \$6 per ton. Bond, \$5,000.	William P. Denckla, Wm. D. Shaw.
106	Portland, Me., July 31, 1851.	Lieut. John Kellogg, a. a. q. m., with Levi Sawyer & Son.	Coal: To deliver at Fort Preble, Me., before October 31, 1851, 80 tons of the best Peach mountain, and 20 tons of the best Lehigh coal, broken and screened, for the sum of \$5 80 per ton. Bond, \$600.	E. W. Patten, H. H. Boody.
107	Portland, Me., July 22, 1851.	Lieut. John Kellogg, a. a. q. m., with Elijah Guilford.	Wood: To deliver at Fort Preble, Me., before October 31, 1851, 100 cords of good merchantable oak wood, for the sum of \$5 per cord. Bond, \$500.	John Guilford, Sam <sup>l</sup> A. Nash.
108	Fort Smith, Ark., June 28, 1851.	Capt. A. Montgomery, a. a. q. m., with Chas. B. Johnson.	Hay: To deliver at Fort Smith, Ark., before July 31, 1851, 250 tons of good merchantable hay, for the sum of \$5 73 per ton.	
109	Fort Washington, Md., July 23, 1851.	Lieut. G. W. Hazzard, a. a. q. m., with R. Atkinson.	Wood: To deliver at Fort Washington, Md., before September 30, 1851, 350 cords of best quality oak wood, for the sum of \$4 20 per cord.	
110	Fort Croghan, Texas, July 6, 1851.	Lieut. T. K. Jackson, a. a. q. m., with Samuel Mankin.	Hay: To deliver at Fort Croghan, Texas, before September 15, 1851, 100 tons of good hay, with 50 additional tons, if required, for the sum of \$9 50 per ton. Bond, \$2,000.	R. H. Williams, G. T. Williams.
111	Washington city, D. C., June 11, 1851.	Capt. M. M. Clark, a. q. m., with J. Williams and H. Wells.	Rent of rooms: To rent from July 1, 1851, during the pleasure of the parties, the two lower rooms and front cellar of the brick building situate on the corner of Pennsylvania avenue north, and Seventeenth street west, to be used as store-room, office, &c., for the sum of \$200 per annum, and <i>pro rata</i> .	
112	Dokesville, C. N., July 11, 1851.	Lieut. M. R. Stevenson, a. a. q. m., with Simpson Folsom.	Hay: To deliver at Fort Towson, C. N., by September 1, 1851, 80 tons of good, sound, well cured hay, for the sum of \$4 98 per ton. Bond, \$600.	J. R. Berthelot, Sampson Folsom.
113	New York, August 9, 1851.	Maj. O. Cross, q. m., with James W. Elwell.	Charter: For the charter of the ship, S. V. Givens, from New York harbor to Smithville, N. C., to transport two companies of artillery, there being six officers, for the sum of \$1,995. Demurrage, \$60 per day.	

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
114	Fort Smith, Ark., June 7, 1851.	Capt. A. Montgomery, a. q. m., with Messrs. Black & Butt.	Transportation of stores: To transport, from Preston, Texas, to the Brazos river, (about 168 miles,) in good, well-covered wagons, such army stores and baggage as there shall be to be transported, during a year from date, for the sum of \$3 per hundred weight, and <i>pro rata</i> for a farther distance. Bond, \$52,000.	W. H. Hunt and J. D. Fitzgerald.
115	Baltimore, Md., November 18, 1850.	Major S. B. Dusenbury, q. m., with Jacob Anderson.	Transportation of stores: To transport, from Baltimore, Md., to Indianola, Texas, on the brig Waverly, 1,388 pounds bulk of government stores, for the sum of \$1 per pound bulk, and <i>pro rata</i> . Demurrage, \$25 per day.	
116	St. Louis, Mo., April 24, 1851.	Capt. F. H. Masten, a. q. m., with W. E. Saltmarsh.	Transportation of troops: To transport, from St. Louis, Mo., to Fort Leavenworth, on the steamer Saranac, 1 officer and fifty enlisted men and laundresses, with their baggage, &c., for the sum of \$10 for the officer, and \$1 each for the others.	
117	St. Louis, Mo., May 12, 1851.	Capt. F. H. Masten, a. q. m., with W. C. Jewett.	Transportation of troops: To transport, from Jefferson barracks, Mo., to Fort Leavenworth, on the steamer Kansas, 4 officers and 200 enlisted men, laundresses, and servants, with their baggage, &c., for the sum of \$15 for each officer, and \$6 each for the others; for the officers' horses, \$10 apiece.	
118	St. Louis, Mo., April 12, 1851.	Capt. F. H. Masten, a. q. m., with T. H. Brierly.	Transportation of troops: To transport, from Jefferson barracks, Mo., to Fort Leavenworth, on the steamer El Paso, 3 officers and 133 enlisted men, laundresses, and servants, with their baggage, &c., for the sum of \$10 for each officer, and \$4 each for the others.	
119	St. Louis, Mo., January 11, 1851.	Lient. Col. T. Swords, q. m., with Thos. Rector.	Transportation of horses: To transport, from Gaines's Landing, Mississippi river, to San Antonio, Texas, such number of horses as may be placed under his charge at Gaines's Landing, for the sum of \$1 50 per day, besides expenses, from St. Louis to San Antonio, and \$90 in full of expenses in returning to St. Louis.	
120	St. Louis, Mo., March 28, 1851.	Lient. Col. T. Swords, q. m., with W. E. Saltmarsh.	Transportation of troops: To transport, from Jefferson barracks, Mo., to Fort Leavenworth, on the steamer Saranac, 1 officer and 80 enlisted men, laundresses, and servants, with their baggage, for the sum of \$10 for the officer, and \$5 each for the others.	



121	Savannah, Ga., May 8, 1851.	Capt. M. S. Miller, a. q. m., with W. K. Gourlay.	Charter: For the charter of the schooner Mary Ann, from Savannah, Ga., to St. Augustine and Indian river, Fla., to be at the exclusive use of the United States, and transport such stores as she may be freighted with for either place, for the sum of \$100. Demurrage, \$15 per day.	
122	Fort Adams, R. I., August 18, 1851.	Bt. Maj. J. F. Reynolds, r. q. m., with George Bowen & Co.	Coal: To deliver at such times and in such quantities as may be required, at Fort Adams, Newport, R. I., 375 tons of Peach Mountain, broken, and screened coal, for the sum of \$5 45 per ton. Bond, \$1,000.	W. H. Ailman and Chas. Howard.
123	Fort Adams, R. I., August 18, 1851.	Bt. Maj. J. F. Reynolds, r. q. m., with T. H. Halloway.	Wood: To deliver at Fort Adams, Newport, R. I., at such times and in such quantities as required, 250 cords of good, merchantable, well-seasoned oak wood, for the sum of \$6 per cord. Bond, \$1,000.	David S. Baker and D. S. Halloway.
121	Fort Trumbull, Conn., October 4, 1850.	Capt. S. L. Fremont, a. a. q. m., with Holt & Fitch.	Wood: To deliver at Fort Trumbull, Conn., at such times and in such quantities as required, 200 cords of the best quality, merchantable oak wood, for the sum of \$5 50 per cord.	
125	Madison barracks, N. Y., July 21, 1851.	Bt. Capt. W. S. Grant, r. q. m., with S. Hooker.	Wood: To deliver at Madison barracks, N. Y., for the year ending June 30, 1852, such quantity of wood as shall be required, for the sum of \$2 70 per cord. Bond, \$250.	Jesse C. Dann and Jas. L. Hooker.
126	Fort Gratiot, Mich., August 9, 1851.	Lieut. T. J. Montgomery, a. a. q. m., with James Cox.	Wood: To deliver at Fort Gratiot, Mich., by the 28th of February, 1852, 460 cords of good, hard-seasoned fire-wood, for the sum of \$2 99 per cord. Bond, \$1,500.	L. M. Mason and Jas. Sanborn.
127	St. Louis, Mo., June 4, 1851.	Capt. S. Van Vliet, a. q. m., with John Shaw.	Transportation of troops: To transport, from St. Louis, Mo., to Fort Leavenworth, Mo., on the steamer Saranac, 1 officer and 111 enlisted men, with their baggage, &c., for the sum of \$8 for the officer, and \$2 50 each for the men.	
128	Fort Snelling, M. T., June 9, 1851.	Bt. Capt. S. P. Buckner, a. a. q. m., with D. S. Harris.	Transportation of troops: To transport, from Fort Snelling, M. T., to Jefferson barracks, Mo., on the steamer Dr. Franklin, No. 2, 1 officer, 20 enlisted men, &c., one servant, and one horse, with their arms, &c., for the sum of \$200.	
129	Howard's Bend, Missouri river, May 7, 1851.	Maj. W. F. Sanderson, a. a. q. m., with W. H. Fulton.	Transportation of troops: To transport, from the steamer St. Paul, at Howard's Bend, Missouri river, to Fort Leavenworth, Mo., 1 officer and 135 men, &c., with their baggage, for the sum of \$1,250.	
130	Fort Gates, Texas, June 21, 1851.	Lieut. H. Haldeman, a. a. q. m., with Lewis A. Ogle.	Hay: To deliver at Fort Gates, Texas, by the 15th of August, 1851, 200 tons of well-cured hay, for the sum of \$7 50 per ton. Bond, \$1,000.	Jn. Williams and J. J. Ake.
181	Fort Graham, Texas, April 16, 1851.	Lt. N. C. Givens, a. a. q. m., with J. C. Brice.	Building materials: To deliver at Fort Graham, Texas, before the 20th of May, 1851, 20,000 clap boards and 150 bushels of lime of good quality, for the sum of \$2 50 per hundred for the boards, and 50 cents per bushel for the lime.	

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
182	St. Louis, Mo., April 16, 1851.	Capt. F. H. Masten, a. q. m., with N. Robirds.	Transportation of troops: To transport from Jefferson barracks, Mo., to New Orleans barracks, on the steamer Grand Turk, 12 officers and 225 men, &c., together with 6 horses, stores and baggage, for the sum of \$12 each officer, \$2 50 each man, &c., and \$6 for each horse.	Benjamin Mathes and Alfred Hoitt.
188	Fort Constitution, N. H., Oct. 9, 1851.	Bt. Capt. H. B. Field, a. a. q. m., with William P. Frost.	Wood: To deliver at Fort Constitution, N. H., for one year commencing October 10, 1851, such quantity of the best upland oak or hickory as may be required, for the sum of \$7 85 per cord. Bond \$1,000.	
184	Newport, Ky., October 8, 1851.	Bt. Major E. Vandorn, a. a. q. m., with D. Wilkins.	Transportation of troops: To transport from Cincinnati, Ohio, to Jefferson barracks, Mo., on the steamer Geneva, 3 officers and 100 recruits, &c., with their baggage, for the sum of \$15 for each officer, and \$4 75 each for the others.	
185	Newport, Ky., October 10, 1851.	Bt. Major E. Vandorn, a. a. q. m., with John Wilson.	Transportation of troops: To transport from Cincinnati, Ohio, to Jefferson barracks, Mo., on the steamer Lady Franklin, 1 officer and 80 recruits, &c., with their baggage, for the sum of \$10 for the officer and \$4 50 each for the others.	
186	Wild Horse Creek, C. N., July 1, 1851.	Bt. Lt. T. Henry, a. a. q. m., with A. Cloud.	Hay: To deliver within six miles of Wild Horse Creek, C. N., in quantities as may be directed, 100 tons of good, sweet and sound hay, for the sum of \$4 per ton.	
187	Wild Horse Creek, C. N., July 1, 1851.	Bt. Lt. T. Henry, a. a. q. m., with A. Cloud.	Building materials: To deliver within six miles of Wild Horse Creek, C. N., in quantities as may be required, 125,000 shingles and clap boards, for the sum of \$6 25 per thousand.	
188	Newport, Ky., October 16, 1851.	Bt. Major E. Vandorn, a. a. q. m., with G. W. Bowman.	Transportation of troops: To transport from Cincinnati, Ohio, to Jefferson barracks, Mo., on the steamer Federal Arch, 3 officers and 100 recruits, &c., with baggage and stores, for the sum of \$12 each officer, and \$1 each for the others.	
129	Newport, Ky., October 18, 1851.	Bt. Major E. Vandorn, a. a. q. m., with R. Pritchard.	Transportation of troops: To transport from Newport, Ky., to Fort Smith, Ark., on the steamer Emma Dean, 2 officers and 107 recruits, &c., with their baggage and stores, for the sum of \$2,500, and <i>pro rata</i> per mile for a less distance.	
140	New York, October 13, 1851.	Major O. Cross, q. m., with Thomas P. Stanton.	Charter: For the charter of the ship Francis P. Sage, from New York harbor to New Orleans barracks, La., to trans-	

141	Austin, Texas, Sept. 29, 1851.	Lt. A. D. Tree, r. q. m., with H. Cheatham and C. R. Johns.	port troops, say 200 non-commissioned officers, privates, &c., for the sum of \$1,075. Demurrage \$80 per day. Corn: To deliver at Austin, Texas, at such times and in such quantities as may be directed, 24,000 bushels of good, merchantable, shelled corn, for the sum of 98½ cents per bushel. Bond \$8,000.	George Handcock and James G. Swisher.
142	Fort Ontario, N. Y., October 16, 1851.	Lt. E. Underwood, a. s. q. m., with Phineas Hall.	Wood: To deliver at Fort Ontario, Oswego, New York, at times and in quantities as ordered, before December 1st, 1852, 325 cords of good, marketable quality and seasoned body maple wood, for the sum of \$2 94 per cord. Bond \$200.	E. Stevenson.
143	Fort Gibson, C. N., Sept. 29, 1851.	Lt. H. M. Black, r. q. m., with William D. Shaw.	Corn: To deliver at Fort Gibson, C. N., before the 31st of March, 1852, 3,500 bushels of good, sound and merchantable corn in the ear, for the sum of 69 cents per bushel. Bond \$5,000.	Wm. P. Denckler and Samuel R. Brady.
144	Fort Gibson, C. N., Sept. 27, 1851.	Lt. H. M. Black, r. q. m., with A. J. Maxwell.	Oats: To deliver at Fort Gibson, C. N., before the 30th of April, 1852, 7,000 bushels of good, clean, merchantable oats, for the sum of 42½ cents per bushel. Bond \$7,000.	T. K. Kidd and C. G. Scott.
145	Boston, Mass., October 29, 1851.	Major D. H. Vinton, q. m., with David R. Leecraw.	Coal: To deliver at Fort Independence, Mass., on or before the 10th of November, 1851, 70 tons or more of the best quality screened red ash coal, known as Peach mountain, for the sum of \$6 12 per ton. Bond \$500.	Warren Tilton and Calvin Bullard.
146	New London, Conn., October 28, 1851.	Lt. R. H. Smith, a. a. q. m., with Holt & Fitch.	Wood and coal: To deliver at Port Trumbull, Conn., by January 1st, 1853, 175 cords of good, sound, merchantable oak wood; and on or before December 1st, 1851, 75 tons of well screened red ash anthracite coal; for the sum of \$5 50 per cord for the wood, and \$6 per ton for the coal. Bond \$2,800.	W. A. Weaver.
147	Vancouver, Oregon, October 15, 1850.	Capt. R. Ingall, a. q. m., with James B. Leach.	Taking charge of public animals: To receive on or before November 1st, 1850, 97 public horses and 360 public mules, and herd, graze and protect them until required for use, for the sum of \$2 per month, each horse and mule.	
148	Fort Croghan, Texas, Sept. 23, 1851.	Lt. T. K. Jackson, a. a. q. m., with Evan Williams.	Corn: To deliver at Fort Croghan, Texas, commencing October 1st, 1851, at such times and in such quantities as directed, 6,000 bushels of sound, good, merchantable quality shelled corn, for the sum of \$1 30 per bushel. Bond \$5,000.	J. Williams and S. G. Sneed.
149	Fort Leavenworth, Mo., October 26, 1851.	Bt. Maj. F. A. Ogden, a. q. m., with Th. W. Scott.	Transportation of troops: To transport from Fort Leavenworth to Jefferson barracks, Mo., on the steamer St. Ange, 3 officers and 140 enlisted men, 100 horses and 6 laundresses, with baggage, &c., for the sum of \$900.	
150	Indianola, Texas, October 1, 1851.	Bt. Maj. E. B. Babbitt, a. q. m., with Wm. M. Cook.	Rent of wharf and warehouse: To rent, for the term of 12 calendar months from date, the wharf and warehouse known as "Cook's wharf and warehouse," with lots adjoining, situated at Indianola, Texas, for the sum of \$80 per month.	

## STATEMENT—Continued.

No.	Place and date.	Parties.	Subject-matter of contract.	Sureties.
151	Newport barracks, Ky., November 7, 1851.	Capt. N. C. Macrae, a. a. q. m., with G. U. Bowman.	Transportation of troops: To transport, from Cincinnati, Ohio, to Jefferson barracks, Mo., on the steamer Federal Arch, 2 officers and 39 recruits, &c., for the sum of \$12 for each officer, and \$4 each for the others.	
152	Newport barracks, Ky., November 11, 1851.	Capt. N. C. Macrae, a. a. q. m., with John Mulvine.	Transportation of troops: To transport from Cincinnati, Ohio, to Jefferson barracks, Mo., on the steamer Lydia Collins, 2 officers and 92 recruits, &c., for the sum of \$10 for each officer, and \$3 each for the others.	
153	San Francisco, Cal., November 11, 1851.	Capt. J. L. Folsom, a. q. m., with Ogden & Haynes.	Charter of ship: For charter of the ship Lucas, to transport commissary stores, supplies, &c., from Valparaiso and two other ports on the coast of South America to San Francisco, touching at San Diego on her return, for the sum of \$2,500 per month, with all port charges.	
154	San Pedro, Cal., June 25, 1851.	Capt. E. R. Kane, a. q. m., with J. D. Nason.	Transportation of troops: To transport from San Pedro to Monterey and San Francisco, Cal., 3 officers and 42 men, of the 3d artillery, for the sum of \$1,000.	
155	Fort Vancouver, Oregon, September 10, 1851.	Capt. R. Ingalls, a. q. m., with Wm. Tichenor.	Charter: For charter of steam propeller Sea Gull, to transport to Orford, from Vancouver, 25 tons of freight, including 12 mules and 1 horse; and from Astoria, 1 commissioned officer and 20 non-commissioned officers and soldiers, and a supply of commissary stores, for the sum of \$1,000.	
156	Fort Snelling, M. T., June 20, 1851.	Bt. Capt. S. B. Buckner, a. a. q. m., with Ch. U. Borup.	Corn and Oats: To deliver at Fort Snelling, on or before October 31, 1851, 2000 bushels of oats, and 5000 bushels of corn: the oats to weigh 32 pounds, and the corn 56 pounds to the bushel, for the sum of 40 cents per bushel for oats, and 46 for corn.	
157	Fort Towson, C. N., October 11, 1851.	Lieut. M. R. Stevenson, a. a. q. m., with Berthelet & Jones.	Corn: To deliver within the year at Fort Towson, C. N., a quantity of corn, not to exceed 3000 bushels, for the sum of 98 cents per bushel. Bond \$1,500.	Sampson Fulsom and L. D. Alsobrook.
158	Fort Towson, C. N., October 11, 1851.	Lieut. M. R. Stevenson, a. a. q. m., with Sampson Folsom.	Corn: To deliver within the year, at Fort Towson, C. N., a quantity of corn, not to exceed 3000 bushels, for the sum of 95 cents per bushel. Bond, \$1,500.	J. R. Berthelet and L. D. Alsobrook.
159	New Orleans, La., No- vember 7, 1851.	Col. Tho. F. Hunt, a. q. m. g., with Green, Harding & Co.	Transportation of troops: To transport on the steamer Trinity, from the New Orleans barracks to Rock Roe, on White River,	

160	San Antonio, Texas, October 1, 1851.	Bt. Lieut. Col. D. D. Tompkins, q. m., with S. A. Maverick.	Arkansas, such commissioned officers, not exceeding 6, and non-commissioned officers, musicians, privates and laundresses, not exceeding 269, as Lieut. Col. Wm. Chapman, U. S. A., commander of said troops, may direct, for the sum of \$2,500.	
161	Port Niagara, N. Y., December 2, 1851.	Lieut. J. C. Bonnycastle, a. a. q. m., with Lewis C. Beals.	Lease of a lot: To lease a lot of ground, with horse-yard and stables, situated in San Antonio, Texas, and now in possession of the quartermaster's department, for a term not to exceed ten years from date, for \$20 a month.	L. P. Babcock and W. D. Clark.
162	Mt. Vernon arsenal, Ala., November 21, 1851.	Lieut. A. H. Dearborn, a. a. q. m., with E. S. Barrett.	Wood, hay and straw: To deliver at Fort Niagara, N. Y., in January, 1852, 100 cords, and in March, 1852, 100 cords of maple, hickory, beech, or white oak wood; also, 5 tons of hay and 4 tons of oat straw, for the sum of \$2 25 for each cord of wood, \$10 for each ton of hay, and \$10 for each ton of straw. Bond, \$700.	E. S. Barrett and B. D. Simison.
163	Newport barracks, Ky., December 11, 1851.	Maj. E. Vandorn, a. a. q. m., with Capt. J. M. Moore.	Wood: To deliver at Mt. Vernon arsenal, Ala., oak wood in such quantities as the quartermaster may direct, until June 30, 1852, for the sum of \$2 75 per cord. Bond, \$100.	
164	Fort Smith, Ark., Sep- tember 6, 1851.	Capt. A. Montgomery, a. q. m., with Barrington, Shelton & Co.	Transportation of troops: To transport 2 commissioned officers and 107 recruits, laundresses and servants, more or less, on steamer Amazon, from Napoleon, Ark., to Rock Row, on White river, Arkansas, for the sum of \$375. Corn, oats and fodder: To deliver at Fort Smith, Ark., as follows, viz: 5,000 bushels corn, 5,000 bushels oats, and 10 tons of fodder, on or before November 30, 1851; 10,000 bushels corn and 15 tons fodder, on or before January 31, 1852; 10,000 bushels of corn, on or before March 31, 1852, and 5,000 bushels corn and 5,000 bushels oats, on or before June 30, 1852, for the sum of 64½ cents per bushel for corn, 39½ cents per bushel for oats, and \$2 50 for each one hundred pounds of fodder. Bond, \$49,000.	U. Barrington, Shelton & Co., Abram Allen and R. P. Smith.

QUARTERMASTER GENERAL'S OFFICE,  
Washington, D. C., January 5, 1852.

TH. S. JESUP, Q. M. G.



REPORT  
OF  
THE SECRETARY OF WAR,

WITH

*A statement of expenditures for contingencies of the Military establishment  
during the year 1851.*

JANUARY 9, 1852.

Ordered to lie on the table and be printed.

WAR DEPARTMENT,  
*Washington, January 9, 1852.*

SIR: As required by the fifth section of an act approved March 3, 1809, I have the honor to submit, herewith, a statement prepared by the Second Auditor, of the expenditures made during the year ending December 31, 1851, from the appropriation for contingencies of the Military establishment.

Very respectfully, your obedient servant,

C. M. CONRAD,  
*Secretary of War.*

Hon. WM. R. KING,  
*President of the Senate.*

Harrison, printer.

*A statement of the expenditure of the appropriation of the contingent expenses of the Military establishment for the year 1851; exhibited in pursuance of the fifth section of the act of 3d March, 1809, entitled "an act to amend the several acts for the establishment and regulation of the Treasury, War and Navy Departments."*

[13]

Date.	To whom paid.	For what purpose.	Amount.
1851.			
Jan. 21	William Read, Lt. and A. A. Q. M.....	Paid Nancy, a Wichita woman, for services as interpreter.....	\$10 00
21	E. D. Blake, Lt. and A. A. Q. M.....	Paid John Murphy and John Connor, for services as guides and interpreters in Texas, in 1849.....	228 00
25	A. D. Nelson, Lt. and A. A. Q. M.....	Paid Henry Belleud, Peter Quinn and Joseph Rolette, for services as guides and interpreters on Red river, in 1849.....	382 00
Feb. 4	C. Alexander.....	Printing returns, muster rolls, commissions, &c., for adjutant general's office, in 2d, 3d, and 4th quarters, 1850.....	52 50
4	W. G. Marshall, late district attorney, Maryland.	For professional services in defending ninety-two habeas corpus cases in the courts of Maryland.....	460 00
March 14	H. W. Black, Lt. and A. A. Q. M.....	Paid James Whitton and Samuel Rogers, for services as guides in Florida, in 1849.....	22 00
14	A. W. Bowman, Bt. Capt. and A. A. Q. M.....	Paid P. F. Paulsan, for services as interpreter in New Mexico, in 1849.....	18 75
26	Gideon & Co.....	Printing and binding 2,000 copies of "Instruction for Mountain Artillery"....	155 00
26	D. McClelland.....	Engraving, copper, &c., for "Instruction for Mountain Artillery".....	117 04
April 3	A. A. Gibson, Lt. and A. A. Q. M.....	Paid Abner Dohlf and John Shelden, for services as guide in Florida, in 1849..	96 00
17	C. H. Merritt, Lt. and A. A. Q. M.....	Paid for crane for regimental flag in Mexico, in 1848.....	2 50
May 5	G. H. Croswan, Major and Q. M.....	Paid Isaac Leach, Jr., Philadelphia, Pa., for county, state, road and poor tax on United States property, in October, 1848 and 1849.....	25 50
		Henry W. Watts, for professional services in prosecution of a suit of the United States.....	10 00
		Linnard & Brother, for six pair handcuffs.....	14 04
		Bridges & West, for use of two rooms for Army Medical Board, from October 15 to November 10, 1849.....	125 00
7	R. E. Clary, Capt. and A. Q. M.....	Paid Isaac Bridge, for one patent iron safe for use of pay department at New Orleans, in 1817.....	110 00
		Paid J. C. Bergh, for one iron chest, \$90, and 21 specie boxes, \$21, at New Orleans, in 1848.....	111 00
June 3	James M. Hill, Capt. and A. Q. M.....	Funeral expenses of the late Major Thomas Noel, U. S. army.....	40 00
4	S. G. French, Capt. and A. Q. M.....	Paid Benjamin McCullough, for services as guide in Texas, in 1848.....	382 00



July	31	Rice, Hollinshead, & Becker.....	For professional services as counsel for United States, in cases of habeas corpus, in favor of eighteen soldiers at Fort Snelling, in June, 1851.....	200 00	
Sept.	8	M. M. Clark, Capt. and A. Q. M.....	Paid for files of Union newspaper and expenses of freight on boxes.....	34 46	
			Advertising in Union, Intelligence, and National Whig.....	103 65	
			Franklin Peale, for five Buena Vista, Monterey and Palo Alto medals.....	15 60	
			Funeral expenses of the late Lt. C. N. Hagner.....	40 00	
			W. G. Dryden, for services as translator at Santa Fe.....	196 75	
			W. H. Gatchell, clerk of Baltimore city Court, bill of costs in habeas corpus cases.....	69 49	
			J. Wittenberg, copying documents, &c., for Court of Inquiry, convened at Washington in 1849.....	58 29	
			S. A. Keller, clerical services in writing record of proceedings of Court of Inquiry, &c.....	35 00	
			George Templeman, 10 folios Statutes at Large.....	37 00	
			W. S. Williams, making and painting box.....	8 00	
			Henry Hardy, balance of his account as bearer of despatches to Santa Fe...	628 19	
			J. C. Bergh, for an iron safe.....	18 60	
			John Espy, lettering eight books, United States Laws.....	3 00	
	22	C. Alexander.....	Printing sundry blanks, orders, &c., for war department and adjutant general's office, in 1st and 2d quarters, 1851.....	419 42	
Oct.	13	D. McClelland.....	Engraving plates, copper, &c., for "Instruction for heavy artillery".....	1,142 40	
	13	Gideon & Co.....	Printing, binding, &c., 2,000 copies of "Instruction for heavy artillery"....	948 00	
Nov.	1	E. A. Burnside, Lt. and A. A. Q. M.....	Paid C. Carson, R. Fisher, J. L. Keithly, T. Donaldson, Beaver, Delaware spy and hunter, and Logan, Delaware spy and hunter, for services as guides and interpreters in New Mexico, in 1849.....	324 00	
	20	Æneas Mackay, Major and Q. M.....	Paid S. C. Wood, for three days' services as guide.....	6 00	
	20	G. Tallmage, Lt. and A. A. Q. M.....	Paid an Indian guide in 1849.....	4 00	
Dec.	23	Alexander Morrow, Capt. and A. Q. M.....	Paid John Hamilton, services as guide.....	1 50	
				<hr/>	
				\$6,648 98	

P. C. CLAYTON, *Second Auditor.*

TREASURY DEPARTMENT, *Second Auditor's Office, January 6, 1852.*



REPORT  
OF  
THE SECRETARY OF WAR,

WITH INFORMATION

*Relative to the construction of a Military road from Fort Dodge to Dubuque, and the cost of transporting the munitions of war, provisions, &c., used at that Fort, from the Mississippi river.*

JANUARY 13, 1852.

Referred to the Committee on Military Affairs, and ordered to be printed.

WAR DEPARTMENT,  
Washington, January 10, 1852.

SIR: In compliance with the resolution of the Senate, of December 29, 1851, "That the Secretary of War be directed to communicate to the Senate such information as may be on file in the War Department, relative to the construction of a military road from Fort Dodge to Dubuque, in Iowa; and that he inform the Senate what the cost has been for the transportation of the munitions of war, provisions, &c., used at said Fort, from the usual place of deposit upon the Mississippi river;" and,

"That the Secretary of War be also directed to communicate to the Senate a plan and estimate for the construction of a military road from Dubuque to Fort Dodge, and the amount necessary to pay for a survey and estimates for such road," I have the honor to transmit, herewith, reports from the Quartermaster-General and Chief Topographical Engineer, containing the information required.

I have the honor to be, very respectfully, your obedient servant,

C. M. CONRAD,  
Secretary of War.

HON. WILLIAM R. KING,  
President of the Senate.

QUARTERMASTER-GENERAL'S OFFICE,  
Washington, January 17, 1852.

SIR: In compliance with your instructions, requiring a report, under a resolution of the Senate of the United States, of the 29th December, 1851, as to the cost of transporting munitions of war, provisions, &c., used at Fort Dodge, from the usual place of deposit on the Mississippi river, I have the honor to state, that the cost of such transportation amounted, during the last fiscal year, as far as can be ascertained from accounts

Hamilton, print.

received at this office, to six thousand, one hundred and twenty-one dollars, and seven cents.

I return the resolution, and I am, sir, most respectfully your obedient servant,

TH. S. JESUP,  
Quartermaster-General.

The Hon. C. M. CONRAD,  
Secretary of War, Washington City.

BUREAU OF TOPOGRAPHICAL ENGINEERS,  
Washington, January 6, 1852.

SIR: In reply to a resolution of the Senate, of the 29th ultimo, I have the honor to submit:—

1. A copy of a letter from the Honorable Mr. Jones and Honorable Mr. Dodge, of the Senate, dated January 6, 1851.
2. Copy of a letter to Honorable Mr. Jones, dated Dubuque, December 24, 1850, from J. H. Emerson, Esq.
3. Copy of a letter to Honorable Mr. Jones, dated Dubuque, December 24, 1850, from Charles Corking, Esq.
4. Copy of a petition in reference to a road from Dubuque to Fort Clarke, now called Fort Dodge.
5. Copy of a letter to General Jones, dated Dubuque, December 25, 1850, from G. M. Hayden, Esq., enclosing the foregoing petition.
6. Copy of a report from this office, in reference to said road, dated January 7, 1851.

The resolution also desires information as to "what the cost has been for the transportation of the munitions of war, provisions, &c., used at said fort, from the usual place of deposit upon the Mississippi river." As this part of the resolution can best be answered by the Quartermaster's Department, it is respectfully suggested to refer it to that Department for report.

Respectfully, sir, your obedient servant,

J. J. ABERT,  
Colonel Corps Topographical Engineers.

Hon. C. M. CONRAD, Secretary of War.

SENATE CHAMBER UNITED STATES,  
Washington, D. C., January 6, 1851.

SIR: We enclose herewith the petition of several of the most intelligent, respectable, and influential business men of the city of Dubuque, Iowa, praying that you will take steps for the construction of a military road from Dubuque to Fort Clark, all in Iowa. The petition is accompanied by letters written by gentlemen residing at Dubuque, who are well acquainted with the subjects embraced in their letters, and upon whose statements the utmost reliance may be placed. We earnestly hope that you will give the subject your early and favorable attention.

Very respectfully, &c.,

GEORGE W. JONES,  
A. C. DODGE.

Hon. C. M. CONRAD,  
Secretary of War, War Department.

DUBUQUE, IOWA, *December 24, 1850.*

DEAR SIR: Our citizens feel a deep interest in the establishment of a military road from this point to Fort Clark on the Des Moines river.

It is desirable, also, to supply the fort with the necessary stores; the route is direct and the distance much less than from any other point on the Mississippi, being only one hundred and eighty miles, with the certainty of the eastern railroad terminating at this point, making increased facilities from the different points in case of emergency.

The business of Fort Clark is now done by way of St. Louis and Keokuk, at a great expense, which would be saved by the improvement proposed, and a large extent of our best and most desirable State would be made at once available.

Believing that you were instrumental in establishing the post, we trust you may be able to do your constituents a still greater favor by urging upon the proper department the importance of this subject.

Most respectfully yours,

J. H. EMERSON.

General W. JONES,  
*Washington.*

DUBUQUE, IOWA, *December 24, 1850.*

DEAR SIR: It is unnecessary to add a word to what others of our fellow citizens will say to you on the subject of a military road from this place to Fort Clark, on the Des Moines river. You are aware that Fort Clark is situated a little north-of-west of this place, and a road passing through the seats of justice of the counties of Delaware, Buchanan, Black, Hawk, &c., would not only be of immense importance to northern Iowa, but would bring the fort one hundred miles, or more, nearer to the Mississippi river than is Keokuk, the present point of shipment. All the stores, munitions, troops, &c., necessary to the occupation of the fort, are now landed at Keokuk. From Keokuk to Fort Des Moines is two hundred and eight miles, and from Fort Des Moines to Fort Clark is eighty miles of very long measure. This will make two hundred and eighty-eight miles, but from the best information and other data which we can obtain here from surveyors Marsh and others, and from William Morrison, who travelled over the route repeatedly, while selecting the school lands, the distance from Dubuque will not exceed one hundred and seventy miles. These advantages are so obvious to the Government and to the people, that I should hope an appropriation will be made for so important a road without hesitation.

Very respectfully, sir, your obedient servant,

CHARLES CORKING.

Hon. GEORGE M. JONES.

The undersigned citizens of Dubuque and the adjoining counties most respectfully solicit and earnestly request our Honorable members in Congress to obtain of the War Department, the establishment of a military road, com-

mencing at Dubuque and terminating at Fort Clark on the Des Moines river.

M. M. Hayden,  
J. H. Emerson,  
J. M. Marsh,  
George M. Henry,  
Henry S. Hetherington,  
William Donnellan,  
Peter Waples,  
Charles Bogy,  
L. D. Randall,  
J. Sprague,  
Charles Corking,  
Timothy Fanning,  
E. D. Turner,  
S. R. West,  
C. H. Booth,  
F. V. Goodrich,  
E. Langsworthy,

Owen Smith,  
J. E. Wooton,  
B. J. O'Halloran,  
Michael Nolan,  
Patrick Byrne,  
J. J. E. Norman,  
W. J. Sullivan,  
William Roche,  
Francis Mangold,  
J. L. Longworthy,  
A. H. Miller,  
Michael O'Brien,  
John Palmer,  
J. P. Farley,  
Jacob Christman,  
A. Linn,  
Dennis Mahoney.

DUBUQUE, IOWA, *December 23, 1850.*

MY DEAR GENERAL:—Enclosed, please find a petition relating to a military road from this place to Fort Clark, on the Des Moines river.

We are indebted to you for the location of the fort, and hope you may be able to open a road so desirable to both the interests of the country through which it passes, alike to the government in furnishing the necessary supplies. As it now requires hauling by land from Keokuk, a distance of two hundred and eighty miles, while from Dubuque it would be only one hundred and eighty miles, as you will see by referring to the S. F. range, in which the new fort is located. Marsh tells me the Lizard fork of the Des Moines is in range 28 W., S. 89 north.

The trade of the upper Des Moines is of more importance to Dubuque than a score of railroads to Keokuk (in my opinion.)

It is unnecessary for me to say more on this subject, others will most likely write touching the importance of the road, &c.

Most respectfully your obedient servant,

M. M. HAYDEN.

To General W. JONES,  
*Washington City.*

BUREAU OF TOPOGRAPHICAL ENGINEERS,  
*Washington, January 7, 1851.*

SIR: I have the honor to acknowledge your direction to report upon a letter of the 6th instant from the Honorable G. M. Jones and the Honorable A. C. Dodge, of the United States Senate.

The object of this letter, and of its several enclosures, is to have a military road from Dubuque, on the Mississippi, to Fort Clark, on the Lizard fork of the Des Moines.

The best map we have of that country is the one compiled in this office

from the results of Nicollet's expedition, and will be found printed with Nicollet's report, as Senate Document 237, 2d session, 26th Congress..

By this map the distance from Dubuque to Fort Clark is about one hundred and eighty miles, and the distance from Fort Clark to the mouth of the Des Moines about three hundred miles.

This last distance is represented as the usual travelled distance with supplies, making the difference between the two routes—both are land routes—of about one hundred and twenty miles; the route from Dubuque being that much shorter. This fact gives to the Dubuque route great advantages.

The only difference deserving of notice is, that to arrive at Dubuque, the Mississippi has to be ascended about two hundred miles; but as this distance during the season when supplies are forwarded can be passed by steamboats, it reduces a comparison of the difference on this account between the routes to two hundred miles of steamboat navigation and one hundred and twenty miles of land carriage. This fact also gives to the Dubuque route great advantages.

Under all circumstances, therefore, the Dubuque route is much to be preferred, and the making of a road on this route would cost but little more than half for a road on the other route.

Moreover, from general information, for we have no survey of the route, it is believed that the ground from Dubuque to Fort Clark is very favorable for a road; and, in addition to the great saving in distance, it would cost much less per mile than the other route from Keokuk. On all these accounts, if a road be made from either point, it is recommended to be made from Dubuque to Fort Clark.

It is not in my power to give an estimate of the probable cost of the road, as the essential preliminary step of a survey has not been made, nor is there any existing appropriation which could be applied to either the survey or making of the road.

It is, therefore, respectfully suggested that an appropriation, say of two thousand dollars, be made for the survey, location and making of a military road from Dubuque to Fort Clark.

Respectfully, sir, your obedient servant,

J. J. ABERT,

*Colonel Commanding Topographical Engineers..*

Hon. C. M. CONRAD,

*Secretary of War.*









## MESSAGE

FROM

### THE PRESIDENT OF THE UNITED STATES,

COMMUNICATING

*A resolution of the Legislative Council of Canada, expressive of satisfaction for the donations made in aid of the reconstruction of the Library of the Canadian Parliament.*

JANUARY 9, 1852.

Ordered to lie on the table, and be printed.

WASHINGTON, January 6, 1852.

*To the Senate of the United States :*

I transmit to the Senate the copy of a resolution adopted by the Legislative Council of Canada, together with the copy of the note by which the resolution was communicated to this Government, expressing the satisfaction of that council at receiving intelligence of certain donations in aid of the reconstruction of the Library of the Canadian Parliament.

MILLARD FILLMORE.

LEGISLATIVE COUNCIL,

Wednesday, August 20, 1851.

*Resolved, That this House receives with much satisfaction, the intelligence of the munificent donations which have been made in aid of the reconstruction of the Parliamentary Library, by the Houses of Congress of the United States, the legislature of the State of Vermont, and the legislature of the State of New York.*

BRITISH LEGATION,

Washington, October 30, 1851.

SIR : The Governor-General of Canada has forwarded to her Majesty's Legation, the copy, which I have the honor to enclose herewith, of a resolution adopted by the legislative council of that province, when the provincial Parliament was last in session, expressive of the satisfaction with which they have received the intelligence of the munificent donations which have been made by the Congress of the United States, by the legislature of the

Hamilton, *press.*

State of Vermont, and by the legislature of the State of New York, in aid of the reconstruction of the Library of the Canadian Parliament.

I have accordingly to request that you, sir, will have the goodness to cause the above resolution to be communicated to the Congress of the United States, as well as to the legislatures of Vermont and New York.

I avail myself of this opportunity to renew to you, sir, the assurance of my highest consideration.

JOHN F. CRAMPTON.

Hon. DANIEL WEBSTER, &c., &c., &c.

REPORT  
OF  
THE SECRETARY OF WAR,  
SHOWING

*The persons employed in that department, other than officers of the army,  
during the year 1851.*

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JANUARY 19, 1852.

Ordered to be printed.

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WAR DEPARTMENT,  
Washington, January 14, 1852.

SIR: In compliance with acts approved April 20, 1818, and August 26, 1842, and a resolution of the House of Representatives of the 13th of January, 1846, I have the honor to transmit, herewith, lists of clerks and other persons employed in this department, other than officers of the army, during the year 1851.

Very respectfully, your obedient servant,

C. M. CONRAD,

*Secretary of War.*

Hon. WM. R. KING,  
*President of the Senate.*

*Statement showing the names of all clerks and other persons employed in the Subsistence Bureau during the year 1851, the State from whence appointed, the time when employed and the amount paid to each.*

Name and employment.	State from whence appointed.	Time when employed.	Amount paid to each.
Richard Gott, chief clerk.....	Maryland.....	Whole year...	\$1,600 00
Wm. J. Smith, clerk.....	New York.....	.....do.....	1,200 00
C. G. Wilcox, clerk.....	District of Columbia.....	.....do.....	1,000 00
C. Munroe, clerk.....	.....do.....	.....do.....	1,000 00
W. H. Watson, clerk.....	.....do.....	.....do.....	1,000 00
J. Schwartz, messenger.....	Wisconsin.....	.....do.....	500 00

NOTE.—The clerks and messenger have been usefully employed, and in my opinion the services of any of them cannot be dispensed with, without detriment to the public service.

GEO. GIBSON, C. G. S.

OFFICE OF COMMISSARY GENERAL OF SUBSISTENCE,  
Washington, January 2, 1852.

PAYMASTER GENERAL'S OFFICE,  
January 1, 1852.

SIR: I have the honor to report the number, names and salaries of the persons employed in this office in the year 1851, with the sums paid each, viz :

Names.	Time paid for.	Regular salaries.	Amount paid.	Places of residence at time of appointment.
Nathaniel Frye, chief clerk..	Jan. 1 to Dec. 31	\$1,700	\$1,700	Maine.
Wm. D. Bull.....clerk.....	.....do.....	1,400	1,400	District of Columbia.
Edmd. H. Brooke.....do.....	.....do.....	1,150	1,150	Maryland.
Richard S. Cox.....do.....	.....do.....	1,150	1,150	District of Columbia.
Thomas Cromwell.....do.....	.....do.....	1,000	1,000	Maryland.
Norman B. Smith.....do.....	.....do.....	1,000	1,000	New York.
Henry Robinson.....do.....	.....do.....	1,000	1,000	District of Columbia.
Wm. W. Young.....do.....	.....do.....	800	800	South Carolina.
Robt. O. Knowles, messenger.	.....do.....	700	700	District of Columbia.

The above-mentioned persons have all been usefully employed, and their services cannot be dispensed with without detriment to the public service; nor is the removal of any, and the appointment of others in their stead, required for the despatch of business.

I am, very respectfully, sir, your most obedient servant,

BENJ. F. LARNED,

*Acting Paymaster General.*

HON. C. M. CONRAD, *Secretary of War.*

*List of clerks and messenger employed in the office of Army Clothing and Equipage during the year commencing January 1, and ending December 31, 1851.*

Name and office.	Amount of compensation.	Time employed.	Residence when appointed.	Amount paid.
James Warrin, chief clerk...	\$1,550 00	The whole year...	Pennsylvania.	\$1,550
Edwin North, clerk.....	1,000 00	.....do.....	.....do.....	1,000
George W. North, clerk.....	950 00	.....do.....	.....do.....	950
Wm. P. Fox, messenger.....	540 00	.....do.....	.....do.....	540

The persons named in this list have been actively and usefully employed. None can be dispensed with without detriment to the service; and it is not considered that the removal of any of them, and the appointment of others in their stead, is required for the better despatch of the business of this office.

G. H. CROSMAN,  
*Major and Quartermaster.*

OFFICE OF ARMY CLOTHING AND EQUIPAGE,  
*Philadelphia, January 3, 1852.*

Major General T. S. JESUP,  
*Quartermaster General, Washington.*

*List of persons employed in the office of the Surgeon General during the year 1851, their occupation, time employed and compensation, and State or Territory of their residence at the time of their appointment.*

Names.	Occupation.	Time employed.	Amount of salary.	State or Territory of their residence at the time of their appointment.
R. Johnson.....	Chief clerk.....	January 1 to December 31, 1851..	\$1,150 per annum ...	City of Washington, D. C.
A. Balmain.....	Clerk.....	Do.....do.....	1,000...do.....	Do.
P. M. Henry.....	Do.....	Do.....do.....	1,000...do.....	North Carolina.
J. H. Collins.....	Messenger.....	Do.....do.....	500...do.....	City of Washington, D. C.

The clerks and messenger in the Surgeon General's office have been usefully employed, and no person in the office "can be dispensed with without detriment to the public service;" and the prompt despatch of business "does not require the removal of any of them and the appointment of others in their stead."

TIL. LAWSON, *Surgeon General.*

SURGEON GENERAL'S OFFICE, *January 2, 1852.*



*List of clerks and messenger employed in the Quartermaster General's office in the year ending December 31, 1851.*

Names.	Annual compens'n.	Period of service.	Residence when appointed.	Amount.
Wm. A. Gordon, chief clerk.	\$1,600	The whole year . . . .	Maryland . . . .	\$1,600 00
James Goszler . . . . . clerk.	1,200	.....do. ....	Dist. Columbia	1,200 00
Wm. L. Bailey . . . . . do..	1,000	.....do. ....	.....do. ....	1,000 00
Thos. J. Abbott . . . . . do..	1,000	.....do. ....	Alabama . . . .	1,000 00
J. D. Ward . . . . . do..	1,000	Jan. 1 to Nov. 23 . . .	North Carolina	896 78
M. Markland . . . . . do..	1,000	The whole year . . . .	Kentucky . . . .	1,000 00
J. C. Goolrick . . . . . do..	1,000	.....do. ....	Virginia . . . .	1,000 00
John S. Moore . . . . . do..	1,000	.....do. ....	Dist. Columbia	1,000 00
S. D. Finckel . . . . . do..	1,000	.....do. ....	.....do. ....	1,000 00
Chas. Wirgman . . . . . do..	1,000	Jan. 1 to March 31 . .	Maryland . . . .	250 00
Thos. C. King . . . . . do..	1,000	The whole year . . . .	New York . . . .	1,000 00
M. Schermerhorn . . . . do..	1,000	April 11 to Dec. 31 . .	.....do. ....	721 94
R. W. M. Johnston . . . do..	1,000	Dec. 6 to Dec. 31 . . .	North Carolina	70 65
George Phelps, messenger .	500	The whole year . . . .	Dist. Columbia	500 00

The persons named on this list have been actively and usefully employed. It is not thought that any of them can be dispensed with, without detriment to the public service, or that the removal of any of them, and the appointment of others in their stead, is required for the better transaction of the business of the office.

TH. S. JESUP,  
*Quartermaster General.*

QUARTERMASTER GENERAL'S OFFICE,  
*Washington City, January 5, 1852.*

*List of persons employed in the office of the Commanding General of the Army for the year 1851.*

Names.	Where employed.	Compensation.	Residence when appointed.
John Walker, clerk . . . . .	Washington, D. C. . . . .	\$1,000 00	Army.
John Walters, messenger . . . . .	.....do. ....	500 00	Do.

The above-named persons have been usefully employed during the period specified. The services of none of those now employed could be dispensed with, without detriment to the public service; nor is the removal of any, and the appointment of others in their stead, required for the better despatch of public business.

Respectfully submitted:

WINFIELD SCOTT.

HEADQUARTERS OF THE ARMY,  
*Washington, D. C., January 15, 1852.*

Hon. C. M. CONRAD, *Secretary of War.*

*List of clerks and other persons employed in the office of the Secretary of War during the year 1851, with the time each was actually employed, the sum paid to each, and the place of his residence at the time of his appointment.*

Name and office.	Time employed.	Compensation.	Residence when appointed.
G. T. M. Davis...chief clerk..	January 1 to March 4..	\$350 00	District Columbia.
John Potts.....do.....	Mar. 5 to December 31..	1,650 00	Do.
A. Campbell.....clerk.....	The whole year.....	1,600 00	Pennsylvania.
N. Rice.....do.....	.....do. ....	1,400 00	Massachusetts.
Charles Calvert.....do.....	.....do. ....	1,400 00	Army.
John D. McPherson..do.....	.....do. ....	1,400 00	District Columbia.
John Potts.....do.....	January 1 to March 4..	175 00	Do.
C. Lanman.....do.....	January 1 to Sept. 30..	750 00	Do.
James D. Kerr.....do.....	The whole year.....	1,000 00	Virginia.
Wm. B. Lee.....do.....	Mar. 15 to December 31	797 22	Boston, Mass.
J. D. Newcomb.....do.....	Nov. 4 to December 31	157 60	Springfield, Mass.
H. H. Widdecomb, messenger.	The whole year.....	650 00	District Columbia.
F. Datcher.....do.....	.....do. ....	400 00	Do.

The above-named persons have been usefully employed during the periods specified. The services of none of those now engaged could be dispensed with, without detriment to the public service; nor is the removal of any, and the appointment of others in their stead, required for the better despatch of public business.

WAR DEPARTMENT, January 14, 1852.

*List of clerks and messenger employed in the Adjutant General's office during the year ending December 31, 1851, submitted in conformity to the 11th section of the act of August 26, 1842, and the resolution of the House of Representatives, January 13, 1846.*

Names of clerks.	Whence appointed.	Annual salary.	Amount paid to each.	Time employed.
James L. Addison.....	Maryland .....	\$1,200	\$900 00	The whole year—from January 1 to September 10.
Do .....	do .....	1,400	361 11	from September 11 to December 31.
John G. Law.....	Army.....	1,150	862 50	The whole year—from January 1 to September 10.
Do .....	do.....	1,200	302 78	from September 11 to December 31.
James H. Lowry.....	District of Columbia....	1,000	750 00	The whole year—from January 1 to September 10.
Do .....	do.....	1,150	295 83	from September 11 to December 31.
A. F. Wilcox.....	Connecticut .....	1,000	1,000 00	The whole year.
L. R. Hamersly.....	Pennsylvania.....	1,000	375 00	From January 1 to May 15.
Joseph S. Brown.....	Indiana .....	1,400	1,400 00	The whole year.
S. Brintnall.....	New York .....	1,400	1,022 22	From January 1 to September 10.
R. M. Hanson .....	District of Columbia....	1,000	1,000 00	The whole year.
Charles H. Lee.....	Virginia .....	800	300 00	The whole year—from January 1 to May 15.
Do .....	do.....	1,000	625 00	from May 16 to December 31.
Samuel S. Randall.....	New York .....	1,000	194 77	From October 21 to December 31.
Levi Davis.....	District of Columbia....	800	500 00	From May 16 to December 31.
Charles Baker, messenger.....	Massachusetts .....	500	500 00	The whole year.

The current business of this office, stated and incidental, will not justify a reduction of the number of clerks at this time, as now authorized by law; nor is the removal of any of them, and the appointment of others in their stead, necessary for the better despatch of business. The gentlemen have been properly and efficiently employed.

Respectfully submitted :  
R. JONES, *Adjutant General.*

ADJUTANT GENERAL'S OFFICE, Washington, January 12, 1852.  
HON. C. M. CONRAD, *Secretary of War.*

*List of clerks and messenger employed in the office of the Chief Engineer during the year 1851.*

Names.	Residence when appointed.	Time employed.	Salary per annum.	Amount paid.
Francis N. Barbarin.....clerk.	New Jersey.....	All the year.....	\$1,200	\$1,200
James C. Wilson.....do..	Dist. Columbia.....	.....do .....	1,150	1,150
James Eveleth.....do..	Virginia.....	.....do .....	1,250	1,250
Richard Cruikshank.....do..	Dist. Columbia.....	.....do .....	1,000	1,000
Robert B. Fowler.....do..	.....do .....	.....do .....	800	800
O. B. Denham, messenger.....	.....do .....	.....do .....	500	500
				5,900

The above persons have all been usefully employed during the year 1851; the services of none of them can be dispensed with without detriment to the public service; and the better despatch of public business does not require the removal of any and the appointment of others in their stead.

JOS. G. TOTTEN,  
Bt. Brig. Gen., Chief Engineer.

ENGINEER DEPARTMENT, *Washington, December 31, 1851.*

*List of clerks and messenger employed in the Ordnance Office during the year 1851.*

Names.	Residence when appointed.	Time employed.	Amount paid.
George Bender.....chief clerk..	Washington, D. C.....	Whole year...	\$1,200 00
Morris Adler.....clerk..	Georgetown, D. C.....	.....do .....	1,150 00
Samuel Rainey.....do..	.....do .....	.....do .....	1,000 00
Wm. McDermott.....do..	Washington, D. C.....	.....do .....	1,000 00
J. P. Keller.....do..	.....do .....	.....do .....	1,000 00
A. Herbert.....do..	Maryland.....	.....do .....	1,000 00
Chas. Slemmer.....do..	Pennsylvania.....	.....do .....	1,000 00
N. W. Fales.....do..	Maine.....	.....do .....	800 00
N. Mullikin, messenger.....	Maryland.....	.....do .....	500 00

ORDNANCE OFFICE, *January 2, 1852.*

A. K. CRAIG, Colonel Ordnance.

*Statement showing the names of the persons employed in the Bureau of Topographical Engineers during the year 1851, the time each was employed, and the amount of compensation paid them respectively.*

Names and office.	Period of service.	Compensat'n per annum.	Amount paid.	Place of residence when appointed.
Geo. Thomson, chief clerk.	Jan. 1 to Dec. 31	\$1,400	\$1,400	Georgetown, D. C.
Chas. Tschiffely.....clerk.....do.....	.....do.....	1,000	1,000	Washington, D. C.
J. R. Dorsey.....do.....do.....	.....do.....	1,000	1,000	.....do.....
Philip Harry.....do.....do.....	.....do.....	1,000	1,000	.....do.....
Jas. Lawrence, messenger.....do.....	.....do.....	500	400	.....do.....
Geo. Thompson, laborer.....do.....	.....do.....	500	400	.....do.....

All the persons embraced in this statement have been usefully employed, and their services cannot be dispensed with without detriment to the public service; nor is the removal of any, and the appointment of others in their stead, required for the better despatch of business.

J. J. ABERT, *Col. Corps Top. Engineers.*

BUREAU TOPOGRAPHICAL ENGINEERS, *January 1, 1852.*

Ex.—2.



REPORT  
OF  
THE SECRETARY OF WAR,

SHOWING

*The expenses of the national armories, and the number of arms and appendages made and repaired thereat, during the year ending 30th June, 1851.*

JANUARY 19, 1852.

Ordered to be printed.

WAR DEPARTMENT,  
Washington, January 14, 1852.

SIR: Pursuant to an act approved April 2d, 1794, I have the honor to submit, herewith, a statement of the expenses of the national armories, and of the number of arms and appendages made and repaired thereat, during the fiscal year ending 30th June, 1851.

Very respectfully, your obedient servant,

C. M. CONRAD,

*Secretary of War.*

Hon. W. R. KING,  
*President of the Senate.*

*Statement of the expenses of the national armories, and of the number of arms and appendages made and altered thereat, during the fiscal year which ended June 30, 1851.*

Armories.	Expenditures.						Number of arms and appendages made and altered.											
	For repairs and improvements, including buildings, dams, fences, &c., &c.	For lands purchased under special appropriations.	For materials and workmanship in manufacture of arms and appendages, tools and machines, including salaries and all incidental expenses.	For altering flint-lock arms to percussion, and making components for like alterations elsewhere—paid from appropriations for ordnance and ordnance stores.	Total expenditures.	Percussion muskets.	Percussion rifles.	Percussion musketoons.	Ball screws.	Wipers.	Screw-drivers.	Spring vices.	Bullet-moulds.	Flint-lock muskets altered to percussion.	Made for altering arms at other places from flint-lock to percussion.			
															Hammers.	Cones.	Screw-drivers.	
	Dolls. cts.	Dolls.	Dolls. cts.	Dolls. cts.	Dolls. cts.													
Springfield ....	21,028 16	8,500	184,202 80	57,577 37	271,308 33	21,000	.....	2,000	.....	.....	78,292	.....	.....	57,272	41,682	119,757	14,026	
Harper's Ferry.	62,399 44	.....	175,641 25	14,048 04	252,088 69	11,100	8,050	.....	1,176	13,563	6,411	2,095	195	.....	34,608	44,829	46,832	
Total.....	83,427 60	8,500	359,844 05	71,625 37	523,397 02	32,100	8,050	2,000	1,176	13,563	84,703	2,095	195	57,272	76,190	164,686	61,458	

ORDNANCE OFFICE, Washington, January 14, 1852.

A. K. CRAIG, Colonel of Ordnance.



## MESSAGE

FROM

### THE PRESIDENT OF THE UNITED STATES,

COMMUNICATING

*A report from the Secretary of State, urging an early appropriation to pay the instalment due to Mexico under the treaty of Gaudalupe Hidalgo.*

JANUARY 20, 1852.

Read, referred to the Committee on Finance, and ordered to be printed.

WASHINGTON, January 19, 1852.

*To the Senate and House of Representatives of the United States :*

I transmit to Congress a report from the Secretary of State, accompanied by a letter to him from the contractors for paying the instalment of Mexican indemnity due on the 31st of May next, and respectfully invite attention to the subject.

MILLARD FILLMORE.

DEPARTMENT OF STATE,  
January 19, 1852.

I lay before the President another letter from the contractors for the payment of the remaining instalment due to Mexico under the treaty of Guadalupe Hidalgo.

This affair appears to have become urgent. The contractors would seem to have had a right to expect that the proper appropriation would have been made by Congress, in such season as to have given them a reasonable time to have made arrangements for the fulfilment of their undertaking.

For the last payment, which fell due on the 31st of May last, an appropriation was made on the 25th day of September, 1850, which gave time for the necessary arrangements. A bill for making an appropriation for the instalment now to fall due in May next, passed the House of Representatives on the 26th day of February last, but failed to be considered in the Senate, as it is understood, for want of time.

The honor of the country requires that provision should be made to meet this payment with punctuality. And it is apparent that inconvenience and loss may probably ensue if the appropriation be longer delayed.

Respectfully submitted,

DANL. WEBSTER.

*To the PRESIDENT of the United States.*

Hamilton, print.

Boston, January 14, 1852.

SIR : The undersigned had the honor to address to you on the 26th ult. a letter urging the importance of the immediate passage of the appropriation bill for the payment of the instalment of the indemnity due to Mexico on the 31st of May next.

In the remarks made in Congress, when the bill was reported, they were alluded to in such a manner as makes it proper that they should state their position towards the payment in justice to themselves ; and also that the passage of the bill, any delay in which may occasion great loss to the Government, should not be impeded by needless discussion.

The undersigned had ceased to regard themselves as contractors, as the delay that had occurred was such as to render it impossible for them to go on and make the payment, for the absence of such needful and timely appropriation as was contemplated by both parties in making the contract, and without which its execution became impracticable ; awaiting, however, the action of Congress and the intentions of the Government, and prepared to aid in carrying them out when occasion for their services should offer. In this position, and knowing from their own experience the importance of time to make the funds in Mexico, and the great loss to which the Government might be subjected by prolonged delay, they addressed to you their letter of 26th ult., that the matter might have the attention of the Government.

To show clearly the effect of this delay, and to prevent the possibility of any misconception of their present position, the undersigned beg to ask your attention to the following statement of the result of the last payment made by them.

To make the required funds their agent proceeded to Mexico in October, and was occupied from that time until June following in disposing of his exchange on England, France, and the United States, and was finally obliged to borrow three hundred thousand dollars on his bills, to be negotiated afterwards, in order to complete the payment on the 31st of May. Thus it took nine months to draw the bills without depressing the market so as to make a loss.

The result of this immense exchange operation, with all its attendant risks, was a profit of about one per cent. on the amount ; and the contractors made no other profit except what resulted from loaning a portion of their own funds (not advanced by the United States) to the government of Mexico and to merchants in Mexico at the current rates of interest. Adding the interest received for their own money to the profit in the exchange, as stated above, the net result was a division of three and one-third per cent. among the three contracting houses. This comprises the whole of their profits, direct or indirect, in connexion with the business.

The United States Government made no payment to the contractors, except in reimbursement of payments made by them in Mexico from their own moneys, and on presentation of duly authenticated receipts at Washington. Nor were any moneys received by the contractors from the Government prior to the first of March ; and the last payment, of about two millions of dollars, was not made to them until the 27th of June last ; so that in fact the average of payments to them fell about 15th of May.

You will perceive that the accumulation of funds, which required last year nine months for its completion, cannot now be made in the short space of time that remains without loss to the Government ; and Congress ought to

be fully aware of the responsibility it assumes by increasing the delay which may render compliance with the treaty stipulations a matter of great loss. These difficulties were urgently represented by the undersigned at the time the appropriation bill was pending at the last session.

It will be perceived from the foregoing that the contractors made all the payments in Mexico out of their own funds, and were afterwards reimbursed in the United States, at a date averaging the 15th May ; and the last and largest payment by the United States to the contractors, of two millions of dollars, was not made until the 27th of June, nearly one month after they had paid the full instalment to Mexico.

Any statements that have been made with regard to them at variance with the above facts, or implicating them in any way in the purchase of bonds for the purpose of speculating on the payment, or any other indirect transaction whatever, are an entire fabrication.

No consideration would have induced them to depart from the full performance of every thing implied in the strict interpretation of their undertaking.

We have the honor to be, sir, with great respect, your obedient servants,  
**BARING, BROTHERS, & CO.,**  
by T. W. WARD, *Attorney.*  
**HOWLAND & ASPINWALL,**  
**CORCORAN & RIGGS.**

To Hon. DANL. WEBSTER,  
*Secretary of State.*



## MESSAGE

FROM

### THE PRESIDENT OF THE UNITED STATES,

COMMUNICATING

*The correspondence between the Department of State and the United States Minister at Paris, respecting the late political occurrences in France.*

JANUARY 21, 1852.

Read, referred to the Committee on Foreign Relations, and ordered to be printed.

WASHINGTON, January 20, 1852.

*To the Senate and House of Representatives of the United States.*

I communicate to both Houses of Congress, a report from the Department of State, containing copies of the correspondence which has taken place between that Department, and the Minister of the United States in Paris, respecting the political occurrences which have recently taken place in France.

MILLARD FILLMORE.

DEPARTMENT OF STATE,  
Washington, January 19, 1852.

I have the honor to lay before the President the correspondence which has taken place between this Department and the Minister of the United States in Paris, respecting the important events which have occurred in France since the first of last month, for his consideration and disposition.

DANL. WEBSTER.

To the PRESIDENT.

*Mr. Rives to Mr. Webster.*

[No. 115.]

LEGATION OF THE UNITED STATES,  
Paris, December 3, 1851.

SIR: The denouement towards which events have been rapidly tending for some weeks past, though no one was able to foresee the precise shape it would take, burst upon Paris yesterday morning. At an early hour a decree of the President was placarded in the streets, by which he assumes to dissolve the National Assembly and the Council of State, declaring universal suffrage to be re-established, convoking the people in their primary assemblies for the third week of the present month, and proclaiming martial law

Hamilton, printer.

over the whole extent of the first military division of France, of which Paris is the centre. The palace of the National Assembly was surrounded by troops, so as to prevent the entry of members ; and considerable bodies of troops were also stationed at all the principal points of communication.

The decree of the President was accompanied by a proclamation addressed to the people, in which he charges the Assembly with having meditated plots against the public peace, as well as against the authority he himself holds directly from the nation, announcing that he had therefore dissolved it, and now appealed to the whole people as judge between him and it. He lays down the basis of a new constitution, of which the fundamental points are to be, a responsible chief elected for ten years, ministers depending upon the executive power, a council of state to digest and propose laws, a legislative body to discuss and vote them, and a second assembly or senate, composed of the most eminent men, to act as a balancing power and as guardian of the constitution and the public liberties. Upon these principles as the outline of a political regime, borrowed from that founded by the first consul at the beginning of the century, he invites the people to pronounce their suffrages, and pledges himself to abide by their decision. At the same time he addressed a proclamation to the army, calling upon them to respect and to cause to be respected the free exercise of the national sovereignty, of which he declares himself to be the legitimate representative. Copies of these documents, and of other public acts intended to give effect to them, will be found in the number of the *Moniteur* herewith enclosed.

Several of the leading members of the National Assembly were arrested at their houses in the night between the 1st and 2d instant, and were immediately sent to the fortress of Vincennes, in the vicinity of Paris. This morning it is reported they have been transferred to the more distant prison of Ham. Among them are Generals Changarnier, Cavaignac, Lamoricière and Bedeau, Colonel Charras, two of the Questeurs of the Assembly, Messieurs Baze and Le Flo, Monsieur Theirs, Monsieur Roger (du Nord), &c., &c. About two hundred of the members of the Assembly (not having been able to meet in the usual place of holding their sessions) collected at the mayoralty of the tenth arrondissement, and after organizing themselves under the presidency of Monsieur Daru, one of the vice presidents of the body, were proceeding to adopt a decree of forfeiture against the President, when they were arrested by a military detachment and conducted to a *caserne* or barracks, where they were kept under surveillance during the night.

Paris has been almost as tranquil during the progress of these astounding events as in its ordinary daily aspect ; and if it and the country should continue so, the fact must be considered to be conclusive proof of the little attachment the nation has to its constitution, as well as of the little sympathy which exists between it and the Assembly, whose late proceedings, it cannot be disguised, have greatly lessened the influence and consideration of that body with the people. Of the final result, however, of the extraordinary measures which have been pursued here, and of the degree of acceptance they may find with the nation, it is yet altogether too soon to form an opinion. I hasten to communicate them to you, almost in the moment of their occurrence, that I may be the more sure of this despatch reaching you by the pending steamer of the 6th instant.

I have the honor to be, with great respect, your most obedient servant,

W. C. RIVES.

HON. DANIEL WEBSTER,  
*Secretary of State.*

*In the name of the French People, the President of the Republic decrees :*

Article 1. The National Assembly is dissolved.

Article 2. Universal suffrage is re-established. The law of the 31st of May is abrogated.

Article 3. The French people are convoked in their respective districts from the 14th to the 21st of December.

Article 4. The state of siege is decreed in all the extent of the military division.

Article 5. The Council of State is dissolved.

Article 6. The Minister of the Interior is charged with the execution of the present decree.

Given at the Palace of the Elysée, the 2d December.

LOUIS NAPOLEON BONAPARTE.

The Minister of the Interior, DE MORNY.

The following proclamation of the President to the people was also placarded, headed "Appeal to the People."

Frenchmen ! The present situation cannot last longer. Every day which passes aggravates the dangers of the country. The Assembly, which ought to be the firmest support of order, has become a centre of conspiracies. The patriotism of three hundred of its members has not been able to check its fatal tendencies. Instead of making laws for the general interest, it forges arms for civil war ; it attacks the power which I hold directly from the people ; it encourages all bad passions ; it compromises the repose of France. I have dissolved it, and I make the people judge between it and myself.

The Constitution, you know, was made with the view of enfeebling in advance the power that you were about to confide to me. Six millions of suffrages were a striking protest against it, and yet I have faithfully respected it. Provocations, calumnies, and outrages have found me impassible. But now that the fundamental compact is no longer respected, even by those who incessantly invoke it, and that men who have already ruined two monarchies wish to tie my hands in order to overthrow the Republic, my duty is to baffle their perfidious projects, to maintain the Republic, and to save the country by invoking the solemn judgment of the only Sovereign I acknowledge in France—the people.

I make, then, a loyal appeal to the whole nation, and I say to you, if you wish to continue the state of disquietude which degrades us and compromises our future, choose another in my place, for I will no longer retain a government, which is powerless to do good, which renders me responsible for acts I cannot prevent, and binds me to the helm when I see the vessel driving towards the abyss. If, on the contrary, you have confidence in me, give me the means of accomplishing the great mission which I hold from you.

This mission consists in closing the era of revolutions by satisfying the legitimate wants of the people, and protecting them against subversive passions. It especially consists in creating institutions which shall survive men, and which are the foundations on which something durable can be placed.

Persuaded that the instability of the government and the preponderance of a single Assembly are permanent causes of trouble and discord, I submit

to your suffrages the following fundamental bases of a constitution, which assemblies will develop at a later period :

1. A responsible Chief named for ten years.
2. Ministers dependent upon the Executive power alone.
3. A Council of State, composed of the most distinguished men, preparing laws, and maintaining their discussion before the legislative body.
4. A Legislative Body, discussing and voting the laws, named by universal suffrage, without scrutinizing the list, which violates the electoral principle.

5. A Second Assembly, composed of all the distinguished men of the country—a preponderating power, guardian of the fundamental compact, and of the public liberties. This system, created by the first consul at the commencement of the century, has already given to France repose and prosperity; it would still guaranty them. Such is my deep conviction. If you share in it, declare it by your votes. If, on the contrary, you prefer a Government without force, monarchical or republican, taken from I know not what past, or from what chimerical future, reply in the negative. Thus, then, for the first time since 1804, you will vote with your eyes open, knowing for whom and for what you are voting. If I do not obtain the majority of your votes, I shall call for the meeting of a new Assembly, to whom I will deliver the mandates I have received from you. But if you believe in the cause of which my name is the symbol—that is, France regenerated by the revolution of '89 and organized by the Emperor—if you believe that cause to be still yours, proclaim it by consecrating the powers I ask of you. Thus France and Europe will be preserved from anarchy; obstacles will be removed; all rivalries will have disappeared; for all will reflect on the decision of the people—the decree of Providence.

Given at the Palace of the Elysée, this 2d day of December.

LOUIS NAPOLEON BONAPARTE.

The following is the proclamation to the army, headed “Proclamation of the President of the Republic to the Army:”

Soldiers! Be proud of your mission—you will save the country; for I count on you not to violate the laws, but to cause to be respected the first law of the country—national sovereignty, of which I am the legitimate representative.

For a long time you have suffered, like me, by the obstacles which opposed themselves both to the good I wished to do you, and to the demonstrations of your sympathy in my favor. These obstacles are broken down, (*brisées*.) The Assembly has endeavored to attack the authority which I hold from the whole nation. It has ceased to exist.

I make an honest appeal to the people and the army, and I say to them, “Either give me the means of assuring your prosperity, or choose another in my place.”

In 1830, as in 1848, you were treated as if conquered, (*en vaincus*.) After having branded your heroic disinterestedness, you were not considered worthy of having your sympathies and your wishes consulted, and yet you are the *élite* of the nation. To-day, in this solemn moment, I am resolved that the army shall be heard.

Vote then freely as citizens. But as soldiers do not forget that the passive observance of the orders of the chief of the Government is the rigorous duty of the army, from the general down to the soldier. It is for me,



responsible for my actions before the people and before posterity, to take the measures which seem to me indispensable for the public good.

As to you, remain immovable within the rules of discipline and honor. Aid, by your imposing attitude, the country to manifest its will in calm and reflection. Be ready to repress any attack on the free exercise of the sovereignty of the people.

"Soldiers, I do not speak to you of the souvenirs which my name recalls. They are engraved in your hearts. We are united by indissoluble ties; your history is mine. There is between us in the past, community of glory and misfortune; there will be in the future, community of sentiments and of resolutions for the repose and grandeur of France.

Given at the Palace of the Elysée, this 2d December.

LOUIS NAPOLEON BONAPARTE.

The following is the "Proclamation of the Prefect of Police to the inhabitants of Paris :"

The President of the republic, by a courageous initiative, has just baffled the machinations of parties, and put an end to the agony of the country. It is in the name of the people, for their interest, and for the maintenance of the republic, that the event has been accomplished. It is to the judgment of the people that Louis Napoleon Bonaparte submits his conduct.—The grandeur of the act will make you sufficiently understand with what imposing and solemn calm the free exercise of popular sovereignty should be manifested. To-day, then, as yesterday, let order be our flag; let all good citizens, animated like me by the love of the country, afford me their co-operation with the firmest resolution.

Inhabitants of Paris: Have confidence in him whom six millions of votes raised to be the first magistrate of the country. When he calls on the whole people to express its will, the factious alone can wish to throw an obstacle in the way. Any attempt at disorder will therefore be promptly and inflexibly repressed.

DE MAUPAS.

PARIS, *December 2.*

The following circular was addressed to the commissaries of police by the Prefect :

Monsieur le Commissaire: The more circumstances become serious, the more important do your functions also become. Watch with courage and unflinching energy for the purpose of supporting and maintaining the public tranquillity. Do not tolerate the slightest assemblage on any point of the capital; do not permit any meeting, the object of which may appear to you to be suspicious. Let no attempt at disturbance take place without immediately putting a stop to it by inflexible measures of repression. I rely on your devotedness; rely on my support.

DE MAUPAS.

*Mr. Rives to Mr. Webster.*

[No. 116]

LEGATION OF THE UNITED STATES,  
Paris, December 4, 1851.

SIR: I communicated to you yesterday the leading acts of the extraordinary *coup d'état* by which the constitution of the country had, the day before, been overthrown. At that time no overt resistance had been manifested by any portion of the population of Paris. In the course of yesterday, however, some partial attempts were made under the lead of a few members of the national assembly, belonging to the section denominated the *mountain*, to organize a popular resistance. Barricades were formed in one or two of the Faubourg Saint Antoine, which were immediately attacked and carried by the military. One member of the assembly, Monsieur Baudin, was killed, and two others, Messieurs Madier Moubjau and Schoelcher, were wounded.

These incidents have naturally created a good deal of excitement among the people, and may lead to further demonstrations of resistance. In the mean time, the measures taken by the government to repress these attempts are of the most summary character. An *arrêté* of the minister of war is published this morning, declaring that any person taken in the act of constructing or defending a barricade, or with arms in his hands, shall be subjected to the *most rigorous laws of war*, and another appears in the name of the prefect of police, prohibiting all assemblages, seditious cries, and the reading in public or placarding of any political writings, under the summary procedure incident to a *state of siege* as proclaimed by the President's decree of the 2d instant. The high court of Justice, whose duty it is made by the constitution to meet for the purpose of judging the President as soon as he shall have attempted to dissolve, prorogue or otherwise impede the functions of the national assembly, was itself dissolved by a commissioner of police, attended by a military escort, the moment it was constituted; and to-day it is said that the court of cassation, the highest tribunal of ordinary civil and criminal jurisdiction has been prevented, by like summary means, from holding its sessions.

The press is also subjected to such restraints that only seven or eight journals now appear of the large number which was before published in Paris, and them, with the exception of the two or three which are devoted to the support of the President, merely register the decrees and other acts of the government, or such articles as are especially authorized by the police. Placed as Paris thus is, under the absolute regime of a *state of siege*, it is exceedingly difficult to arrive at a correct knowledge of what is passing, either here or in the departments, beyond the immediate sphere of one's own observation. We must, therefore, await the further progress of events to be able to form an intelligent opinion of the chances of success the President may have in the high-handed and illegal career on which he has entered.

Registers were opened yesterday in Paris for receiving the votes of the army on the issue which the President has presented to the country. You will perceive from the decree herewith enclosed that the proposition on which the army and the people are invited to vote, affirmatively or negatively, is conceived in the following general terms. "The French people desire the maintenance of the authority of Louis Napoleon Bonaparte, and delegate to him the powers necessary to make a constitution on the bases proposed in his proclamation of the 2d December, 1851."

It is said that the votes of the army given yesterday, so far as they are

yet known, were pronounced unanimously in favor of this formula; such a result was naturally to be expected from the principle of *passive obedience*, which has been sedulously inculcated for some time past, as the first duty of the soldier; more particularly as the mode of voting prescribed, by which each voter's name is to be inscribed on a register open to inspection, as being for or against the proposition submitted, admits of no secrecy or independence in the exercise of his opinions. The same consideration will doubtless have more or less influence on the votes of a numerous class of citizens.

I have the honor to be, with great respect, your most obedient servant,  
W. C. RIVES.

HON. DANIEL WEBSTER,  
*Secretary of State.*

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*Mr. Rives to Mr. Webster.*

[No. 117.]

LEGATION OF THE UNITED STATES,  
*Paris, December 10, 1851.*

SIR: The partial efforts at popular resistance which I mentioned in my last despatch as having been made in some quarters of Paris on the 3d inst., were renewed on the following day with somewhat more of system, and on a more extended scale. Barricades were erected on the Boulevards, near the Porte St. Dennis and the Porte St. Martin, and in many of the smaller streets in the neighborhood of those points. They were all, however, successively carried by the military in the course of the day, as the parties which defended them were nowhere very numerous or well organized. Many persons were killed, particularly on the side of the resisters, but in the enforced silence of the press here, at present, there are no means of ascertaining the number of the victims. It seems to be certain, however, that the troops which were employed on the occasion, acted in a spirit of great ferocity, and no mercy was shown. A considerable number of persons, also, who fell into the hands of the government in the sequel of these affairs, has since been shot in the Champ de Mars; but, for the reason above mentioned, the precise number of these military executions is not known, being variously stated from fifty to one hundred and fifty.

With the irregular struggles of the 4th inst., which were so relentlessly and decisively crushed by the preponderating numbers and force of the military, all armed resistance to the *coup d'état* of the President has ceased here. The streets of Paris now present, and have for several days past presented, with but little change, their usual appearance of a crowded and curious population flowing through them, intent on business or pleasure. The absolute regime of the government, however, is maintained without any relaxation. Arrests of suspected individuals continue to be made from day to day: and yesterday a decree of the President (of which a copy is enclosed,) was published in the *Moniteur* interdicting all persons placed under the surveillance of the haute police from residing in Paris or its *banlieue*, authorising the minister of the interior to fix the place in which they shall reside, and investing him at the same time with full authority, in case the conditions of residence imposed shall be broken, to transport the individuals committing such breach to the penitentiary colonies of Cayenne or Algeria, where they

are to be subjected to labor, to strict military law, and be deprived of their civil and political rights.

So far as we have been able to learn here, there has been no formal or organized resistance to the Presidential *coup d'état* in any of the departments. There have been, according to the accounts published by the Government, some outbreaks in the small towns of the interior, assuming the shape of violent invasions of property and personal security by hands of lawless men, which are studiously put forth as specimens of the *socialist* devastation which was in store for the whole country if the President had not interposed to save it. In all this I believe there is great exaggeration. It is, nevertheless, this fear of socialism and anarchy, diffused more or less through all classes of society who possess any thing, which has given the President the fatal power, for the time, of overturning the constitution and civil and political liberties of his country, more, perhaps, even than the bayonets of the army. I shall not be surprised, therefore, if the result of the appeal (so called) which the President has made to the nation, should be the ratification of what he has done; and the prolongation and enlargement of his powers in the form proposed, by a majority of those who may pronounce their suffrages on the occasion.

The objections to the mode of voting originally prescribed, and which was mentioned in my last despatch, were so obvious and undeniable that the Government has abandoned it, and a decree of the President was published a few days ago substituting for it the vote by secret ballot as more consistent with the freedom and independence of the vote, for which a scrupulous respect is professed. A circular has been addressed by the Minister of the Interior also to the prefects of the departments, prescribing numerous regulations for the purpose, as he declares, of surrounding this process of collecting the will of the nation with every guarantee to secure its fairness and integrity. Copies of both of these official acts are herewith enclosed. However plausible these forms, the inevitable consequence of the circumstances in which the nation is now placed is, that it will vote to a greater or less degree *under duress*.

In the extraordinary state of things which has arisen here, the relations to be maintained by me with the government in the first moments of so violent a change, have presented questions of more or less delicacy. In the interest and for the protection of the large number of my countrymen who are here, and who, under the absolute regime which now exists in Paris, are exposed to constant surveillance and even the danger of arrest, I have found it necessary to continue my communications, though informally, with the Department of Foreign Affairs. No such necessity, however, existing with regard to the head of the government, I have abstained, for the present, from appearing at the weekly receptions of the President. A different course has, I learn, been pursued by the rest of the diplomatic corps, with, perhaps, one exception only, that of the representative of Switzerland. Without presuming to judge of the considerations of policy, of interest, or of principles which may have influenced the course of other members of the diplomatic corps, I felt it did not become me, representing as I did a free constitutional republic and a people imbued with a sacred hereditary attachment to the fundamental guaranties of civil and political liberty, to seem, by my presence, on an occasion succeeding so soon the successful *coup d'état* of the President, to give either a personal or official sanction to measures by which all those guaranties had been trodden under foot.

I enclose you herewith the leading article of the Government journal, (the *Patrie*,) from which you will see that the presence of the diplomatic corps and of all others who attended the President's reception on the 8th instant, was interpreted as "an *adhesion* to the patriotic and courageous measures which, (in the language of that journal,) has saved France." While bearing in mind that it is the practice and just maxim of the United States to acknowledge and respect governments *de facto*, when they are accepted or acquiesced in by the nation, whose sole right it is to determine the question of its own political organization; and while I shall studiously avoid, by any act or omission of mine, to compromise the good relations which it must ever be the wish of the United States to maintain with this great country, I could not but think that any proceeding on my part which could be interpreted into an *adhesion* to what had taken place here, would be unbecoming my position as a representative of the American republic, while the French nation itself had not yet decided the appeal which was made to it.

I have the honor to be, with great respect, your most obedient servant,

W. C. RIVES.

Hon. DANL. WEBSTER,  
*Secretary of State.*

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IN THE NAME OF THE FRENCH PEOPLE.

*The President of the Republic upon the proposition of the Minister of the Interior :*

Considering that France requires order, labor and security; that for too many years society has been disturbed and convulsed by the machinations of anarchists, as well as by the attempts at insurrection of the members of secret societies and fugitives from justice, always ready to become the instruments of disorder; considering that this class of men, by habitual revolt, not only compromise the public safety and tranquillity, but also authorize unjust attacks and odious calumnies against the honest working classes of Lyons and Paris; considering that the present laws are insufficient and require modifications, reconciling at the same time the duties of humanity with the demands of public safety; be it decreed :

ART. 1. Every individual placed under the surveillance of the secret police, who shall be found guilty of disobeying their ban, shall be transported, as a measure of public safety, to some prison-colony—to Cayenne or Algiers. The duration of banishment will be not less than five nor more than ten years.

ART. 2. The same punishment will be applicable to persons found guilty of belonging to secret societies.

ART. 3. The effect of placing persons under the surveillance of the secret police, will be, in future, to give to the Government the power to decide on the place of banishment of those condemned. The administration will decide upon the formalities necessary to prevent the prisoner's escape.

ART. 4. It is forbidden to all persons under the surveillance of the secret police to reside in the city or suburbs of Paris.

ART. 5. The individuals designated in the preceding article must leave Paris and the environs within ten days from the promulgation of the present

decree, unless they obtain a permission from the administration to delay their departure. There will be delivered to those who request it a map of the route which they will be allowed to take to their domiciles, or to the places of residence to which they are ordered.

ART. 6. In case of disobedience to the fourth and fifth articles of the present decree, the disobedient will be transported to a prison colony, either Algiers or Cayenne, as a measure of public safety.

ART. 7. The individuals transported in virtue of the present decree will be subjected to manual labor at the prison establishment; they will be deprived of their civil and military rights; military law will be applicable to them. In case of an attempt to escape, the condemned will be subjected to an imprisonment which will not last longer than the time which they have still to be banished. They will be subjected to military discipline and subordination towards their civil or military governors during the period of their imprisonment.

ART. 8. The Executive will determine the organization of these prison colonies.

ART. 9. The Ministers of War and of the Interior, are charged with the execution of the present decree.

Done at the palace Elysee, with the advice of the Ministry.

LOUIS NAPOLEON BONAPARTE.

A. DE MORNEY,

*The Minister of the Interior.*

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[Translation.]

In the name of the French people, the President of the Republic, considering that the mode of election promulgated by the decree of the 2d December, had been adopted under other circumstances as guarantying the sincerity of election; but considering that the vote by ballot, as actually practised, appears to be a better guaranty for the real meaning of the votes, (intelligence des suffrages;) considering that the essential object of the decree of the 2d December is to obtain the free and sincere expression of the will of the people;—decrees:

Articles 2, 3, and 4 of the decree of the 2d December are modified as follows:—

Art. 2. The election shall take place by universal suffrage. All Frenchmen aged twenty-one years, enjoying their civil and political rights, are called on to vote.

Art. 3. They will be required to justify either by their inscription on the electoral lists drawn up in virtue of the law of March 15, 1849, the conditions required by that law.

Art. 4. The ballot will be opened during the days of the 20th and 21st December, in the cheslien of each commune, from eight in the morning to four in the afternoon. The suffrage will take place by secret ballot, by yes or no, by means of a manuscript or printed bulletin.

LOUIS NAPOLEON BONAPARTE.

Given at the palace of the Elysée, December 4.

DE MORNY,

*Minister of the Interior.*

[Translation.]

*Proclamation of the President of the Republic to the French people.*

The disturbances are appeased. Whatever may be the decision of the people, society is saved. The first part of my task is accomplished. The appeal to the nation to terminate the conflicts of parties, would cause, I knew, no serious risk of public tranquillity. Why should the people rise against me? If I no longer possess your confidence, if your ideas have changed, it is not necessary to cause precious blood to flow; it suffices to deposite an adverse vote in the urn. I shall always respect the decree of the people; but until the nation shall have spoken, I will not shrink from any effort, from any sacrifices, to baffle the attacks of the factious. This task, besides, is rendered easy to me. On the one hand, it has been seen how insensate it is to struggle against an army united by the ties of discipline, and animated by the sentiment of military honor, and by devotedness to the country. On the other hand, the calm attitude of the inhabitants of Paris, and the reprobation with which they brand émeutes, have sufficiently testified for whom the capital has pronounced. In the populous quarters, in which, formerly, insurrection rapidly found recruits among workmen easily led away, anarchy this time only met with profound repugnance for its detestable excitations. Thanks be rendered for it to the intelligent and patriotic population of Paris. Let it persuade itself more and more, that my sole ambition is to assure the repose and prosperity of France. Let it continue to lend its coöperation to the government, and in a short time the country can calmly accomplish the solemn act which is to inaugurate a new era for the republic.

Given at the palace of the Elysée, the 8th December.

LOUIS NAPOLEON BONAPARTE.

[Translation—from *La Patrie*.]

PARIS, December 9.

The reception of last evening, Monday, at the Elysée, was the most numerously attended of any which has yet taken place this year. The saloons usually appropriated for these weekly receptions could not contain the multitude of persons which crowded in them; and it was found necessary to throw other saloons open all of a sudden, and to light up hastily the old ball-rooms.

The army was represented by about a hundred generals, and a very large number of superior officers. There was also an abundance of ex-representatives present.

The diplomatic corps, in all its completeness, surrounded the President of the republic. In short, the greatest portion of the high functionaries, both of the civil and judiciary order, formed part of this assemblage; and thus evinced, by their presence, a perfect adhesion to the courageous and patriotic measure which has saved France from the frightful anarchy with which she was threatened in 1852. Enlightened as to its own true interests, and the actions of demagogues, the whole of the moderate party will follow this example.

AMEDEE DE LESENÁ.

Mr. Rives to Mr. Webster.

[No. 119.]

LEGATION OF THE UNITED STATES,  
Paris, December 18, 1851.

SIR: The troubles which have broken out in the departments since the presidential *coup-d'état* of the 2d instant, have, it is understood, been almost entirely suppressed. Not less than twenty-five departments have been successively declared in a state of siege, and put under martial law since that event; and the whole number of departments now in that condition is about thirty out of the eighty-six, into which the territory of the republic is divided.

The public tranquillity in this city has not been disturbed in the slightest degree, since my last despatch. The government has, nevertheless, as a measure of precaution, dissolved and disarmed two of the legions of the national guards here; and this morning a circular of the minister of the interior to the prefects of the departments is published, by which the prefects are authorized, at their discretion, to suspend or dissolve the national guards within their respective jurisdictions, to disarm citizens in whose hands the possession of arms may not be considered as a guaranty for the preservation of order, and also to fill vacancies among the officers, by appointments to be made by the prefect, instead of elections by the national guards themselves, as heretofore practised. Instructions of the same minister to the prefect of the police of Paris are also published, by which that officer is enjoined to take prompt and vigorous measures for the execution of the decree mentioned in my last despatch, respecting persons placed under the surveillance of the haute-police, which applies equally to all persons convicted of, belonging to, or being connected with any secret society. Both of these classes of persons are required to be immediately expelled, not only from Paris, but if need be, from France; and it is announced in connexion with those orders, that the government will have ready in fifteen or twenty days, five vessels-of-war, capable of transporting to the penitentiary colony of Cayenne more than two thousand persons.

These measures sufficiently mark the unrelenting spirit in which the government pursues its system of repression. Since the 2d of December, Presidential decrees have taken the place of laws; and the legislation, as well as the administration of the country, has been by the sole authority of the President. To palliate, in some degree, this appearance of autocratic government, what is called a *commission consultative*, consisting, as it is definitively constituted, of one hundred and seventy-eight persons named by the President, has been organized under the vice-presidency of Monsieur Baroche, the former minister of foreign affairs. This commission, as its functions are defined by the decree establishing it, is to give its opinion on such *projets* of decrees in matters of legislation, as may be submitted to it by the President, and is also to perform, in general, the functions of the *council of state*, as that body was organized previous to the revolution of 1848. It is specially charged to sum up and verify the votes of the people at the polls, to be opened on the 20th and 21st inst., for the prolongation and enlargement of the President's powers, on the returns from the departments. I send you herewith, the decree by which the consultative commission has been definitively constituted, and which contains the list of all the names which now compose it, embracing one hundred and thirty-five persons who were members of the late national assembly, some twenty generals, several



persons who have belonged to former cabinets of the President, as well as all the members of the present, and a few names belonging to the judicial magistracy. A former decree promulgated a composition of the commission not so numerous, but yet comprising the names of several distinguished persons who refused to serve upon it, some of whom notified their refusal in terms of lofty independence or proud disdain.

In my last despatch I mentioned to you that since the late extraordinary events here, I had abstained from appearing at the usual weekly receptions of the President, while the rest of the diplomatic corps, with the exception at that time, of the representative of Switzerland, had pursued a different course. Since the date of that despatch, the representative of Switzerland, under instructions from his government, has followed the example of the rest of the diplomatic corps, and I am now the only foreign diplomatic agent of any grade, who has not attended the President's receptions, since the revolutionary *coup d'état* by which the constitution was overthrown.

In pursuing this course, I have taken counsel, not merely of the feelings and sentiments natural to the bosom of an American citizen under such circumstances, but also of those higher considerations of principle and duty which should control the conduct of a public agent. Representing as the United States do before the world, the great cause of free popular and republican institutions, it seemed to me that it would be in some measure to betray that course, if a person entrusted to act or to speak in their name, should go forward, with any appearance of indecent haste, to salute a dictatorial power which had risen by violence on the ruins of a written republican constitution, however defective, here. On the other hand, the President, having appealed to the nation to ratify his illegal acts, and pledged himself, in the event of an unfavorable decision, to surrender at once the position he now holds by no tenure but that of force, he can have no just cause of complaint, if the representative of a foreign power thinks proper to await the decision of the only rightful tribunal in questions of interior political organization, whose judgment has been formally invoked.

These are the principles which, in the absence of instructions from my Government, I have assumed as the proper guides of my conduct, in a novel and delicate situation, rendered the more responsible by the opposite course taken by all the rest of the diplomatic corps. I trust they may meet the approbation of those to whom alone I am accountable.

I have the honor to be, with great respect, your most obedient servant,

W. C. RIVES.

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[Translation.]

FRENCH REPUBLIC.

In the name of the French people, on the proposition of the keeper of the seals, Minister of Justice, the President of the Republic Decrees:

ARR. 1. The consultative commission is definitively composed as follows:—

Messrs. Abbateur, formerly a counsellor of the Court of Appeals, (Court de Cassation) Loiret.

Achard (General) Moselle.

André (Ernest) Seine.

André (Charante.)  
 D'Argout, Governor of the Bank of France, a late Minister.  
 Arrighi de Padone, (General) Corsica.  
 D'Audiffret, President of the Court of Accounts.  
 De Bar (General) Seine.  
 Baraguez d'Hilliers (General) Doubs.  
 Barbaroux, late Attorney General, Réunion.  
 Baroche, late Minister of the Interior, and of Foreign Affairs, Vice President of the Commission, Charente Inferieure.  
 Barrot (Ferdinand) Ex Minister, Seine.  
 Barthe, Ex-Minister, first President of the Court of Accounts.  
 Batailli (Haute Vienne.)  
 Bavoux (Evariste) Seine et Marne.  
 De Beaumont (Somme.)  
 Bérard (Lot-et-Garonne.)  
 Berger, Prefet de la Seine, Puy-de-dome.  
 Bertrand (Yonne.)  
 Bidoult (Cher.)  
 Bigret (Côtes-du-Nord.)  
 Billiault, Lawyer.  
 Bineau, Ex-Minister, (Maine-et-Loire.)  
 Boinvilliers, Ex-staff bearer of the order of Advocates, Seine.  
 Bonjean, Advocate General at the Court of Cassation, (Drôme.)  
 Bonlatigner.  
 Bourbousson (Vauchese.)  
 Bréhier (Manche.)  
 De Cambacères (Hubert.)  
 De Cambacères (Aisne.)  
 Carlier, Ex-Prefect of Police.  
 De Casabianca, Ex-Minister, Corsica.  
 De Castellane (General) principal Commandant at Lyon.  
 De Caulaincourt (Calvados.)  
 Cécile (Vice-admiral) Seine-Inferieure.  
 Chadenet (Meuse.)  
 Charlemagne (Indre.)  
 Chassaigne-Goyon (Puy-de-dome.)  
 De Chasseloup Laubat (General) Seine-Inferieure.  
 De Chasseloup Laubat (Prosper) Charente-Inferieure.  
 Chaix d'Est-Ànge, avocate in Paris, Marne.  
 De Chazelles, Mayor of Clermont Ferrand, Puy-de-dome.  
 Collas (Gironde.)  
 De Crouseilhès, Ex-Counsellor of the Court of Cassation, Ex-Minister Basses Pyrénées.  
 Curial (Orne.)  
 De Caverville (Cotes du Nord.)  
 Dabeaux (Haute Geronne.)  
 Dariste (Basses Pyrenees.)  
 Daviet, Ex-Minister.  
 Delacosta, Ex-Commissary General of the Rhone.  
 Delajus (Charente-Inferieure.)  
 Delavau (Indre.)  
 Delheit (Lot.)

Denjoy (Gironde.)  
 Desjobert (Seine-Inferieure.)  
 Desmaroux (Allier.)  
 Drouyn-de-Lhuys (Seine-et-Marne) Ex-Minister.  
 Ducos (Theodore) Seine, Minister of the Navy and of the Colonies.  
 Dumas (of the Institute) Nord, Ex-Minister.  
 Dupin (Charles) of the Institute, Seine-Inferieure.  
 Durrieu (General) Landes.  
 Duval (Maurice) Ex-prefect.  
 Eschassériaux (Charente-Inferieure.)  
 Exelmans (Marshal) Grand Chancellor of the Legion of honor.  
 Favre (Ferdinand) Loire-Inferieure.  
 De Flahault (General) Ex-Embassador.  
 Fortout, Minister of public instruction (Basses Alpes.)  
 Fould (Achille) Minister of Finances, Seine.  
 De Fourment (Somme.)  
 Fonquier d'Herouet (Aisne.)  
 Frémy (Yonne.)  
 Furtado (Seine.)  
 Gase (Haute Garonne.)  
 Gaslond (Manche.)  
 De Gasparin, Ex-Minister.  
 De Girardin (Ernest) Charente.  
 Giraud (Augustin) Maine et Loire.  
 Giraud (Charles) of the institute, member of the board of public instruction, Ex-Minister.  
 Godelle (Aisne.)  
 Goulhot de Saint Germain, Manche.  
 De Grammont, (General) Loire.  
 De Grammont, Haute Saône.  
 De Greslau, Réunion.  
 De Grouchy (General) Gironde.  
 Hallez-Claparède, Bas Rhin.  
 D'Hautpout (General) Ex-Minister, Aude.  
 Hebert (Aisne.)  
 De Heerkeren, Haut Rhin.  
 D'Herambault, Pas-de-Calais.  
 Hermann.  
 Heurtier, Loire.  
 Husson (General) Aube.  
 Janvier, Tarnet Garonne.  
 Lalazc, Hautes-Pyrénées.  
 Lacrosse, Ex-minister, Finistere.  
 Ladourette, Moselle.  
 De Lagrange (Frederick) Gers.  
 De Lagrange, Gironde.  
 De La Hitte (General) Ex-minister.  
 Delangle, Ex-attorney General.  
 Languetin, President of the municipal commission.  
 De Lariboisière, Ille-et-Vellaine.  
 Lawœstine (General.)  
 Lebeuf, Seine-et-Marne.

Lebreton (General) Eure-et-Loire  
 Le Comte, Yonne.  
 Le Conte, Cotes-du-Nord.  
 Lefèvre-Lurufié, Minister of Commerce, Eure.  
 Lélut, Haute-Saône.  
 Lemarois, Manche.  
 Lemerier, Charente.  
 Leguien, Pas-de-Calais.  
 Lestiboudois, Nord.  
 Levasseur, Seine-Inferieure.  
 Le Verrier, Manche.  
 Lezay de Marnésia, Lois-et-cher.  
 Magnau (General) Commander-in-chief of the army in Paris.  
 Magne, minister of public works, Dordogne.  
 Maigne, (Edmond) Dordogne.  
 Marchaut, Nord.  
 Matthieu Bodet, advocate in the court of Cassation, Charente.  
 De Maupas, Prefect of police.  
 De Mérode, Nord.  
 Mesnard, President of the Court of Cassation.  
 Meynadier,, Ex-Prefect, Lozère.  
 Mimerel, Nord.  
 Monin, senior mayor of Paris.  
 De Montalembert, Doubs.  
 De Morny, minister of the Interior. Puy-de-Dome.  
 De Mortemart, (Henry) Seine-Inférieure.  
 De la Moskowa (Colonel) Moselle.  
 De Mouchy, Oise.  
 De Moustier, Doubs.  
 Murat (Lucien) Lot.  
 Odier (Antoine) Proctor of the Bank of France.  
 D'Ornano, (General) Indre-et-Loire.  
 De Parien, Ex-Minister, Cantas.  
 Pascalis, counsellor in the Court of Appeals.  
 Petet, (General) Aricége  
 Pepin Lehalleur, Seine-et-Morne.  
 De Persigny, Nord.  
 De Planey, Oise.  
 Plichon, Mayor of Arras, Pas-de-Calais.  
 Portalis, First President of the Court of Appeals.  
 Pongéard, Mayor of Rennes, Ille-et-Vilaine.  
 De Prével (General.)  
 De Rancé, (Algérie).  
 Randon (General) Ex-minister, Governor General of Algeria.  
 Reynaud de Saint Jean d'Angely, (General,) ex-minister, Charente Inférieure.  
 Renouard de Bussiéres, Bas Rhin.  
 Renouard, Lozère.  
 Rogé (General.)  
 Rouher, keeper of the seals, Minister of Justice, Puy-de-dome.  
 De Rozer, Ex-minister Attorney-General at the Court of Appeals in Paris.  
 De Saint Arnaud, (General) Minister of War.  
 De Saint Arnaud, Advocate at the Court of Appeals in Paris.

De Salis, Moselle.  
 Sapers, Tiere.  
 Schneider, Ex-minister.  
 De Legur D'Aguessean, Hautes-Pyrénées.  
 Seydoux, Nord.  
 Thayer, Amédée.  
 Theulen, Cotes-du-Nord.  
 De Thorigny, Ex-minister.  
 Toupot de Bèveaux, Haute Marne.  
 Tourangin, Ex-prefect.  
 Troplong, First President of the Court of Appeals in Paris.  
 De Turgot, Minister of Foreign Affairs.  
 Vaillant, Marshal of France.  
 Vaisse, ex-Minister, Nord.  
 De Vandeul, Haute Marne.  
 Vast-Vimeux (General) Charente-Inférieure.  
 Vauchelle, mayor of Versailles.  
 Viard, Meurthe.  
 Viéillard, Manche.  
 Vuillefroy.  
 Vuitry, Under Secretary of State, in the Department of Finance.  
 De Wagram.

ART. 2. The deliberative commissions will assemble from the 23d of next December, for the purpose of proceeding to count the votes which have been polled, in pursuance of the decrees of the 2d and 4th of the present month.

ART. 3. M. Prosper Hoche, secretary-general of the late council of State, is appointed secretary-general of the consultative commission.

ART. 4. M. Denis Lagarde, ex-recording secretary of the legislative assembly, is appointed recording secretary and principal recorder of the minutes of the consultative commission.

Given at the palace of the national Elysée, with the approval of the council of ministers, this December 13, 1851.

LOUIS NAPOLEON BONAPARTE.

E. RONHER,

*Keeper of the Seal's, Minister of Justice.*

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*Mr. Rives to Mr. Webster.*

[No. 120.]

LEGATION OF THE UNITED STATES,  
*Paris, December 24, 1851.*

SIR: The election to obtain the sense of the nation on the formula (here called *plebiscite*.) for prolonging the authority of the President for ten years and investing him with the power to establish a constitution on the basis laid down in his proclamation of the 2d inst., was held throughout France on the 20th and 21st instant. The result in the capital is already precisely ascertained, being 135,238 affirmative votes to 79,768 negative, the whole number of persons entitled to vote in Paris, being 291,034, of whom, consequently, somewhat less than eighty thousand abstained from voting. It is yet too soon to have received authentic returns from all the departments.

Information, however, has reached here from fifty odd out of the eighty-six into which the territory of France is divided, showing that in those departments alone about five millions of affirmative votes have been given, &c.; about half a million of negative. There can be no doubt, therefore, that the *plebiscite*, as it is called, conferring a virtual sovereign authority on the President, has been voted, not only by a large majority of those who have participated in this show of popular election, but by a decided majority also of the whole number of voters in the nation, which is ordinarily estimated at from ten to eleven millions.

I have the honor to be, with great respect, your most obedient servant,  
W. C. RIVES.

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*Mr. Rives to Mr. Webster.*

No. 121.

LEGATION OF THE UNITED STATES,  
*Paris, January 1, 1852.*

SIR: The *commission consultative*, charged with the duty of summing up and verifying the votes of the French people on the question submitted to the nation by the President, completed their examination and made their report yesterday; from which it appears that 7,439,216 votes were given in favor of the *plebiscite* for prolonging and enlarging his powers in the manner proposed, and 640,737 against it. This unprecedented majority is two millions more than that by which the President was originally elected, and constitutes about three-fourths of the whole number of voters in France.

The *commission* repaired yesterday evening to the Elysée in a body for the purpose of laying their report before the President. I enclose you herewith the address made on the occasion by Monsieur Baroche as the organ of the *commission*, and the answer of the President, both indicating the spirit in which the new institutions of the country are likely to be framed.

After the presentation of the report of the *commission consultative* the diplomatic corps was received by the President, as is usual on the occasion of the new year, and most generally, as in the present instance, on the eve of new year's day. The French nation, with which alone the authority resides to determine the nature and form of its own institutions, having solemnly decided, and by so imposing a majority, in favor of the new order of things, I felt I should be no longer justified in absenting myself from the usual official receptions of the President, especially, as on this occasion, a formal invitation to attend was addressed to me, in common with the other members of the diplomatic corps, by the Minister of Foreign Affairs. The President, in passing along the line of the diplomatic corps, when he came to me, addressed me in his usual civil and courteous manner, and asked me if I had heard from my Government since the late events here. On my telling him that I had not, he added, with apparent cordiality, that he hoped the changes which had taken place here would in no manner interrupt the friendly relations between the two countries.

I send you herewith several decrees of the President providing for a national commemoration of the result of the late expression of the popular

will, and also for the restoring the imperial emblem of the eagle to the French colors.

I have the honor to be, with great respect, your most obedient servant,  
W. C. RIVES.

Hon. DANIEL WEBSTER,  
*Secretary of State.*

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*Mr. Webster to Mr. Rives.*

No. 38.

DEPARTMENT OF STATE,  
Washington, January 12, 1852.

SIR: Your despatches have been regularly received up to the 24th of last month.

The movement made by the President of the republic of France, on the 2d ultimo, created surprise here as well as with you, not only by the boldness and extent of its purpose, but also by the secrecy with which preparation for it had been made, the suddenness of its execution, and the success which appeared to have attended it.

It is quite natural that you should be in no haste to appear at the public receptions of the President after the overthrow of the written republican constitution of France. You sympathize in this respect with the great body of your countrymen. If that overthrow had become necessary, its necessity is deeply to be deplored; because, however imperfect its structure, it was the only great republican government existing in Europe, and all Americans wished it success. We feel as if the catastrophe which has befallen it may weaken the faith of mankind in the permanency and solidity of popular institutions. Nevertheless, and although our own Government is now the only republic ranking among countries of the first class, we cling to its principles with increased affection. Long experience has convinced us of its practicability to do good, and its power to maintain liberty and order. We know that it has conferred the greatest blessings on the country, and raised her to eminence and distinction among the nations; and if we are destined to stand, the only great republican nation, so we shall still stand.

Before this reaches you the election will be over; and if, as is probable, a decided majority of the people should be found to support the President, the course of duty for you will become plain. From President Washington's time down to the present day it has been a principle, always acknowledged by the United States, that every nation possesses a right to govern itself according to its own will, to change institutions at discretion, and to transact its business through whatever agents it may think proper to employ. This cardinal point in our policy has been strongly illustrated by recognizing the many forms of political power which have been successively adopted by France in the series of revolutions with which that country has been visited. Throughout all these changes the Government of the United States has conducted itself in strict conformity to the original principles adopted by Washington, and made known to our diplomatic agents abroad, and to the nations of the world, by Mr. Jefferson's letter to Gouverneur Morris, of the 12th March, 1793; and if the French people have now, substantially, made another change, we have no choice but to acknowledge that also; and as the Diplomatic Representative of your country in France,

you will act as your predecessors have acted, and conform to what appears to be settled national authority. And while we deeply regret the overthrow of popular institutions, yet our ancient ally has still our good wishes for her prosperity and happiness, and we are bound to leave to her the choice of means for the promotion of those ends.

I am, sir, very respectfully, your obedient servant,

DANL. WEBSTER.



REPORT  
OF  
THE SECRETARY OF WAR,  
COMMUNICATING

*Reports in reference to the inundations of the Mississippi river.*

JANUARY 21, 1852.

Read, and ordered to be printed.

JANUARY 22, 1852.

Ordered that three thousand additional copies be printed, three hundred of which for the Topographical Bureau.

WAR DEPARTMENT,  
Washington, January 20, 1852.

SIR: In compliance with the resolution of the Senate dated December 9, 1851, "that the Secretary of the Department of War communicate to the Senate any reports which have been received in reference to the inundations of the Mississippi, and to state whether any further appropriation is required to complete the surveys and investigations heretofore directed," I have the honor to transmit herewith the report of the Chief Topographical Engineer, accompanied by the reports of Lieutenant Colonel Long, of the topographical engineers, and Mr. Charles Ellet, jr., civil engineer, and submitting an estimate of fifty thousand dollars for the ensuing fiscal year, for the further prosecution of investigations in reference to the inundations of the Mississippi.

I have the honor to be, very respectfully, your obedient servant,

C. M. CONRAD,  
*Secretary of War.*

Hon. W. R. KING,  
*President of the Senate.*

BUREAU OF TOPOGRAPHICAL ENGINEERS,  
Washington, January 19, 1852.

SIR: I have the honor to acknowledge your direction to report upon a resolution of the Senate of the 9th ult., calling for such reports as have been received in reference to the inundations of the Mississippi; and to state whether any further appropriations are required, in order to complete investigations on that subject.

To execute the appropriation law of September 30, 1850, two parties were organized: one under Captain Humphreys, of the corps of topographical engineers, the other under Mr. Charles Ellet, jr., civil engineer.

At the commencement, a board of engineers was organized, consisting of Lt. Col. Long and Captain Humphreys, with directions to report upon the required surveys and investigations. The report of the board will be found printed as Senate Ex. Doc. No. 13, 2d session 31st Congress.

The duties of this board were, to "decide upon the extent and character of the surveys to be made;" after which Lt. Col. Long was to resume his former duties at Louisville, Ky., and Captain Humphreys was to "give his attention to the requisite surveys."

Afterwards, on the 18th November, 1850, a separate and additional party was organized under Mr. Ellet.

These parties went to work as soon as practicable, and pursued their investigations with great industry.

Unfortunately, the zeal of Captain Humphreys induced him to remain so long and so late in the field during last summer, on the lower parts of the river, as to produce the most alarming indisposition, and so protracted and painful a debility, that, under advice of his medical attendants, he was ordered to the north, and has been relieved from the necessity of making the required report.

On the 10th of October, 1851, Lt. Col. Long was directed to repair to Philadelphia, and from the notes of Captain Humphreys, and such information as he should receive from him, to make the report. This order, and another, placed Lt. Col. Long again at the head of the board to which he had been previously assigned.

The result of these arrangements has been to produce two reports:

One from Lt. Col. Long, dated 26th November, 1851.

One from Mr. Ellet, dated 31st October, 1851.

These two reports are now submitted, in compliance with the resolution of the Senate.

Lt. Col. Long, in his report, limits himself to an exposition of what has been done (by Captain Humphreys' command,) and of what is yet required to be done. He also enters into the question of the funds wanted for future operations. From this last, an estimate is now submitted of 50,000 dollars, for the ensuing fiscal year, for the further prosecution of investigations in reference to the inundations of the Mississippi.

Mr. Ellet, in his report, goes into a statement of these inundations, and proposes remedies.

In the annual report from this office of 6th November, 1845, an effort is made to expose the pernicious consequences of what are called "cut-offs," as applied to the Mississippi and other similar rivers. This subject is treated more extensively in the report of Mr. Ellet, and the pernicious consequences of the practice more elaborately exposed. Mr. Ellet names several places on the Mississippi liable to these operations, and recommends

measures to protect them against such efforts by man, or by the gradual action of the stream.

Also in the annual report from this office of November 14, 1850, it is stated, in reference to protection from inundation, "there have been suggested but two modes which offer any reasonable prospect of success: One to make additional outlets to the river during periods of high water, adapted to relieve the river when it should rise to a given height, and so made as to avoid abrasion from the action of the discharging water; the other a system of judiciously arranged dikes or levees, or probably a judicious combination of both, according to facts and localities."

Mr. Ellet reasons with much ability upon these two ideas, pointing out favorable positions for the outlets, and indicating the extent of the dikes, and the dimensions which should be given to them. He considers the levees recommended, "averaging eight feet high and four hundred and fifty miles long, would involve an expenditure of probably not more than \$2,500,000. Such an expenditure would, in fact, be ample to protect the whole coast (river coast) below Red river, from the floods that are now felt. But such works would not protect the country above, and would be incompatible with the drainage and reclamation of the delta."

He also calls to his aid a fourth accessory means of controlling these floods; that of reservoirs in the mountain gorges, near the heads of the principal streams. While I willingly admit that all the speculations of a man of intellect are full of interest, and deserving of careful thought, yet I cannot agree with him that these reservoirs would have any good or preventive effects upon the pernicious inundations of this river, and even doubt if the waters so proposed to be collected have any appreciable, and certainly not an injurious effect, upon the inundated region. These reservoirs can of course collect only the waters which shall drain into them, and can have no possible influence upon other water below the reservoir draining space; or, in other words, from the immense plateau of country which lies between the headwaters of these rivers, or below points where gorges for reservoirs would probably be found.

My impressions are, that the pernicious inundations of these rivers are consequent only upon a general rain, or a general and rapid thaw of the snow, over this immense plateau. The calculation of downfall water has direct reference to this extensive plateau; and unless it can be shown that the vast supply of water from this plateau, or a large portion of it, would be collected and restrained by these reservoirs, I do not perceive their advantage to the system proposed to be adopted.

There is a reasoning of Mr. Ellet, referable to any system, which deserves much consideration. It cannot be doubted by any one who has studied, that effectual remedies to the evil complained of force considerations of any system beyond the limits of any one of the affected States, and, in reference to unity of plan, the success of any plan, efficiency and economy, require the energetic action of some general supervising power. This idea involves considerations beyond my province to discuss. The result, however, to my judgment is very clear, either but little can be done, or the work must be done by the general government.

Respectfully, sir, your obedient servant,

J. J. ABERT,

*Colonel Corps Topographical Engineers.*

Hon. C. M. CONRAD,  
*Secretary of War.*

# REPORT ON THE NATURE AND PROGRESS OF THE DELTA SURVEYS OF THE LOWER MISSISSIPPI.

By S. H. LONG, LT. COL. T. E., PRES'T TOPOGRAPHICAL BOARD.

OFFICE WESTERN RIVER IMPROVEMENTS,  
*Louisville, November 26, 1851.*

SIR: In obedience to your instructions of the 10th ultimo, requiring a report on the nature, progress, and cost of the operations performed under the direction of Captain A. A. Humphreys, of the corps of topographical engineers, for the purpose of ascertaining the most effectual method of protecting the alluvial grounds of the lower Mississippi against inundations; also, on the nature and probable cost of the operations remaining to be performed for the same purpose; I have the honor to submit the following, as the summary result of my inquiries and investigations in relation to these premises.

The impaired health of Captain Humphreys has been assigned as the occasion of my interference in this arduous and complicated duty, for which no other could be so well qualified as the officer under whose directions the operations were performed. But from recent personal interviews with Captain H., and from the representations of his physician, I am persuaded that the continual illness of that officer renders him unfit for the laborious task of collating and reporting on the proceedings had, under his direction, in relation to the required surveys of the Mississippi delta, and I shall accordingly endeavor to perform the task, in a manner as brief as practicable, and in conformity to the best lights that can be obtained in relation to the same.

The system of surveys and investigations deemed most conducive to an adequate development of the facts and circumstances affecting the inundations of the lower Mississippi and the means of "protecting the adjacent country from their injurious effects," has been fully set forth and explained in the report of the board of topographical engineers, dated Napoleon, December 18, 1850, to which I beg leave to refer for any information that may be wanted in relation to the "required surveys." The surveys, &c., that have been made, and that are to be treated of in this report, are to be regarded as items embraced by that general system, and constituting merely a portion of the same. The items alluded to have been gleaned from the copious field-notes kept by sundry individuals employed on different departments of the field-work, and especially from the summary statements of Lt. Warren, G. C. Smith, J. K. Ford, J. Bennet, and others, serving in the several departments of the surveys. The surveys and observations at and near New Orleans, having for their objects the establishment of transverse sections of the river bed; the transit speed of the river currents across those sections, at different stages of the water; the proportional quantity of alluvial matter held in suspension by the river at each stage: the quantity of water and floating matter conveyed downward, in all stages, during a period of one year; the per-centage to be deducted from this quantity on account of the floating sedimentary materials, or the sum total of sedimentary matter annually passing the sections; the maximum quantity of water, &c., that can flow between the river banks at New Orleans, without producing overflows, &c., &c., were confided to the direction and supervi-

sion of Professor Forshey, who is still employed on this service, and is expected to persevere in it, during the lapse of one entire year, at least. Of the progress made in these operations, I have as yet failed to obtain any definite knowledge, except that the services of Professor F. have been performed with the most assiduous and careful attention on his part, and in a manner conformable to the instructions of Captain Humphreys, and satisfactory to that officer.

*Epitome from the report of Lieut. Warren, official and personal assistant of Captain Humphreys.*

The report of Lieut. Warren relates principally to operations under the personal direction and supervision of Captain Humphreys, and embraces the following items, unaccompanied by any specific results, or statistics, except by reference to copious field-notes, not yet in my possession.

1. On the completion of the investigations and report of the board of topographical engineers, in the latter part of December, 1850, arrangements were made by Captain Humphreys for the commencement and prosecution of the surveys and other observations therein proposed.

2. The preliminary outfit for these purposes consisted of two quarter-boats, three row-boats or yawls, together with the requisite cooking apparatus, provisions, and various implements necessary to the prosecution of geodetic and hydrographic surveys.

Surveying instruments, consisting of theodolites, compasses, chains, levels, &c., &c., were also procured and distributed among the surveying parties, in a manner adapted to the nature of the services required of each party.

3. Printed memoirs, books, maps, charts and other public documents, descriptive of the aspect, character and changeable features of the vast alluvial district, constituting the spacious delta of the lower Mississippi, were procured, for the purpose of obtaining an adequate and authentic knowledge of the present and former condition of the great delta district.

NOTE.—Inventories of the books, instruments and other public property, alluded to, have been prepared by Lieut. Warren, and are herewith presented. (See doc. A.)

*Organization of field parties.*

4. The force deemed needful to the prosecution of the contemplated surveys, was distributed into three distinct parties, in the following order, to wit:

A topographical party, consisting of two principal assistants, three sub-assistants, and twenty-nine laborers, including chainmen, axemen, boat keeper, steward, cook, &c., under the direction of J. K. Ford, esq., assistant civil engineer.

A hydrographic party, consisting of one principal assistant, two sub-assistants, one pilot, seven boatmen, a steward and cook, under the direction of G. C. Smith, esq., assistant engineer.

And a hydrometric party, consisting of one principal assistant, two sub-assistants, two carpenters, two principal boatmen, one clerk, one messenger, and sixteen extra laborers and gauge observers, occasionally employed in making observations and performing sundry other services, under the direction of Prof. C. G. Forshey, assistant civil engineer.

NOTE.—A statement exhibiting the names, capacities, rates of pay, commencement and termination of service, &c., &c., has been prepared by Lieut. Warren, and is herewith presented. (See doc. B.)

5. From a report of Lieut. Warren, (see doc. C,) the following summary of expenditures incurred in the prosecution of surveys, &c, under the direction of Captain Humphreys, and within the period of his personal command, commencing on the 1st November, 1850, and ending on the 30th November, 1851, exhibits the proximate cost of the work, and, of course, the amount drawn from the treasury on account of the same. The summary is as follows:

*Expenditures on account of detto surveys in 1850 and 1851.*

Expenditures for the 4th quarter of 1850	-	-	-	\$1,662 52
Do. do. 1st do. 1851	-	-	-	10,131 16
Do. do. 2d do. 1851	-	-	-	10,487 26
Do. do. 3d do. 1851 (about)	-	-	-	9,902 47
Do. do. 4th do. 1851	-	-	-	4,816 59
Amounting to	-	-	-	<u>37,000 00</u>

NOTE.—The last two items of the summary have been given as a near approximation of the amounts likely to be expended for the third and fourth quarters of the current year, the amounts remaining to be verified by sundry vouchers, not yet received. The details of expenditures have been exhibited in a multiplicity of vouchers, accompanying the quarterly returns, already made to the Topographical Bureau, by direction of Captain Humphreys.

6. Agreeably to the document above cited, (doc. C,) the expenditures on account of the hydrometric party, under the direction of Professor Forshey, are to be restricted to an amount not exceeding \$500 per month, from and after the end of the current November. No returns or reports, relating to the progress of the investigations committed to the charge of Professor Forshey, have yet been received from that gentleman.

7. In addition to the assistance rendered Captain Humphreys by Lieut. Warren, in the transaction of office business, Lieut. W. was employed, from time to time, in setting and adjusting river gauges at Donaldsonville, Baton Rouge, New Carthage, Natchez, Lake Providence, and various other points; and in directing topographical surveys in the vicinities of Bonnet Carré and Carrollton; also, in aiding the several parties above designated, in the performance of their appropriate duties. Early in June he ceased to participate in the field operations, and resumed office duties, in aid of Captain Humphreys, who, about this time, experienced a violent attack of a sort of cephalic neuralgia, which suddenly and effectually disqualified him for duty, and still continues to frustrate all his efforts to transact the business of his station. In the mean time, Lieut. W. has been employed in the settlement of accounts, and the preparation of drawings, and other papers, relating to the delta surveys. For an account of the services performed by him, reference is had to his report, herewith presented, in the papers before cited. (See doc. D.)

8. *Epitome of the operations of the topographical party, from the report of J. K. Ford, esq., assistant civil engineer.*

The field or district comprising these operations is situated on the westerly side of the Mississippi river, commencing at a point above and in the vicinity of Routh's landing, near the upper mouth of Red river, and extending downward to Baton Rouge, and thence on both sides of the river, and extending still farther to the city of New Orleans. The more considerable localities of the district are the following :

The Red river cut-off, mouths of Red river, head of Bayou Atchafalaya, Raccourci island and cut-off, Tunica bend, Point Coupée, Morganza, Bayou Sara, Port Hudson, Baton Rouge, Bayou Manchac, Plaquemine, Donaldsonville, Bonnet Carré, Red church, Carrollton, and New Orleans. Surveys by compass and level were made on the right bank of the Mississippi, through the entire district, from a point five miles above Routh's landing to New Orleans ; and on the left bank, from the Red river cut-off to the Raccourci cut-off, and from Baton Rouge to Carrollton. Offsets on the right and left of the river, together with triangulations, to determine the width of channels, bayous, &c., and numerous observations, for determining the relations of surveyed lines to extreme high-water marks, of the present and former years, were made at most of the points above indicated, and in various other localities. Agreeably to the report of Mr. Ford, herewith submitted, (see doc. E,) the lines surveyed in various subdivisions of the district embrace the localities, distances, &c., exhibited in the following table :

Designation and definition of localities.	Nature of survey.	Length of surveyed lines.	Total distances.
		Miles.	Miles.
From Routh's landing to Raccourci cut-off, including Red river island, Raccourci island, &c., on both sides of the river.	Main lines....	24.30	
	Offset lines....	8.48	
	Triangulations	6.70	39.48
From Raccourci cut-off to Baton Rouge, on right side of the river.	Main lines....	63.78	
	Offset lines....	8.47	72.25
From Baton Rouge to Bonnet Carré crevasse, on both sides of the Mississippi.	Main lines....	188.45	
	Offset lines....	64.99	
	Triangulations	52.47	305.91
From Bonnet Carré crevasse to Carrollton and the vicinity of New Orleans, on both sides of the river.	Main lines....	57.50	
	Offset lines....	2.50	
	Triangulations	9.16	69.16
Aggregate length of lines surveyed on both sides of river.....		486.80	486.80

9. The drawings in plan, profile and section, showing the extent and position of the lines surveyed, and the topography of the country traversed by them, are numbered in sheets from one to sixteen. They are still in an unfinished state, having been sketched merely in pencil delineations; but are of a character to illustrate, with great precision, the topography of country in the immediate vicinity of the lines surveyed.

NOTE.—The reports of J. K. Ford and Joseph Bennet, esqs., herewith presented, (see docs. E and F) and the field-notes therein referred to, explain in detail the developments brought to light by the surveys; although these developments are not yet sufficiently copious and extensive to reach the objects and answer the ends for which the surveys were instituted. The field operations of the topographical party were terminated on or about the first of July; subsequently to which, Messrs. Ford, Bennet and Fuller have been employed in sketching the lines surveyed, and reporting the work done by the party.

10. *Epitome of the operations of the hydrographic party, from the report of G. C. Smith, esq., assistant civil engineer. (See doc. G.)*

The operations of this party were commenced at a point about ten miles below New Orleans, by running a compass and level line from the shore of the Mississippi, eastward to Lake Borgne, about six miles. By this survey it appears that extreme high water of the Mississippi at the point in question, in 1850, rose to an elevation of eleven and a half feet above the low tide surface of the lake. This result having been determined, the hydrographic party proceeded to sundry points within the district traversed by the topographical party, as before designated; and established a multiplicity of sectional lines, stretching across the Mississippi, Red river, and numerous outlets and bayous of the former. The points at which they operated were as follows, viz: Carrolton, Routh's landing, Red River island and cut-off, mouth of Red river, head of Atchafalaya, old channel surrounding Red River island, Raccourci cut-off and island, Towers' landing, Morganza, Bayou Sara, Faussé rivière, Wintersville, Baton Rouge, Bayou Manchac, Plaquemine, Bayou La Fourche, Bonnet Carré, &c. From the report of Mr. Smith, above cited, it appears that more than eighty sectional lines and soundings thereon have been established by the party, but the areas of the transverse sections, except in two or three instances, and the average velocities of the currents thereat, have not yet been computed or communicated, except merely by reference to copious field-notes, not yet received.

11. In the prosecution of their work, the hydrographic party found it impracticable to take the transverse sectional soundings, with the requisite precision, by the use of row-boats; the current being too strong, and the maximum velocity too great, in very many instances, to admit of soundings across the river in right lines. For example, at Routh's landing, after a multiplicity of attempts, the party succeeded in ascertaining the proximate velocity of the river in the most rapid channel, and found it to be seven and one-fifth miles per hour; a current too rapid for row-boats to ascend, or even to traverse in a right line. The same was true, also, in relation to numerous other rapid passes in the river.

In order to obviate this inconvenience and difficulty, a small steamer, the *Byrona*, with one engineer and two firemen, was chartered for one month



at six hundred dollars, by the use of which, the soundings could be effected with far greater accuracy than by the use of row-boats.

Thus equipped, the party were enabled to accomplish with the requisite precision a multiplicity of soundings on twenty sectional lines at and near Carrollton, and eight in the vicinity of Bonnet Carré; copies of the notes taken on the former were furnished to Professor Forshey, to enable him to make his observations at Carrollton with the certainty of obtaining reliable results. As yet, no communications covering the results obtained from these soundings, &c., have been received.

12. Since the close of the field operations of the party, Mr. Smith, assisted by Lieutenant Warren and O. Sackersdorf, esq., has been employed in plotting the lines, &c., surveyed under his direction, and in preparing profiles or sections, together with the soundings, &c., showing the form and capacity of the river channels at those lines.

### *Operations of the hydrometric party.*

13. The operations of this party have been carried on, for the most part, at Carrollton, a few miles above New Orleans, under the direction of Professor Forshey, the objects of which, as specified in the report of the topographical board, are: 1st, "The determination of a transverse section of the Mississippi near New Orleans, with the utmost care and precision; including all subordinate sections at the same point, from the lowest to the highest water surface of the river, not exceeding the height of the natural banks of the river; and in such a manner as to exhibit with accuracy all the subordinate sections corresponding to every rise of one foot, from the lowest to the highest stage contemplated, as above."

2d, "The average velocity of the river currents, corresponding to each of the different stages above designated, should be determined with the utmost precision; and the duration of each stage, for at least one entire year, should be carefully observed and noted in months, days and hours, for the purpose of determining, as nearly as practicable, the aggregate annual duration of each stage, the amount of water conveyed annually through the river channel from New Orleans to the gulf; and more especially the magnitude of the largest volume that can pass in the channel from New Orleans to the gulf, without overflowing the banks of the river;" and, 3d, "a small quantity of water should be taken from the main channel of the river at each and every stage designated in the preceding item, for the purpose of having the water carefully analyzed, or of separating the earthy matter held in suspension by the water in each stage. The separation should be carefully and skilfully made, for the purpose of determining the quantity of sedimentary matter conveyed downward in each stage, and the annual amount conveyed by the river from New Orleans to the gulf."

14. The known ability and fidelity of the gentleman to whom these delicate operations have been confided, give assurance that they will in due time be faithfully executed. The skill, care, patience and perseverance of Professor Forshey, are sufficient guarantees for their effectual accomplishment. The progress made therein has not as yet been reported; nor can any final results be expected prior to the lapse of one entire year from the commencement of the observations.

15. Of the various operations contemplated in the report of the topo-

graphical board, and still remaining to be performed, the following constitute the principal items, to wit:

16. The completion of the observations, &c., intrusted to the direction of Professor Forshey.

17. The rectification of the level notes in a manner to show their relations to a plane of common reference, viz: to the level of low tide in the gulf.

18. The completion of the drawings, in plan and section, explanatory of the surveys already made, and affording the requisite facilities for connecting them with delineations hereafter to be made.

19. The compass and level lines on one or both sides of the Mississippi should be extended downward from Carrollton to the Balize, with suitable offsets to the right and left, extending outward from the river shores to the level of tide-water, on both sides of the river.

20. The sectional surveys and observations proposed to be made across the Mississippi at some suitable point below the mouth of Red river (probably in the vicinity of Bayou Sara,) for the purpose of ascertaining the entire quantity or volume of the river that must pass that point in extreme flood;—with the view, also, of ascertaining the maximum volume that can flow past this point, compared with the maximum volume that can flow past the Carrollton section, without overflowing the natural banks of the river—remain to be made.

NOTE. As stated in the report above cited, the difference in magnitudes of the two volumes in question is to be regarded as surplus water, which must be conveyed to the right and left from the Mississippi, through outlets or waste-weirs, at several points between the mouth of Red river and New Orleans, in order to exempt that city and the country below it from overflow.

21. The individual capacities of the several outlets or waste-weirs, Bayou Atchafalaya, &c. included, required to convey away the surplus water of the most excessive flood, and prevent overflows at and below New Orleans, remain to be determined.

22. The transverse compass and level line, or lines, extending eastward and westward entirely across the delta region, above and below the mouth of Red river, together with numerous offsets, extending from the same to the gulf coast, &c., as contemplated in the report of the topographical board, was designed for the purpose of ascertaining the direction and positions of outlet channels proper for conveying the surplus water, &c., of the Mississippi, by the nearest and most favorable routes, into the open gulf. These lines remain to be surveyed.

23. The number and positions of the outlets, and the directions and extent of the channels by which the surplus water should be conveyed to tide-water of the gulf; also, the magnitudes of the channels through which the water is to be conveyed, with the least possible danger of producing inundations on the less elevated portions of the delta region, remain also to be determined by the surveys mentioned in the preceding paragraph.

24. The surveys first considered have also for their object a development of the approximate capacity of all sub-marine cavities below the surface of the gulf tides, with the view of ascertaining with some degree of precision the length of the period required to replenish those cavities with sedimentary matter deposited from the surplus water of the Mississippi and Red rivers.

25. In the report of the topographical board the survey of sectional lines across Red river, at a point below the mouth of Black river, together with soundings and other observations, similar to those required at Carrollton, near New Orleans, was accidentally omitted. Surveys and observations for purposes similar to those required at Carrollton, viz: for ascertaining the quantities of water and silt actually conveyed downward through the channel of Red river and deposited within the Mississippi delta, should be made.

26. The other surveys on the Mississippi, above the mouth of Red river, as contemplated in the report above cited, yet remain to be made.

*Means of accomplishing the surveys.*

27. I am credibly informed that the original estimate for this work was prepared agreeably to the direction of the Superintendent of the Coast Survey, and contemplated merely a hydrographical and topographical survey of the delta region of the lower Mississippi, below the mouth of Red river. The survey of lines of level was not then regarded as an essential part of the work. The probable cost of the surveys, including soundings in all the water-fields to be surveyed, but exclusive of the running of lines of level, was one hundred and twenty thousand dollars, (\$120,000.) To this should be added, on account of lines requiring the use of the levelling instrument, at least thirty thousand dollars (\$30,000) more, making the aggregate amount one hundred and fifty thousand dollars, (\$150,000;) which, in view of the unavoidable hardships, exposures, and dangers to be encountered, and the consequent limited portion of each year during which the surveys can be kept in progress, as also the high prices demanded for services under circumstances so unpropitious, may be regarded as a moderate estimate.

28. With respect to the probable cost of prosecuting the surveys during the ensuing year, it may be estimated as follows, viz:

Services and subsistence of assistant civil engineer in charge of hydrometric surveys near New Orleans, at \$7 per day for one year, say-----	\$2,500
Services of three assistant engineers in charge of topographical and hydrographical parties, at \$6 per day each, for one year--	6,570
Services of eight sub-assistants on various duties, at \$5 per day each, for one year, say-----	14,000
Services of one pilot and one steam engineer, at \$100 per month each, for eight months-----	1,600
Services of leadsman, steward, cook, and six boatmen, nine persons, at \$30 each per month, for eight months-----	2,160
Services of axemen, chainmen, gauge-tenders, &c., &c., thirty persons, for eight months of the year, at \$30 each-----	7,200
Subsistence of field parties eight months, say fifty individuals, at thirty cents per day for each-----	3,600
One small steamer of light draught for soundings and hydrographic surveys, including outfit, say-----	10,000
Contingencies, including fuel, stationery, &c., say-----	2,370
Amounting to-----	50,000

29. In the foregoing estimate I have included the probable cost of a light draught steamer, the utility and necessity of which have been forcibly demonstrated during the progress of the surveys and other operations already performed.

I have the honor to be, sir, very respectfully, your obedient servant,

S. H. LONG, *Lieut. Col. T. E.*,

*President Topographical Board.*

Col. J. J. ABERT,

*Chief of Topographical Engineers, Washington, D. C.*

## REPORT ON THE OVERFLOWS OF THE DELTA OF THE MISSISSIPPI.

PREPARED UNDER INSTRUCTIONS FROM THE WAR DEPARTMENT;

BY CHARLES ELLET, JR., CIVIL ENGINEER.

*Introduction.*

In this report, the causes of the more frequent and more extensive overflows of the delta of the Mississippi, in recent than in former times, are considered, and plans suggested for the mitigation of the evil.

The greater frequency and more alarming character of the floods are attributed—

*Primarily*, to the extension of cultivation, throughout the Mississippi valley, by which the evaporation is thought to be, in the aggregate, diminished, the drainage obviously increased, and the floods hurried forward more rapidly into the country below.

*Secondly*, to the extension of the levees along the borders of the Mississippi, and of its tributaries and outlets, by means of which the water that was formerly allowed to spread over many thousand square miles of low lands, is becoming more and more confined to the immediate channel of the river, and is, therefore, compelled to rise higher and flow faster, until, under the increased power of the current, it may have time to excavate a wider and deeper trench to give vent to the increased volume which it conveys.

*Thirdly*, to *cut-offs*, natural and artificial, by which the distance traversed by the stream is shortened, its slope and velocity increased, and the water consequently brought down more rapidly from the country above, and precipitated more rapidly upon the country below.

*Fourthly*, to the gradual progress of the delta into the sea, by which the course of the river, at its embouchure, is lengthened, the slope and velocity there are diminished, and the water consequently thrown back upon the lands above.

It is shown that each of these causes is likely to be progressive, and that the future floods throughout the length and breadth of the delta, and along the great streams tributary to the Mississippi, are destined to rise higher and higher, as society spreads over the upper States, as population adjacent to the river increases, and the inundated low lands appreciate in value.

For the prevention of the increasing dangers growing out of these several co-operative causes, six distinct plans are discussed and advocated :

*First*—Better, higher and stronger levees in Lower Louisiana, and more efficient surveillance—a local measure, but one requiring State legislation, and official execution and discipline.

*Second*—The prevention of additional cut-offs: a restraint which may call for national legislation, or possibly judicial interference, to prohibit the States and individuals above from deluging the country below.

*Third*—The formation of an outlet of the greatest attainable capacity, from the Mississippi to the head of Lake Borgne, with a view, if possible, to convert it ultimately into the main channel of the river.

*Fourthly*—The enlargement of the Bayou Plaquemine, for the purpose

of giving prompt relief to that part of the coast which now suffers most from the floods, viz: to the borders of the Mississippi from above Baton Rouge to New Orleans.

*Fifth*—The enlargement of the channel of the Atchafalaya, for the purpose of extending relief higher up the coast, and conveying to the sea, by an independent passage, the discharge from Red river and the Washita.

*Sixth*—The creation of great artificial reservoirs, and the increase of the capacity of the lakes on the distant tributaries, by placing dams across their outlets with apertures sufficient for their uniform discharge—so as to retain a portion of the water above until the floods have subsided below. It is proposed by this process to compensate, in some degree, for the loss of those natural reservoirs which have been and are yet to be destroyed by the levees; and at the same time, and by the same expedient, improve the navigation of all the great tributaries of the Mississippi, while affording relief to the suffering and injured population of the delta.

It will be seen that these several plans harmonize with each other, and may be carried on simultaneously.

It will be shown, moreover, that they will all be needed, and that they must be adopted promptly and prosecuted vigorously, to afford efficient and timely protection; and that, if adopted, and pressed forward boldly, they will ultimately secure the immediate object of Congress—the protection of the coasts of the Mississippi from overflow, and simultaneously the perfection of twenty thousand miles of precarious navigation, and the ultimate drainage and cultivation of fifteen or twenty millions of acres of uninhabitable swamps.

Nothing will more forcibly impress the mind of the practical man with the inestimable value of the Mississippi and its tributaries, as a social, commercial, and political bond of this happy country, than the comprehensive study of the grand and beautiful problem of controlling their waters.

The writer is fully aware of the distrust with which some of his views on this subject have been, and may yet be for a season, regarded. But he submits his plans to the calm consideration of an enlightened public, in the confident belief that every year, and each succeeding flood, will secure for them closer attention and additional strength.

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*Report on the means of protecting the Delta of the Mississippi from inundations.*

PART I.

OF THE PHYSICAL CHARACTERISTICS OF THE DELTA OF THE MISSISSIPPI.

The delta of the Mississippi is usually assumed to extend from the Gulf of Mexico to the point at which rock *in situ* is first encountered on both sides of its channel, and supposed to be found in the bed. This point is near the village of Commerce, about twenty-eight miles above the mouth of the Ohio. But if we mean to designate by THE DELTA that formation of alluvial soil through which the Mississippi now flows, and which has

been raised above the sea by the earthy matter brought by the river from the highlands, it will be difficult to assign its true northern limit. There is no evidence that the Gulf of Mexico, in the present order of things, and under the present adjustment of land and water, ever washed the base of the hills north of the Ohio.

If that fact be assumed, it involves the further assumption that there existed at some remote period a cataract or rapids, having a descent greater than the pitch of Niagara, somewhere above the mouth of the Ohio. The elevation of the low water surface of the Mississippi between Commerce and Cape Girardeau is two hundred and eighty-five feet above the level of the ocean; and if the present level of the sea ever extended up to that point, the Mississippi must then and there have precipitated its waters over a ledge two hundred and eighty-five feet high.

Without intending to maintain this assumption, which has never been supported by facts or demonstration, for the present purposes we may adopt the mouth of the Ohio as the head of the delta, though only for the convenience of assigning some limit to the field of investigation.

To be able to form a just conception of the present physical constitution of the delta, and the causes of its overflow, we must imagine a great plane sloping uniformly from the mouth of the Ohio, in a direction deviating but little from a due southerly course, to the Gulf of Mexico. The length of this plane, from the mouth of the river to the waters of the gulf, is five hundred miles. Its northern extremity is elevated two hundred and seventy-five feet above the surface of the sea, and is there and everywhere nearly level with low water in the Mississippi river. Its total descent, following the highest surface of the soil, is about three hundred and twenty feet, or at the rate of eight inches per mile.

The breadth of this plane near the mouth of the Ohio, in an east and west direction, is from thirty to forty miles, and at the Gulf of Mexico it spreads out to a width of about one hundred and fifty miles. It is enclosed on the east and west by a line of bluffs of irregular height and extremely irregular direction.

This plane, containing about 40,000 square miles, has been formed in the course of ages from the material brought down from the uplands by the Mississippi and its tributaries. The river has therefore raised from the sea the soil which constitutes its own bed. It flows down this plane of its own creation, in a serpentine course, frequently crowding on the hills to the left, and once passing to the opposite side and washing the base of the bluff which makes its appearance on the west at Helena.

The actual distance from the mouth of the Ohio to the coast of the gulf is, as stated, in round numbers, five hundred miles. The computed length of the Mississippi river from its confluence with the Ohio to the mouth of the Southwest Pass is 1,178 miles, and the average descent at high water  $\frac{37}{100}$  of a foot, or  $3\frac{1}{4}$  inches per mile.

The course of the river is therefore lengthened out nearly seven hundred miles, or is more than doubled by the remarkable flexures of its channel; and the rate of its descent is reduced by these flexures to less than one-half that of the plane down which it flows.

In the summer and autumn, when the river is low and water is scantily supplied by its tributaries, the surface of the Mississippi is depressed at the head of the delta about forty feet, and as we approach New Orleans, twenty feet below the top of its banks. It then flows along sluggishly in

a trench about 3,000 feet wide, 75 feet deep at the head, and 120 feet at the foot, and enclosed by alluvial and often caving banks, which rise, as stated, from twenty to forty feet above the water.

But when the autumnal rains set in, the river usually rises until the month of May, when it fills up its channel, overflows its banks and spreads many miles over the low lands to the right and left of its trace: This leads to another important feature in the characteristics of this stream.

The Mississippi bears along at all times, but especially in the periods of flood, a vast amount of earthy matter suspended in its waters, which the current is able to carry forward so long as the river is confined to its channel. - But when the water overflows its banks, its velocity is checked, and it immediately deposits the heaviest particles which it transports, and leaves them upon its borders; and as the water continues to spread further from the banks, it continues to let down more and more of this suspended material, the heaviest particles being deposited on the banks, and the finest clay being conveyed to positions most remote from the banks.

The consequence is, that the borders of the river which received the first and heaviest deposit are raised higher above the general level of the plane than the soil which is more remote; and that, while the plane of the delta dips towards the sea at the rate of eight inches per mile, the soil adjacent to the banks slopes off at right-angles to the course of the river into the interior, for five or six miles, at the rate of three or four feet per mile.

These lateral slopes, with the high water and low water levels of the Mississippi and the artificial levees, are exhibited in the annexed section, (fig. 1,) which is a fair average obtained from a number of surveys made at various points between Donaldsonville and Baton Rouge, by Messrs. H and William G. Waller, civil engineers.

It will be perceived from this section and description, that in times of flood, the surface of the Mississippi is eighteen or twenty feet higher than the level of a great part of the actual delta; and that, at low water, its surface is found in the very lowest depression of the delta; so that all the lateral streams and adjacent low grounds have then a natural drainage towards its channel.

The lands immediately on the borders of the river are extremely fertile, and often highly cultivated. But as they are all subject to inundations by the high floods of the river, they are guarded by artificial embankments, which have been thrown up in front of each plantation by the individual proprietors. The water presses upon these embankments, and often produces breaches through them; when, as may be readily appreciated from the representation above, it rushes in a deep column into the low grounds, from which it had been previously excluded by the levees, and sweeps over any improvements that may have obtained a foot-hold there. It is to find means to prevent the disasters incident to these crevasses, and to prevent the overflow of these low grounds, or swamp lands generally—covering, it is supposed, nearly 40,000 square miles—that the reconnoissance, of which the results are now given, has been instituted.

What is here said of the Mississippi applies equally, though with modifications due to the difference in the magnitude of the streams, to all the tributaries, great and small, which flow into it, from the mouth of the Ohio to the sea. Each tributary is enclosed, at low water, by banks twenty or thirty feet high, which it overflows at periods of flood, mingling its waters of overflow in the lateral low grounds with those of the Mississippi. The



immediate borders of each tributary likewise exhibit deposits, made by the tributary, highest at the edge of the channel, and sloping off laterally to the adjacent lowlands, presenting a narrow strip of cultivated or arable soil, near the winding channel, and great unbroken swamps beyond.

The delta of the Mississippi was, therefore, in its natural condition, at high water, a vast inundated tract, through the lowest depression of which might be traced the channel of the river, absorbing numerous tributaries in its course, each of which found its way to the common recipient along the most depressed portions of the adjacent lowlands.

In times of great floods, there was then but an inconsiderable area of land elevated above the water; but as the river fell, the course of its channel might be defined by two narrow strips of soil, rising in parallel belts above the surface; from which, as the water continued to recede, there would become gradually visible the parallel borders of the tributaries, and their countless bayous, forming a double net-work of natural embankments, with rivers of various dimensions enclosed between them, over the whole area of the delta.

It is in the highest degree important that this description should be made clear; for it will presently be shown that it is essentially the exclusion of this water of overflow from the swamps, that is now creating so much distress in lower Louisiana; while to remove the water and reclaim these swamps, has become a prominent object of national and State legislation.

The subject is of vast interest, highly complicated and full of difficulty. But the lands which are now annually overflowed, may certainly be estimated at fully 16,000,000 of acres, which, if relieved by any effectual process, would be worth, at the government price, \$20,000,000; but converted, as they may be, into sugar and cotton fields, would possess a value that it might seem extravagant to state; while the annual loss and distress of the present population caused by the inundations of the river can scarcely find a parallel, excepting in the effects of national hostilities.

#### WIDTH OF THE MISSISSIPPI.

The Mississippi is usually described as remarkable for the uniformity of its surface width. And if we take great sections, and compare the average breadth in consecutive reaches extending from one great tributary to another, we shall certainly be struck with the uniformity of these averages, and the very small impression produced upon the apparent magnitude of the stream by the immense volumes of water poured into it by its greatest arms. This fact has, indeed, an important bearing upon the subject of overflows; for we shall find that, notwithstanding the vast contributions received from the Ohio, the Arkansas, White, St. Francis, Red and other rivers, the Mississippi, in flood, actually conveys less water into the Gulf of Mexico in a unit of time, *through its channel*, than it carries past Cape Girardeau, or other points, twelve hundred miles above its mouth.

But notwithstanding this general truth, this great river presents as frequent and as sudden changes of width, depth and velocity, as are exhibited by other streams. Let us take, for example, three measurements of the width of the entire river between banks, in the neighborhood of St. Louis.

*Width of the Mississippi river at St. Louis.*

Width opposite Market street, (taken at low water in 1839, by Charles Ellet, jr.)	3,444 feet.
Width above Bloody island, (taken in 1837, by Captain R. E. Lee)	4,314 "
Width at Narrows, three miles above St. Louis, (taken in 1837, by Captain R. E. Lee)	1,835 "

These measurements show variations in the width at the surface, of nearly one hundred and forty per cent. in the space of three miles; yet the average width at or near St. Louis does not differ materially from the average at Vicksburg or at Donaldsonville. In fact, it will be seen, in comparing the following widths at surface, measured at various points, from Cape Girardeau to the mouth of the river, that there is no general increase of the breadth of the Mississippi, in passing from what is supposed to be its ancient channel to that alluvial bed which it has raised for itself from the sea.

TABLE I.

*Of the width of the Mississippi between banks.*

Points.	Feet.
Cape Girardeau, about 1½ mile above,	2,500
Above mouth of Ohio, about 2 miles,	1,530
Below mouth of Ohio, about 1 mile,	4,031
Below Memphis, half a mile,	2,830
At the Horse-Shoe cut-off,	2,940
Above mouth of Arkansas river, three quarters of a mile,	2,810
Below mouth of Arkansas river, three quarters of a mile,	3,730
At American bend, upper side, below Columbia,	3,365
At American bend, lower side,	3,285
Terrapin Neck, Fig. 3, letter P,	3,440
Terrapin Neck, lower side, at letter P',	3,540
Above Vicksburg, about 7 miles,	3,513
Above Vicksburg landing, half a mile,	2,243
Below Vicksburg, about 3 miles,	4,400
Above Palmyra Island bend,	4,048
Below Palmyra Island bend,	5,613
Above Grand Gulf, about 4 miles,	3,644
Below Grand Gulf, about 3 miles,	6,900
Above the mouth of Red river, about half a mile,	2,545
Below the mouth of Red river, about 1 mile,	3,655
Raccourci cut-off, (river still becoming wider here,)	1,761
Tunica bend,	3,323
Baton Rouge, (from the report of Senate committee of Louisiana,)	2,500
Above Plaquemine, one and a half mile,	2,170
Below Plaquemine, one and a half mile,	2,790
Above Donaldsonville, about 1 mile,	2,483
Below Donaldsonville, about half a mile,	3,553
Bonnet Carré bend, above crevasse,	2,925
Bonnet Carré bend, below crevasse,	2,983
Sauvé's plantation, above crevasse,	2,376
At McMaster's plantation, about 11 miles below New Orleans,	2,425
Average width of the Mississippi,	3,236

From these measurements—for which the points of observation were not particularly selected, but taken with a view to obtain other information incident to this investigation—the width of the Mississippi may be said to vary, in the course of the river through the delta, from 2,200 to 5,000 feet, though there are occasionally encountered places where these limits are materially exceeded. In the succeeding investigations, when it may become necessary to use a mean expression for the value of the width, 3,300 feet will be assumed for that average.

There is one fact having a most important practical bearing, which it will be expedient to notice here, as resulting from these measurements. The width of the Mississippi, in the Raccourei cut-off, is, at this time, but 1,761 feet, or only half the measured width at points a few miles above and below the cut-off. This passage has now been open more than three years, yet the power of the whole river rushing through it has not been found sufficient to cut out that narrow neck much beyond the half of the average width of the stream. As the pass becomes enlarged from year to year, the force of the river through it will be correspondingly diminished, and centuries may therefore roll by before that part of the Mississippi is opened as wide as the average dimensions of the channel.

This fact will be again adverted to when we come to consider the merits of that theory which treats with indifference the constantly increasing volume poured down by the river; confiding in the hope that the abrasive power of the current will increase as the volume of water discharged increases, and that this increasing power will always secure an adequate passage for the surplus water. The writer may, therefore, assert now, as he will be forced to maintain hereafter, that this is a delusive hope, and most dangerous to indulge, because it encourages a false security.

#### OF THE DEPTH OF THE MISSISSIPPI.

The depth of the Mississippi, from above the entrance of the Missouri to a point below the mouth of the Arkansas, exhibits a decided increase with each additional tributary it receives. But below the Arkansas, and especially below the mouth of the Yazoo, though the extreme depths, in mid-channel, may vary materially,—sometimes diminishing down to less than ninety feet and sometimes rising to more than one hundred and eighty feet,—they exhibit no general or progressive increase.

The following table shows the maximum depths found at high water in sounding across from shore to shore at the several points for which the foregoing widths are given :

TABLE II.

*Of the extreme depths of the Mississippi at high water of 1850*

Points.	Fect.
Cape Girardeau, about 1½ mile above,	66.5
Cape Girardeau, (to high water of 1844,) -	76.5
Above mouth of Ohio, about 2 miles, -	77.5
Below mouth of Ohio, about 1 mile, -	71.3
Below Memphis, half a mile, -	102.5
At the Horse-Shoe cut-off, -	72.9
Above mouth of Arkansas river, three-fourths of a mile, -	81.5
Below mouth of Arkansas river, three-fourths of a mile, -	81.0
At American bend, upper side, -	103.6
At American bend, lower side, -	79.1
Terrapin Neck, Fig. 2, letter P, -	87.6
Terrapin Neck, lower side, at letter P', -	102.1
Above Vicksburg, about 7 miles, -	120.0
Above Vicksburg landing, half a mile, -	120.5
Below Vicksburg, about 3 miles, -	84.0
Above Palmyra Island bend, -	96.3
Below Palmyra Island bend, -	91.3
Above Grand Gulf, about 4 miles, -	105.5
Below Grand Gulf, about 3 miles, -	76.5
Above the mouth of Red river, about half a mile, -	118.0
Below the mouth of Red river, about 1 mile, -	128.0
In Raccourci cut-off, -	107.0
Tunica bend, -	87.7
Above Plaquemine, one and a half mile, -	123.5
Below Plaquemine, one and a half mile, -	128.0
Above Donaldsonville, about 1 mile, -	117.5
Below Donaldsonville, about half a mile, -	103.2
Bonnet Carré bend, above the crevasse, -	107.9
Bonnet Carré bend, below the crevasse, -	76.4
Sauvé's plantation, above the crevasse, -	135.3
At McMaster's plantation, about 11 miles below New Orleans, -	100.0

From Vicksburg down to New Orleans, we may fairly assume the average depth, in mid-channel way, at high water, to be one hundred and fifteen feet, though there are many points where the depth exceeds one hundred and eighty feet, and others where the extreme does not exceed seventy feet. It is liable also to frequent variations in the same points; light deposits being left on the bottom when the river is low, and swept out again when its force is increased by the flood. The greatest depth found in the course of this investigation was under the bluffs at Grand Gulf, where the lead once reached two hundred feet. A depth of one hundred and eighty-four feet was obtained above Donaldsonville, and one hundred and eighty feet in several other places.

It is worthy of note that the maximum depth of the section taken in the Raccourci cut-off, as well as the width of surface, after having been three years exposed to the action of the river—here greatly increased in power by the contraction of the water-way—is still decidedly below the average.

TABLE III.

*Of the section of the Mississippi between banks, in the high water of 1850.*

Points.	Sq. feet.
At Cape Girardeau, about 1½ mile above, - - - - -	105,544
At Cape Girardeau, about 1½ mile above, (flood of 1844,) - - - - -	130,624
Below mouth of the Ohio, about 1 mile, - - - - -	235,333
Below Memphis, half a mile, - - - - -	143,212
At the Horse-Shoe cut-off, - - - - -	161,221
Above mouth of the Arkansas river, three-fourths of a mile, - - - - -	171,190
Below mouth of the Arkansas river, three-fourths of a mile, - - - - -	195,390
At American bend, upper side, - - - - -	170,160
At American bend, lower side, - - - - -	187,170
Terrapin Neck, upper side, - - - - -	178,220
Terrapin Neck, lower side, - - - - -	163,130
Above Vicksburg, about 7 miles, - - - - -	160,164
Above Vicksburg landing, half a mile, - - - - -	177,200
Below Vicksburg, about 3 miles, - - - - -	207,800
Above Palmyra Island bend, - - - - -	187,220
Below Palmyra Island bend, - - - - -	236,292
Above Grand Gulf, about 4 miles, - - - - -	175,773
Below Grand Gulf, about 3 miles, - - - - -	264,797
Above the mouth of Red river, about half a mile, - - - - -	194,530
Below the mouth of Red river, about 1 mile, - - - - -	268,646
Raccourci cut-off, - - - - -	148,790
Tunica bend, - - - - -	238,892
Baton Rouge, (from the report of engineers of Senate committee,) - - - - -	212,500
Above Plaquemine, one and a half mile, - - - - -	181,500
Below Plaquemine, one and a half mile, - - - - -	199,280
Above Donaldsonville, about 1 mile, - - - - -	200,250
Below Donaldsonville, about half a mile, - - - - -	214,580
Bonnet Carré bend, above crevasse, (high water of 1849,) - - - - -	198,734
Bonnet Carré bend, below crevasse, (high water of 1849,) - - - - -	152,443
Sauvè's plantation, above crevasse, (high water of 1849,) - - - - -	182,031
At McMaster's plantation, about 11 miles below New Orleans, - - - - -	166,172
The average area of the high water section of the Mississippi, from Vicksburg to Donaldsonville, inclusive, is - - - - -	215,200
The average of the whole, from the mouth of the Ohio to New Orleans, is - - - - -	200,000

It will be again observed, on inspecting this table, that the area of the section of the Mississippi in high water, through the Raccourci cut-off, is but little more than two-thirds of the average area from Vicksburg to Bonnet Carré. The average velocity of the current through that contracted pass, is, therefore, at least forty per cent. greater than the average velocity in other parts of the river below the mouth of the Arkansas. Yet, notwithstanding the fact that the water is so crowded in this gorge, and that its velocity is so much accelerated by the contraction of the channel, it makes exceedingly slow progress in opening the way and regaining its average normal dimensions.

The conclusions which will be drawn from this fact will be found of the highest importance in treating of the effect of cultivation, of cut-offs, and the extension of the levees—in fact in all measures tending to throw more water into any part of the channel in a given time. It will be seen that we must seek to determine the effect of every such increase of supply, without venturing to make allowances for any hypothetical augmentation of the

water-way to be ultimately gained by the increase of the abrasive power of the current.

#### OF THE VELOCITY OF THE MISSISSIPPI.

Numerous observations were made in the course of these investigations, for the purpose of determining the velocity of the Mississippi. The result of these measurements shows an average surface velocity in the centre of the river, at high water, of about seven feet per second, or nearly five miles per hour; and occasionally places where the speed at the surface is ten or eleven feet per second, or fully seven miles per hour.

But for the purpose of computing the discharge of the river, it is necessary to be able to deduce approximately the velocity of all the currents beneath the surface, or the mean velocity, from observations made at the surface. This problem has occupied the attention of several eminent writers, among whom stand conspicuously the names of Du Buat and De Prony. The formulas published by these writers, respectively, have received the sanction of practical men, and are now almost universally adopted. Yet the experiments made during this inquiry have exhibited results which do not sustain the received rules, when applied to deep and rapid rivers, and which, in fact, are in some respects at variance with all the popular theories.

A primary object of the writer was to ascertain what deduction ought to be made from the observed velocities at the surface of the Mississippi, in order to represent fairly the mean velocity of the whole mass of the river.

For this purpose, lines of different lengths were prepared and so loaded that the lower end would sink while the upper end, and the load at the lower, would be supported by a float on the surface. A line thus prepared was thrown into the river where the depth had been previously ascertained, and when straightened out by the weight below, a surface float was placed alongside of the one which supported the line, and allowed to start from a drifting boat, with the same velocity. These floats were kept together until they were carefully timed as they passed the range previously established on the shores. They were then successively timed again as they passed a second parallel range, established five hundred feet lower down the river. It results from numerous trials, made in this manner, in different parts of the river, in depths varying from fifty-four feet to one hundred feet, and in currents varying from three miles to seven miles per hour, that *the speed of the float supporting a line fifty feet long is almost always greater than that of the surface float*. The average increase of velocity over the surface velocity with a line of fifty feet, obtained from nineteen observations, is *two per cent*.

Four observations in nineteen trials with the fifty-feet line, exhibited under-velocities less than the surface velocities. With a line twenty-five feet long the results were nearly the same in five observations; four of the results with the line being greater than the speed of the surface float. A line seventy-five feet long in ninety-three feet water showed a velocity a little over two per cent. greater than that of the surface float.

A line seventy-five feet long where the depth was eighty-two feet, showed a velocity 2.6 per cent. less than that obtained at the surface. But experiments made on the speed so near the bottom must always be received with distrust, as the lower end of the line is liable to come in contact with the soil, or other fixed obstructions. (See note A.)

So far as these experiments go, they lead to the conclusion that the mean

velocity of the Mississippi, instead of being less, is in fact about two per cent. greater than the mean surface velocity. But it has not been deemed proper to make any additions to the volumes deduced from observations on the speed at the surface, in computing the total discharge of the river. It is the opinion of the writer, founded on these experiments and legitimate deductions from them, that the velocity of the water near the surface is retarded by its contact with the atmosphere. As we descend below the surface the effect of this retardation disappears, and at some point about midway between the surface and the bottom the velocity would be a maximum. But at the bottom, a further retardation of course has place, which the time of the writer and the means at his disposal, did not permit him to study. But as such a retardation must occur, it has been deemed proper to assume that it will diminish, if it do not altogether neutralize, the increase of two per cent. observed in the velocities, with a fifty-foot line, over those obtained at the surface.

It is probable that the mean velocity of the Mississippi is a very small fraction greater than the mean velocity of its surface; but as the excess must be very small, certainly less than two per cent., it has been thought proper to compute the discharge in all cases from the surface velocity only.

In deducing the average increase of velocity beneath the surface, no account has been taken of those observations which show remarkable under-currents produced by eddies and local irregularities. On one occasion, in testing the velocity a few hundred feet from the shore, where the soundings showed a depth of thirty-nine feet, the velocity of a twenty-five foot line was found to be 20½ per cent. greater than that of the surface float; and the speed of a buoy bearing a thirty-five foot line—sweeping within four or five feet of the bottom—was seventeen per cent. greater than that of the surface.

These under-currents are very frequent below the salient angles of the shores, where eddies occur, and great disturbance of the water is produced. But the foregoing results are obtained from observations made in straight channels where no such disturbing causes were observable.

A study of these observations will enable us, moreover, to account for an anomaly sometimes noticed in testing the surface velocities at different distances from the shore in the same part of the river. It occasionally happens that the speed at the surface diminishes as the depth of the sounding increases; contrary to the received hypothesis which assumes that, *ceteris paribus*, the velocity of the surface current increases in some proportion with the depth of the channel. Still, these anomalous results are, in this case, only in appearance in conflict with the popular law. The depth of the river is due, not to the surface velocity, but to the velocity of the water which is in contact with the bottom, and which produces the depth. The deeper soundings found where the surface velocities are diminished, are the result of under-currents of greater force than those at the surface.

It is proper to remark, that it was only in the Mississippi, and its deep tributaries and outlets, that the under-velocities were found to exceed those obtained from the surface floats. On repeating the same experiments in shallow mountain streams, of quick descent, the law commonly recognised was found to prevail, and the surface floats passed quickly ahead of those which were attached to lines suspended at any depth beneath the surface.

## OF THE VOLUME OF WATER DISCHARGED BY THE MISSISSIPPI.

It was an object of solicitude, on the part of the writer, to ascertain from actual measurement the volume of water discharged by the Mississippi at the height of the flood of April, 1851. But, at the moment when the river was thought to have reached its highest mark, the weather proved to be unfavorable for such experiments, which can only be correctly made at times of perfect calm. The least motion of the wind affects the velocity of the float and vitiates the result. Before suitable weather again occurred the water had receded below New Orleans, where the measurement was made, about six inches.

In that condition of the river, when the surface had fallen six inches, the volume discharged at a point eleven miles below the city, and below all the crevasses then running, was found to be 979,240 cubic feet per second. This measurement was made the 16th April, 1851.

Ten days after this gauging was completed, the weather proved again to be perfectly calm, and the opportunity was seized to ascertain the discharge a short distance below the mouth of Red river. The water had then receded at that place  $2\frac{3}{16}$  feet from the highest point attained during that flood. The result, in this condition of the surface, exhibited a total discharge immediately below Red river, of 1,054,000 cubic feet per second.

We have, then, the following important results derived from these experiments:

The discharge below Red river was-----	1,054,000 c. ft. per. sec.
The discharge below New Orleans-----	979,240 do. do.

Lost between Red river and New Orleans-----	<u>74,760</u> cubic feet.
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Even in this state of the facts, after the river had fallen  $2\frac{3}{16}$  feet at the mouth of Red river, and only half a foot at New Orleans, the discharge below Red river exceeded the discharge at New Orleans, by 74,760 cubic feet per second.

This fact will be hereafter found worthy of special note, when we come to discuss the practicability of defending the country below Red river, as has been often proposed, by simply strengthening the levees. When the water had fallen  $2\frac{3}{16}$  feet, the breaches in the guard-banks of the coast were still venting more water than would have sufficed, as we shall find, to raise the surface twelve inches when the flood was at its extreme height.

But before attempting to discuss this question, it is important to ascertain what volume of water escaped through all the crevasses below Red river at the top of the flood of 1851; and also, approximately, some method to determine the volume of water that will be needed to raise the surface of the river, when in flood, any given height. These questions involve the unknown relations of depths, slope, and velocity of rivers; questions which have been discussed by several able and distinguished writers, but which nevertheless must receive a further examination here.

But it will be useful first to record the actual discharge of the Mississippi in the extreme high water of 1851.

Below the mouth of the Red river, when the surface had receded  $2\frac{3}{16}$  feet from its highest mark, the discharge per second was found, by measure-



ments made April 26th, 1851, as already stated, to be-----	1,054,000 cub. ft. p. sec.
To this add for the diminution of the discharge due to the reduction of the surface, $2\frac{3}{16}$ feet, by a formula to be hereafter presented.-----	80,500

And we obtain for total discharge of the high water of 1851--	1,134,500 c. ft.
This sum, however, expresses only the discharge through the channel. To obtain the total dis- charge we must include the volume vented by the Atchafalaya. The discharge of the Atch- afalaya, below the mouth of the Bayou de Glaise, April 26th, 1851, was-----	122,700 cub. ft. p. sec.
Add for the diminution of the discharge due to the reduction of the surface there, $2\frac{1}{16}$ feet, at that date.-----	12,800

Total discharge per second of the Atchafalaya during the high water of 1851-----	135,500 c. ft.
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Aggregate discharge per second of the Mississippi and Atch- afalaya together, at high water of 1851-----	1,270,000 c. ft.
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But the flood of 1851 was three inches lower than that of 1850, immediately below the mouth of Red river. We cannot, therefore, estimate the high water discharge of the Mississippi and Atchafalaya together, at the top of the flood of 1850, at less than-----	1,280,000 cub. ft. p. sec.
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These results apply to observations made on the Mississippi above the Roccourci cut-off, and on the Atchafalaya just below the mouth of Bayou de Glaise.

There is a fact elicited by these investigations, and others conducted at higher points on the river, of great importance in this inquiry, and which has apparently heretofore escaped observation. It is the curious circumstance that the actual channel of the Mississippi—or what may be designated as the *Mississippi between banks*—carries more water, in times of flood, towards the head of the delta, than near the mouth of Red river, or thence to the sea. In other words, more water is discharged by the actual channel of the river immediately below the mouth of the Ohio, or even above the mouth, as high up as Cape Girardeau, than passes by Natchez or New Orleans, or any intermediate point.

The discharge of the Mississippi per second below New Or- leans, at the top of the flood of 1851, (from measurements taken June 16th, and corrected for extreme high water,) was-----	995,000 c. ft.
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The discharge through the channel below the mouth of Red river when the surface was highest, June, 1851, was	1,134,500 c. ft.
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The discharge of the channel at Memphis, at the top of the flood of May, 1850, as deduced from the report of Mr. Robert A. Marr, United States navy, (see note B,) was-- 958,500 c. ft.  
 The discharge, one mile below the mouth of the Ohio, June 10, 1851, while the water was yet seven feet ten inches below the high water of 1850, and *nine feet* below that of 1849, and rising about one foot per diem, was ----- 1,223,000 c. ft.  
 The discharge about one mile above Cape Girardeau, June 17, 1851, when the water was  $4\frac{1}{6}$  feet below the high water of 1844, was----- 1,025,000 c. ft.  
 The discharge at this point, above the mouth of the Ohio, during the high water of 1844, must have been at least----- 1,200,000 cub. ft. p. sec.

These quantities, it will be observed, are in all cases the volumes which flowed down between the banks of the river, and are exclusive of the waters of overflow which enter the swamps above and feed and maintain the floods below.

If we compare the volume discharged in 1851 below the mouth of the Ohio, while the flood was yet nearly eight feet below the high water of 1850, with that known to have passed Memphis at the top of the flood of 1850, we will have data fully to justify the conclusion that more than forty per centum of the volume discharged by the channel immediately below the mouth of the Ohio, passes over into the swamps of the southern counties of Missouri, and escapes the measurements at Memphis. And, in order to form a correct judgment of the masses of water to be dealt with, in the attempt to control the floods of this river, it must be further observed that a great volume also leaves the channel of the Mississippi *above the Ohio*, and passes around through the swamps of Missouri, and consequently escapes even from the measurements below Cairo.

No effort has yet been made to ascertain by direct measurement the volume of water which in times of flood finds its way through the swamps on either side of the river; though this is indeed a very important element in the present inquiry. It was too late in the season for the writer to undertake that work, after he had ascertained its true bearing upon the subject on which it was his duty to report. To do it properly, preparatory surveys should be made across the swamps before the flood comes down, so that the wave might be traced and the volume of overflow determined from point to point, as it advances.

The quantities which are here stated, differ widely from the current estimates of the high-water burden of the Mississippi. But as they result from careful soundings, and simultaneous observations upon the velocity at each point where the depth was taken, so as to divide the section of the river into numerous portions of which the area and velocity were known, they cannot possibly deviate materially from the precise truth.

#### LAWS OF DRAINAGE.

Several foreign writers on hydraulics have published formulæ derived from experiments, to exhibit the relations between the depths, slopes and velocities of running streams. But their various equations are almost all derived from each other, or built upon the same observations; while these observations, limited in number, have been made on streams of very small

dimensions. Where they are applied to great rivers, like the Mississippi or Ohio, they fail to give results in close agreement with the recognised facts. It has therefore been deemed advisable, indeed necessary, to derive new and better formulæ from a wider range of experiments—embracing great rivers of gentle slope in full flood, and passing from those to smaller streams of abrupt descent, and in various conditions of their channels. But great difficulties were encountered in the attempt to frame such a formula from observations on the flow of the Mississippi. The movements of this great river are remarkable, and need to be carefully studied before the resulting law can be confidently applied. The river descends on an average slope of about three and a quarter inches per mile, and the mean velocity of its current is, of course, due to that slope. Yet it not unfrequently happens, that while the mass of the water which its channel bears is sweeping to the *south* at a speed of four or five miles per hour, the water next the shore is running *to the north* at a speed of one or two miles per hour.

It is no unusual thing to find a swift current and a corresponding fall on one shore towards the south, and on the opposite shore, a visible current and an appreciable slope towards the north. In other words, the water is often running rapidly *up stream* on one side of the river, while sweeping with equal or much greater rapidity down stream on the opposite side.

It is obvious, therefore, that no single or merely local observation on the rate of descent of the stream can be depended on for the determination of that element of an equation. The apparent slope is at every point affected by the bends of the river, and the centrifugal force acquired by the water in sweeping round the curves, and by the eddies which form on the opposite side, under the salient angles.

The surface of the river is not, therefore, *a plane*, but a peculiarly complicated warped surface, varying from point to point, and inclining alternately from side to side.

To neutralize in some degree the effect of such variations on the littoral measurements of the slope, levels and soundings were taken at different points along the shore not very remote from each other, and mean slopes, depths and velocities derived from many observations. As a check to the results, and a guard against material error, the average slope, depth and velocity was obtained for considerable distances, embracing many bends of the river. And as a further check, the slopes, depths, areas and velocities of the tributaries and outlets of the Mississippi, and of various small mountain streams, were collected and compared. A formula was then sought which should express the maxima or central velocities, in terms of the slope and maxima depths of each of these various streams.

The equation produced by these investigations is here submitted, with the observations from which it was derived, and its application to each set of observations.

Let  $d$  represent the maximum depth of the river, in feet, at the place of observation;  $f$ , the slope of the surface, in feet per mile;  $v$ , the velocity of the central surface current, in feet per second; then the formula proposed is:

$$v = \frac{8}{10} \sqrt{d f} + \frac{d f}{20}.$$

The application of this formula to many of the observations, with the amount of discrepancy in each case, will be found in note C.

It was further ascertained, from numerous observations conducted with much care, that the *mean velocity* of a great river, in a straight channel, is

about eighty per cent. of its maximum velocity, as has been obtained by De Prony and others, for smaller streams.\* This proportion is close enough for any practical application needed in this paper; it is, probably, as close a general approximation as can be made in the premises.

There is no necessity of any formula to determine the actual discharge of the Mississippi for any given height of flood or position; that has been done, as far as is necessary for any practical purpose, by direct measurement. But it is necessary to have some means of determining approximately what will be the increased height of a flood, due to any given increase in the volume discharged, when the general dimensions and slope of the river are given.

The formula above will be applicable to this object, and will be frequently referred to in the course of this report. That formula expresses the value in feet per second, of the central surface velocity. Eight-tenths of that value is the approximate mean velocity of the whole section; which being multiplied into the area of the section, in feet, will show the discharge in cubic feet.

It will be expedient here to make two applications of this formula, assuming for the constants, dimensions corresponding with the general features of the Mississippi from Donaldsonville to Red river. We will find, by referring to the two preceding tables, that the general mid-channel depth, or the value of  $d$ , may be fairly assumed at one hundred and fifteen feet; the general width of surface at about 3,300 feet; the general slope, at high water, at  $\frac{2.5}{100}$  of a foot per mile; and the average area of water-way, at 215,000 square feet.

By substituting these quantities in the formula, we shall have for the usual mid-channel velocity at high water,

$$v = \frac{8}{10} \sqrt{115 \times \frac{2.5}{100}} + \frac{115 \times .25}{20} = 5.73 \text{ feet per second.}$$

The mean velocity should be eight-tenths of this sum, or

$$v = 4.584 \text{ feet per second.}$$

The discharge per second will then become

$$D = 215,000 \times 4.584 = 985,560 \text{ cubic feet per second.}$$

But, if the surface should now rise 12 inches higher, in consequence of an increased supply of water, the value of  $d$  will become one hundred and sixteen feet; the slope, or value of  $f$ , will be  $\frac{2.51}{100}$  feet, and the area of the average section will be increased to 218,300 square feet.

By substituting these quantities in the formula, we obtain for the velocity in mid-channel way,

$$v = \frac{8}{10} \sqrt{116 \times \frac{2.51}{100}} + \frac{116 \times .251}{20} = 5.8156 \text{ feet per second.}$$

The mean velocity is therefore, in this case,

$$v = 4.6525 \text{ feet per second.}$$

The area of the channel, when the depth is increased one foot by the elevation of the surface, is also increased, and becomes

$$A = 215,000 + 3,300 = 218,300 \text{ square feet.}$$

The discharge per second will be, in this case,

$$D = 218,300 \times 4.6525 = 1,015,619 \text{ cubic feet per second.}$$

\* The precise figures given by De Prony are,  $v' = .8164580$ ; but the writer pretends to no such accuracy.

Comparing these results, we perceive that when the river is at its usual high-water stage, under the circumstances assumed for the example, the discharge per second is----- 985,560 c. feet.

And when raised twelve inches higher, by any accidental increase of supply, the discharge must be----- 1,015,640 c. feet.

From which we deduce for the volume which must be supplied to the channel when in full flood, in order to raise the surface one foot from Red river to Plaquemine, per second 30,080 c. feet.

In applying this formula, however, it is proper to observe that there are two considerations which operate to increase the volume that would be required to produce this increased elevation. When the river is at or near its highest mark, it overflows long strips of level ground between the natural bank and the levee, where there is a sensible, though inconsiderable, motion. This increased area will assist in venting a part of the increased supply.

Again, when the river is rising, the slope of the surface at the point where the rise is progressing, is materially greater than the slope of the surface when at its highest limit, and still greater than the slope which has place after the water has begun to recede. The effect of this consideration upon the velocity and discharge of a river, in cases of rapid rise, is frequently very great. It often happens, at the beginning of a flood in the upper part of the Mississippi, that the water rises at the rate of three or even four feet in twenty-four hours. The average velocity before the rise may be assumed at two and a half miles an hour. The water, therefore, travels at the rate of sixty miles a day. Consequently, when the first signs of the flood are visible at a point sixty miles below the mouth of the Ohio, it may have risen three or four feet at the mouth; and the average slope must have experienced an increase, in that space of sixty miles, of  $\frac{1}{60}$  of a foot per mile—which is about one-fifth of the slope of the river before the flood commenced. It is true that, in the lower part of the river, and when the wave has nearly reached its highest mark, the water rises much more slowly, and the increase attributable to this cause is far less serious, than in this example. But even in this case the effect will be perceptible; and it will not therefore be prudent, in the judgment of the writer, to estimate the increased volume needed to raise the surface one foot in extreme high water, at a less average than 35,000 cubic feet per second.

This is submitted as a mean result, applicable only to the general or average dimensions of the lower Mississippi. No rule can be given which will apply to every position; for the width, depth and area of the stream are most variable; and as the same volume of water must pass through different sections, its velocity, both surface and mean, must be subject to continual change.

#### OF THE CREVASSES.

From the description which has been given of the delta, it will be easy for those not familiar with the formation of the valley of the Mississippi, to appreciate the danger to which the population there is continually exposed in times of flood, from the inundations of the river, consequent on the giving way of the protecting levees. The condition of things in high water is faithfully represented in the diagram, fig. 1. The surface of the river is

there shown to be from five to seven feet above the surface of the cultivated fields on its borders; and the water is prevented from sweeping over these fields by artificial embankments, which now extend in continuous lines on both sides of the river, from below New Orleans to the mouth of the Arkansas—a distance of about 600 miles. These embankments, in most cases, are maintained by the individual proprietors; so that the security of the property of every planter depends both upon his own vigilance and experience and those of his neighbors. This vigilance is not always sufficient for the protection of the country; and it will hereafter be shown that no care can ever be sufficient to guard against the occurrence of overflows; that breaches through the present levees are unavoidable; and that, indeed, such breaches are the necessary safety-valves for the escape of the surplus water, and must continue to have place until other and less costly provision is made.

The water of the Mississippi now usually rises to a level not more than twelve inches below the tops of the levees, and four or five feet above the general surface of the ground immediately behind the levees. This ground slopes off at the rate of three or four feet per mile from the levee to the swamps, or until it reaches a level from fifteen to twenty-five feet below the high water surface of the river. This is shown in the wood-cut below, which is a correct representation of the four and a half miles extending from the Mississippi at Bonnet Carré, about forty miles above New Orleans, to Lake Pontchartrain.

If the levee should here give way, as has already happened, the water would, of course, rush through the breach with the velocity due to the depth of the column and the slope of the plane in the rear of the embankment. With a depth of six feet and a slope of three feet per mile—numbers corresponding with the circumstances of the Bonnet Carré crevasse, as near as any that can now be obtained—the velocity of the current passing from the river into the fields will be at the surface, by the formula,

$$v = \sqrt[5]{3 \times 6 + \frac{3 \times 6}{20}} = 4.30 \text{ feet per second.}$$

The area of the Bonnet Carré crevasse, when running, appears by measurement to have been—if we take the entire width of the levee which was destroyed, and the high-water line of the surface while the crevasse was in full activity—about 43,500 square feet. The volume discharged would appear from these elements to be,

$$D = 43,500 \times 4.3 \times \frac{1}{60} = 149,600 \text{ cubic feet per second.}$$

This is the discharge which we obtain for that great crevasse by using those visible evidences which yet remain. But there is one circumstance which will lead to the conclusion that this crevasse, at no period of its running, gave vent to so great a volume as is deduced from these elements.

A portion of the present gap must have been created after the water began to recede, as the current could not have failed to continue to cut away the levee as long as water continued to pass through the opening with sufficient velocity for that purpose. We have no means to determine what deduction should be made on account of the enlargement of the opening during the fall of the water; but it is quite probable that 100,000 cubic feet per second is the extreme estimate to be admitted for the discharge of this crevasse when at its maximum.

Many other crevasses were discharging simultaneously with that of Bonnet Carré during the winter and spring of 1850; but there are no means of ascertaining the total discharge through all the breaches for any portion of

that period. It has been estimated by a distinguished engineer of New Orleans, M. Buisson, on the best data that he could obtain, that at one period no less than 536,778 cubic feet per second was drawn off laterally by the crevasses of that year. But as this estimate seems to have been made by using the actual breadth of the opening, as it was measured after the flood had subsided, it is probably in excess, a part of the breach having doubtless been created during the fall of the water.

But, if we make the most liberal allowance for that consideration, and assume that one-half of the total width of opening was produced during the subsidence of the waters, we shall still have a discharge of nearly 300,000 cubic feet per second for the crevasses of 1850, resulting from the facts exhibited by M. Buisson.

It is, however, quite impossible now to ascertain the discharge of the crevasses of past years with any approach to certainty. But in 1851, when there was no remarkable flood in the Mississippi, the writer had the means of making an approximate estimate of the volume discharged by all the crevasses then in activity below the mouth of Red river.

To arrive at this volume, an attempt was made to measure the discharge of the Mississippi river below the mouth of Red river, the lowest of its tributaries, and again below all the crevasses at the time of extreme high water. Then by taking the difference between the results, it was hoped to obtain an expression for the volume lost by the way. But impediments to the perfect execution of this plan occurred, and the water had receded somewhat, at both points from its highest mark, before the measurements could be completed. We are obliged, therefore, to make some allowance for this fall, in order to obtain the true discharge at either point.

The following are the results deduced from the measurements:

The discharge of the Mississippi below the mouth of Red river, per second, at the top of the flood of 1851, was-----	1,134,500 c. feet.
The discharge below New Orleans during the high water of 1851 -----	995,000

Lost between Red river and the place of observation, eleven miles below New Orleans-----	139,500 c. feet.
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This loss is attributable partly to the discharge of the crevasses below Red river, and partly to that of the two natural outlets, the bayous Plaquemine and La Fourche, which are still in activity.

The high water discharge of the Plaquemine was found by measurement to be-----	28,500 cubic feet per second.
That of the La Fourche-----	10,200 " " " "

Total discharge of the two natural outlets 38,700 cubic feet per second.

Now, by deducting the discharge of these two natural outlets from the total loss of water between the mouth of Red river and a point eleven miles below New Orleans, we obtain the discharge of all the crevasses at the time of the extreme high water of 1851. This discharge was 100,800 cubic feet per second. Neglecting the fraction, we may assume that in 1851 a volume equal to 100,000 cubic feet per second, or about ten per

cent. of the total discharge of the Mississippi at New Orleans, escaped from the channel, and passed through the vents in the artificial levees below Red river.

These measurements were made in the best possible conditions of wind and weather; and though all such computations and measurements are liable to some error, it is believed that these may be relied on as accurate enough for any practical deductions which it may be desirable to draw from them.

But, we have already seen that if the volume discharged by the river at high water were increased 35,000 cubic feet per second, the surface would be raised below Red river about one foot. We cannot, however, thence conclude, that if the crevasses which, as we have seen, discharged 100,000 cubic feet per second, had been all closed up, the water would have risen, at any point, within a fraction of three feet. These crevasses were distributed all along the coast, and many of them were too far below Red river to affect the height of the floods materially there; while an increase of more than 35,000 cubic feet per second would be required to raise the surface twelve inches at New Orleans. It is, indeed, impossible to say with certainty what would have been precisely the increased height of the flood of 1851, at any point, if the levees below Red river had been high enough and strong enough to support the weight of the water which was upon them. The writer can only express the opinion, the correctness of which he cannot fully demonstrate, that if the levees had withstood the pressure, the flood of this year would have been about two feet higher at and near Baton Rouge, than the line which it actually attained; and, consequently, if the crevasses had not occurred to vent the water, the levees of lower Louisiana, which were only ten or twelve inches above the flood, must have been generally overflowed. It follows, therefore, that if it be determined hereafter to rely exclusively on levees, and prevent the occurrence of crevasses altogether, these levees, to sustain a flood like that of 1851, must be made, from Red river to New Orleans, competent to resist an increase of ten per cent. in the volume discharged by the river; or, in the view of the writer, at least two feet higher than the present banks. This condition, it is apparent, would involve the entire re-construction of the embankments on both sides of the river; and hence, *in order to retain merely the crevasse water of this year*, the levees must be entirely re-constructed, and made two feet higher; or new outlets must be opened competent to vent 100,000 cubic feet per second—which is more than the volume now drawn from the Mississippi, at high water, by the Atchafalaya itself.

#### LOCAL CHANGES AND IRREGULARITIES.

Close observers of the Mississippi sometimes remark singular and often inexplicable phenomena attending its floods and movements; and, in consequence of the insufficiency of the facts which are known, to account for the irregularities, it is customary to regard this river as a river *sui generis*; which sets at defiance the acknowledged laws of hydrodynamics, and disappoints calculations based on recognised principles. But these irregularities are always traceable to some sufficient cause, when carefully investigated and all the attendant facts are elicited.

A *crevasse* will frequently produce a material depression at the point where it occurs, and also both above and below that point. If this *crevasse*



happen to be closed up before the next flood approaches, there will, of course, be an apparent rise in the water where the previous depression had been observed.

A *new levee*, which excludes the water from a large area of swamp previously filled by the overflows, will cause an engorgement of the stream at that point, and a consequent rise, which will extend over a considerable space above and below the new work.

The *bends* of the river, as has been shown, cause its surface to assume a distorted shape. Where the water impinges against the concave shore of a bend, its surface rises a certain amount—the height due to the velocity of impact. But the tendency of the stream is forever to elongate its channel, and make compensating deposits on the salient angles. These points sometimes undergo material changes of position. Sand-bars are washed away from the jutting angles in some cases, and new deposits are formed in other positions. The current, consequently, impinges afterwards against a bank where there was formerly an eddy, and the slope of the surface was up stream. The direction of the current being thus reversed, there will necessarily be a change in the high-water mark produced by an equal flood, which may, in extreme cases, under like circumstances in other respects, be almost equal to the sums of the heights due to the reversed velocities. From this cause alone, having its origin in the tortuous course of the stream, there must occasionally occur local changes of more than twelve inches in the heights of equal floods, or floods produced by equal volumes of water.

The *wind* is another fruitful source of local irregularities. A prevailing breeze in a given direction might produce results which would defy speculation, unless its effects were investigated as a distinct study, with the aid of correct maps of the river.

The writer once had an opportunity, in running a test level along both shores of Chautauque lake, a narrow sheet of water, to detect a variation in the surface of more than eight inches in twenty miles, produced entirely by a continued but moderate breeze. Indeed, such effects are of daily observation on all lakes and tide-water streams. But in the channel of a winding river, like the Mississippi, they are much greater than in ordinary cases, and much more difficult of detection. The same wind that increases the height of a flood in one bend will reduce its height in the next; so that while the flood at a given point is even with the flood of a previous year, it may be found at some place a few miles distant, under circumstances precisely similar in other respects, many inches higher or lower than the mark of the previous flood.

This may be readily explained by a diagram (fig. 3) which is taken from La Tourette's map of *Millikin's bend*, above the mouth of the Yazoo.

Here the course of the Mississippi is descending from A to F. The arrows WW, represent the direction of the wind. The effect of this breeze, acting upon the surface of the water along the reach from E to D, will be to retard its flow and cause an accumulation in the bend at D; while at the same time the effect of the same breeze, acting along the reach from C to D, will be to hasten the surface forward and increase the accumulation at the same point—in the bend D.

But, in the mean time, this same current of air, driving the surface water forward from C to D, pushes it also back from C, in the reach BC, and tends to retain it at B. The water is thus driven away from C, along both the channels CB and CD, while it is driven forward by the same wind to D,

along both the channels CD and ED. The consequence will be that while this wind prevails, there will be a decided accumulation of water at D, and a material reduction of the surface at C. The floods at these points will not correspond in height with a previous flood when the direction of the wind was different, and much less if its direction in the previous flood were reversed.

In a river as tortuous as the Mississippi, every wind that blows, no matter what may be its direction, must produce such discrepancies in some parts of its course. And in constructing a profile of two consecutive floods, as has been attempted for the floods of 1850 and 1851, in this report, we must not be surprised if we sometimes encounter, in close investigations, singular discrepancies.

The *smaller tributaries* are also, frequently, the cause of such irregularities as are here under consideration. A very inconsiderable stream discharging suddenly for a few days, or hours even, a large volume into a full river, will produce a material elevation as well above as below the mouth of the tributary. Consequently, before attempting to explain the cause of a local variation in consecutive floods, we must know the condition of the nearest tributaries at the respective periods.

It is not the intention here, however, to enter into a minute discussion of the uninteresting and useless details of the recent floods in the lower Mississippi. The great object before us—to contrive measures for the protection of the delta from overflow—is not to be attained by a microscopic examination of such local phenomena. The solution of this problem turns upon other and greater elements, which we are now in a position to discuss with profit. The first step in seeking a practical result is to determine with certainty the prominent causes of the increasing inundations, and to obtain the means of estimating correctly the respective values of such causes.

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## PART II.

### CAUSES OF THE INCREASING OVERFLOWS OF THE MISSISSIPPI.

The object of the investigations which have been ordered, of the condition of the delta, is to decide upon some appropriate mode of protecting the country against the annual inundations of the river. To be able to provide a remedy for this great evil, it is necessary in advance to satisfy the mind of the causes which produce the evil. These causes, it will now be shown, are essentially *artificial*. The floods are increased in frequency and in height by artificial means, and it is not unreasonable, therefore, to look for relief to artificial appliances.

Of the various influences to which the increasing elevation of the recent floods of the Mississippi is to be referred, there is but one that can be regarded as belonging to the class of *natural causes*. This exception will be considered first.

### OF THE PROLONGATION OF THE DELTA.

It is a popular belief that the bed of the Mississippi is gradually *rising*, and to that assumed cause is not unfrequently attributed the constantly

increasing height required for the protecting levees. But this belief can be traced to no better evidence than the fact, that certain points, which formerly exhibited deep soundings, have subsequently become shallower—a circumstance which is attributable altogether to the shifting character of the shores and bottom of the river. As consequences of the changing and movable character of the soil through which the Mississippi flows; points which are at one period curved, subsequently become salient; shores that at one time wash and curve in, at a later date fill up; places which, during one period, are gradually growing deeper, at another become less deep, and to the sounding-line indicate an elevation of the bed. There is, in fact, no evidence of any change in the general level of the river's bed, beyond what may be inferred from the evident prolongation of the delta, the lengthening out of the course of the stream, and the consequent diminution of the plane of descent. But this elevation of the bed is not indicated by any increased depth of water, though it must of necessity occasion a corresponding elevation of the surface. Any increase in the height of the floods, produced by a given body of water discharged in a given time, beyond what may be justly attributed to this extension of the delta, must therefore be sought in other adequate causes.

It is important, then, to ascertain what influence the progress of the land into the gulf may have upon this question, in order to be able to judge of the ability of society to contend permanently against this, the only visible natural cause of increasing floods. This is a subject upon which we are compelled to reason without the aid of precise and satisfactory data. The writer is unwilling to admit a mere speculation in his report, but in this case it cannot well be avoided.

At whatever point we place the original head of the delta, at the time when the sea flowed up to that point, there must have been a fall in the Mississippi there, or in that vicinity, equal to the whole descent from the present level of the river at that place to the level of the ocean. Now, the first chain of rock which is supposed to form the bed of the Mississippi, is found at the village of Commerce, about thirty miles above the mouth of the Ohio, where the rocky hills approach the shore on both sides of the river, and are possibly connected by a bed of rock in the bottom of the channel. The low-water surface of the river at this "Chain" is about two hundred and eighty-five feet above the Gulf of Mexico. It follows, therefore, that if, at the period when the formation of the delta may be supposed to have commenced, the level of these rocky hills and the level of the ocean were the same as they are now, there must have been, as before stated, a cataract above the mouth of the Ohio, with a fall of two hundred and eighty-five feet at low water, or nearly double the actual perpendicular descent of the Falls of Niagara. The water of the Mississippi must have plunged over this cataract, or over great rapids, directly into the sea, which, by the supposition, then flowed up beyond the mouth of the Ohio. In the course of time, the sea must have been filled up by the sediment brought down by the Mississippi river, and the Mississippi has thus gradually risen upon the bed formed by its own deposits.

As the deposit has been pushed out into the sea, the slope of the river has progressively diminished; and as the slope of the plane has diminished, the surface of the river has risen, and the bottom, of course, has also been in like manner elevated.

It is not contended here that the true head of the delta is demonstrably

to be found above the mouth of the Ohio. It is quite possible that there were great rapids only here, and other rapids nearer the sea, at one or more points lower down the stream. The force of the argument which is made will not be in the least impaired by an erroneous location of the original head of the delta, and it is no part of the present purpose to engage in irrelevant geological speculations.

It will be assumed, therefore, that the head of the delta was once above the mouth of the Ohio, and two hundred and eighty-five feet above the level of the sea; and that the depth of the sea was then about the same where the delta now is, as the present depth of the Gulf of Mexico within a few miles of the Balize. That since that period the delta has been formed by the annual accumulation of sediment brought down by the stream and deposited in the sea. The inevitable conclusion must then be, from this hypothesis, that the slope of the plane must have been, at various periods, as represented in the annexed diagram, fig. 4.

Originally, or at some period anterior to the formation of the delta, the river sloped off abruptly, forming a cataract or rapids, from the hills at Commerce to the point A; subsequently, the whole space embraced in the triangle H A B, became filled up by sedimentary accretions, and the river sloped off from H to the mouth of the Arkansas, with a descent represented by H B, more than twice as great as its present rate of descent. By degrees, and in the course of ages, these accumulations reached the mouth of Red river, at C; and in more modern periods were extended on to the present shores of the gulf, at D.

It is manifest, therefore, that while this process is going forward, the surface of the river must be rising, and that, as the surface is elevated, the bottom must also simultaneously rise. In fact, it is the elevation of the bed which causes the rise of the surface.

Nothing can be more palpable than the gradual elevation of the surface of the Mississippi, in so far as it is attributable to this cause; and it is therefore most manifest, that while the river is thus rising above the sea, and the levees so confine the water to the channel as to prevent simultaneous deposits upon its banks, the floods will gain upon the embankments, and *ultimately* overtop them.

To this extent, it must be admitted that the rise of the bed of the river will forever be a cause of increasing inundations. But it remains for us to ascertain whether this cause can be sufficient to account for any portion of the present sufferings of the population of the delta, or whether its operation has not been too slow even for detection within historical periods.

The area of the delta is not accurately known, but it will be estimated in this report, in the absence of data from which to make a more accurate approximation, at forty thousand square miles.

It is known from actual survey, that the mouth of the Ohio, at low water, is two hundred and seventy-five feet above the level of the sea; and it has been ascertained by the levels taken under the direction of the writer, that the slope of the Mississippi near the mouth of the Ohio is about five inches per mile, (see note D.) The total elevation then, at Commerce, is, as stated, very nearly two hundred and eighty-five feet above the sea. Adding for the average height of the banks thirty-five feet, we have three hundred and twenty feet for the level of the Mississippi bottoms near Commerce, above that of the Gulf of Mexico. But, as the plane of the delta slopes off gradually and uniformly from this village to the gulf, the average level of

the whole area will be but about one-half of this height, or one hundred and sixty feet above the sea; and if we should make a reasonable allowance for the greater breadth of the plane near the sea, than nearer its head, it is probable that one hundred and forty feet would be found to be a very fair estimate of the average depth of the whole deposit above the level of the tide.

Now, it has been found by the experiments of Professor Riddell at New Orleans, conducted with great care and often repeated, that the mean bulk of sedimentary matter transported by the river, when solidified into coherent earth, is about  $\frac{1}{1000}$  part of the volume of the water in which it is suspended. If now, superadded to these data, we could obtain the total annual discharge of the Mississippi and its tributaries, we would command all the facts necessary to compute approximately the amount of the annual deposits brought down by the current. But there are no sufficient observations to enable us to estimate the total discharge of the Mississippi and its outlets for any one year. This volume has been estimated by Professor Forshey, from numerous observations of his own, made through a long series of years, at an average of 12,250,000,000,000 cubic feet; and for the year 1849 at 13,338,040,000,000 cubic feet; and these estimates have been adopted by numerous engineers who have discussed the great problem of controlling the Mississippi. But though the period embraced by the investigations upon which this report is founded, did not permit an attempt to estimate the aggregate annual drainage of the Mississippi valley, with any approach to accuracy, the observations which were made are, nevertheless, sufficient to justify the conclusion that the annual discharge of the Mississippi and its natural outlets, when fully ascertained, will be found to average at least fifty per cent. more than the received estimate, or probably not less than 21,000,000,000,000 cubic feet per annum. This volume, though by no means regarded as accurate, will be assumed as the basis of the conclusions to be drawn in the matter before us, where great precision is not at all needed.

Now, it has already been stated on the authority of an accomplished manipulator, (Professor Riddell,) that the  $\frac{1}{1000}$ th part of the total annual discharge of the river consists of sedimentary matter. Whence we find for the annual deposit of sediment, or the volume annually left in the gulf at or near the mouth of the Mississippi, 7,000,000,000 cubic feet.

This mass of material would be sufficient to raise to the height of one hundred and forty feet a portion of the delta equal to  $1\frac{1}{2}$  square miles. To form the whole delta, or that portion thereof which is now above the sea—covering, as estimated, 40,000 square miles—would have required a period of  $\frac{40,000}{1.25} = 22,222$  years.

This result is, of course, based upon the supposition that this vast formation is the product of the forces now at work—the visible causes now in action.

If the delta has resulted from the deposits of the river, then it is demonstrated from these facts—not minutely ascertained, but nevertheless near enough to positive accuracy for any desirable practical conclusion—that more than 22,000 years have been occupied in the formation of that portion of the delta which is now above the plane of the sea.

But it is known that when we proceed a few leagues out into the gulf, we find soundings of more than fifty fathoms, and over extensive portions of the gulf, of more than one thousand feet. Though we cannot prove that this, or any other given depth, was originally maintained up to the assumed

head of the delta, it is, nevertheless, not an unreasonable supposition, that, at periods anterior to the commencement of the deposite, the bed of the gulf sloped up uniformly from its present depth near the Balize to the shores then found above the mouth of the Ohio. This under-water deposite must therefore have required a mass of matter more than equal in volume to that now found above the surface of the ocean. Hence we are authorized to conclude that the total formation known as the delta of the Mississippi, if it be, as is scarcely deniable, the result of sedimentary deposite, has required a period for its formation by the river, of something like 45,000 years.

Now the average length of the delta, from north to south, is about five hundred miles; and if its total formation has required a period of 45,000 years, each mile of the progress of its shore into the sea has consumed an average period of  $\frac{45,000}{500} = 90$  years.

This is to be regarded as a maximum or an extreme estimate of the average march of the whole coast, southwardly from the beginning of the deposite; but it is certain that the progress of the entire front, in later periods, must have been much less rapid, both in consequence of the increase of the depth of the gulf as we proceed towards its centre, and the greater longitude of the coast, which has, in modern days, been advancing seaward.

It will be observed that this result applies to the extension of the whole gulf shore, from the mouth of Pearl river to Vermillion bay, in a southwardly direction. But, immediately at the point where the Mississippi enters the gulf, it pushes out a narrow peninsula, with numerous mouths, and for a period makes its deposite opposite to these mouths, and laterally therefrom, to only a very limited distance on either side. While it occupies this position, as at the present period of its history, and while all the material which it bears is used in forming this narrow peninsula, the apparent progress of the land upon the sea is much greater than the actual average advancement of the whole front of the delta—which can only be set forward by the shifting of the immediate mouths of the river.

There appears to be plausible evidence of a present local progress of the immediate embouchure of the Mississippi, of not less than one mile in twenty years, showing a local or limited march four or five times as great as the average progress deduced above for the whole front from remote periods.

Now it is this local progress which marks the present rate of elevation of the bed of the river.

The level of the river at New Orleans, in times of flood, may be stated to be 13.5 feet above mean tide, and the distance from the city to the gulf at 105 miles.

The average slope of the river from New Orleans to the mouth, at high water, is, therefore,  $\frac{13.5}{105} = .128$  of a foot, or  $1\frac{1}{2}$  inch per mile.

If that same average slope be maintained as the mouth of the river moves forward—which it will be, very nearly—each mile that the land gains from the sea will involve an elevation of  $1\frac{1}{2}$  inch in the high-water surface, and consequently in the bed of the river at New Orleans. This will produce an elevation—while the Mississippi continues to discharge at its present embouchure—of about  $7\frac{1}{2}$  inches in the course of a century; which is certainly an extreme estimate.

It is sometimes conjectured that the city of New Orleans is destined to ultimate destruction from the gradual, and, as it is supposed, the visible rise

of the bottom of the river. But it is not easy to detect the danger in any agency to which the assumed catastrophe has ever yet been attributed. There is, in fact, no presumable rise of the bed of the river, but that which is referable to this one cause—the gradual extension of the delta.

The idea which has acquired a certain hold upon public opinion, that an appreciable elevation of the bed of the Mississippi has been produced, and is still going forward, in consequence of the extension of the levees, has no foundation in experience or philosophic deduction. The extension of the levees, it will be hereafter shown, exercises great influence upon the height of the floods; but not, as is supposed, by raising the bed of the river. It is true that by the increased transporting power which the levees give to the river, the Mississippi is enabled to convey greater deposits into the gulf; and thus, in some slight degree, accelerate the formation of land opposite its mouths. To this amount, and no further, the extension of the levees may promote the elevation of the bed; but this is not an appreciable quantity.

It is customary to point to the Po, in evidence of the effect of embanking the coasts of streams in producing an elevation of the bed of the river. And it is assumed that because the bottom of that stream has been greatly elevated since levees were there commenced, the obvious rise of its bed is directly attributable to the levees. But the true cause of the rapid elevation of the bottom of the Po, and of all the rivers that empty into the Adriatic, is to be found in the great quantity of earthy matter which they transport to the sea, and the shallowness of the gulf into which this material is conveyed. This deposit, in the course of twenty centuries, has produced a prolongation of the delta of the Po, estimated at about twenty-five miles, and has converted cities which at the commencement of the Christian era were respectable seaports, into inland towns, at this day twenty miles from the sea-shore.

If we now assume that the town of Ferrara is about fifty miles from the coast, and that the slope of the Po in high water, from Ferrara to the gulf, is seven inches per mile, we will perceive how an extension of the delta twenty miles into the gulf will have brought the tops of the levees above the roofs of the houses in that city.

In the annexed wood-cut, (fig. 5,) F represents the position of Ferrara on the Po as it was twenty centuries ago; M the mouth of the river or the shore of the Adriatic at that period; and M' the position of the shore at this time—MM' representing the progress of the delta in the course of two thousand years.

It is obvious from the figure that M n will represent the elevation of the bed, or the present height of the bottom of the river, above the level of the sea at the ancient shore of the Adriatic. And if the descent of the Po is now about seven inches per mile, this elevation must be twelve or fourteen feet, and very nearly the same at Ferrara.

If we now add twelve feet to the height of the embankment originally required to protect the ancient town from the floods, we will perceive that the present levees must necessarily be level with, or above, the roofs of the smaller class of houses in the modern city.

In the course of twenty centuries, in consequence of the prolongation of the delta of the Mississippi, no doubt the levees required to protect the city of New Orleans will have risen to a great height also—probably to a height of ten or twelve feet above the actual plane of the streets—unless the river, deserting its present bed below the city, form a new outlet

into Lake Borgne, and transfer its sedimentary deposits into the deep water of the gulf south and east of Ship island. This is a consummation, as we shall see, much to be desired. But it is not those effects that may be witnessed in the course of centuries which it is the intention now to discuss. The present rate of progress of the delta will soon be solved approximately by the coast survey, when we shall have all the material for speculation upon the future geological changes liable to have place in consequence of the prolongation of the peninsula at the mouths of the Mississippi. The present inquiry will be limited entirely to those evils which at this moment threaten the prosperity and existence of lower Louisiana, and the worst effects of which are likely to be witnessed by men now living. The elevation of the bed of the river, consequent on the progress of the delta, is clearly not one of these. That is too slow to concern the present generation.

It is not to the gradual but certain work of nature, in filling up the sea by the deposits brought down from the plains and mountains, that the increasing height of the floods now felt is to be attributed. These, we shall find, are traceable directly to the labors of men, long and still vigorously engaged in draining the waters, by various processes, more rapidly from the country above, and destroying those natural reservoirs which originally protected the country below.

#### OF THE CUT-OFFS.

Among the causes of the inundations that have recently produced so much loss and distress on the lower Mississippi, in the opinion of the writer, must be enumerated the *cut-offs* which have been made at and below the mouth of Red river. It is true that men of science have denied, and do still contest this point. But the opinion here entertained rests on what are deemed to be the natural laws of the flow of the river, and, moreover, on indisputable results. The theory which is entertained by many intelligent persons, that by shortening the channel and cutting off the bends of the river, the velocity of the current will be increased, the channel scoured out wider and deeper, the floods conveyed more rapidly to the sea, and the surface therefore reduced, is all perfectly true, excepting the practical conclusion.

It is true, that by cutting off a given bend the flood will be hastened forward, and a greater volume will therefore be discharged through the channel in a given time. But it will not be discharged directly into the sea, and thus relieve the river of its burden. On the contrary, the water will be drawn more rapidly from the river above the bend, and the level of the surface there will be reduced; *but it will be precipitated more rapidly into the river below the bend*, and the surface there will be necessarily raised. This is precisely the error which led the State of Louisiana, in face of the sound advice of several eminent engineers, into the unfortunate experiment of cutting off the Raccourci bend, in 1848.\* The velocity of the river, it was contended, would be increased and the height of the floods therefore reduced. They were reduced *above* the bend, from whence the

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\* It is due to Colonel William S. Campbell, civil engineer, to say that he constantly resisted this work before the legislature; and to Colonel P. A. Hebert, at that time the chief engineer of Louisiana, to record that he also opposed it as long and as warmly as an officer of the State government could oppose the will of the legislature.



water was more rapidly drawn ; but they were increased *below* the bend, where it was more rapidly thrown.

The reason in favor of shortening the channel would have been sound if it had been proposed to cut off a part of the lower portions of the river, as will be proposed hereafter in this paper, and admit the water into the gulf at some point further from the sea than its present mouths. The effect of such a course may be appreciated by a diagram. (See fig. 6.)

Let  $M'$  be the present mouth of the river, near the Balize, and  $S' M'$  the present slope of the surface of the stream at high water.

If we cut through the natural levee which now confines the water, and let the river into the gulf at  $M$ , fifty miles higher up, we shall obviously reduce the surface at  $M$  an amount equal to  $M m$ —the whole of the descent in the lower fifty miles of the river, or about six feet. The surface of the river will then be found in the new line  $S M$ , *below* that which marks its present slope.

But a very different state of facts results from cutting off a bend of the river in the upper portions of its course. The Mississippi descends from the head of the delta to the head of tide in obedience to what may be designated as *the law of uniform descent*. The plane upon which it rests slopes down to the ocean, as already shown, at the average of eight inches per mile. But the Mississippi flows on tranquilly and smoothly, in whatever direction it chances to take, seeking every point of the compass—sometimes parallel with, and sometimes at right-angles to the plane which supports it ; sometimes directly down that plane, and sometimes in a direction directly opposed to that of its descent ; but always with the same almost uniform and unbroken slope. That slope averages at high water a little over  $3\frac{1}{4}$  inches per mile, from the mouth of the Ohio to the vicinity of the tidal influence.\* There are of course local irregularities caused by the great flexures of the river, and by sand bars, which produce occasional acceleration, and even littoral *inversions* of the current ; but these are local and limited influences, and can scarcely be regarded as exceptions to the general law of the river's motion.

Now, when a great bend is cut off, as at Raccourci, below Red river, the total descent around the bend—which was in this case  $4\frac{1}{2}$  feet at high water—is suddenly concentrated in the narrow neck, of less than one mile, across the bend. The moment when the cut-off is made, therefore, the slope of the river will assume the form represented in the diagram below.

Here the fall from  $a$  to  $b$ , a distance of one mile across the neck of the bend, is four and a half feet, and consequently the water rushes through the artificial opening, with a speed due to that descent, and to the depth of the new channel. (See fig. 7.)

A few days suffices to wear away the soft material which confines the water, and the reach of the river above is rapidly drained off in some degree, by the increased descent of the surface, and discharged into the reach below. The new surface, therefore, speedily assumes the slope of the line  $a' b'$ —the excess drawn from above being deposited below. The increased draught through the cut-off thus draining the river above more rapidly than it was accustomed to discharge itself around the curve, the surplus water is

\* In this, as in all other computations, the writer is compelled to adopt the distances as reckoned by the river pilots.

necessarily thrown into the river below more rapidly than the channel there had been accustomed to receive and discharge it. The consequence of this increase of supply must, obviously, be a sufficient accumulation below the cut to produce that increase of depth and speed which is necessary to enable the channel there to vent the additional supply sent down, as fast as it is received.

The writer is aware that there is, along the Mississippi, a prevailing opinion in favor of cutting off the great bends and shortening the channel. The interests of the navigation, and of those who depend on the navigation, seem to be promoted by it. But it is an *improvement* of the most dangerous description—one of those things which can be accomplished easily, and without skill, and therefore always liable to be attempted. Besides, experience has shown conclusively that after a cut-off has been made, the lands above are rendered less subject to inundation than they were before, and there is consequently a strong interest always ready to encourage an enterprise that will bring certain relief to a few, even though it may be contended that this relief to them will be disastrous to their neighbors. They contest this fact on the authority of scientific writers; and the minds of men are easily convinced of the soundness of arguments which it is their interest to believe.

We cannot hope to relieve ourselves of the sad effects of these violent changes of the course of the river, by the method proposed in a late report to the Commissioner of the Land Office,\* viz: to commence at the Gulf of Mexico, and straighten the river from the sea towards its source; nor by the popular suggestion of compensating for the increased volume poured down through the cut-off above, by making additional cut-offs below, and thus hasten the drainage of the reach below the upper cut-off. There is no opportunity offered by the bends of the Mississippi for any such compensation. The only cut-offs that can hereafter be made with any show of caution are above Red river, and all that are made there will tend to precipitate the water more rapidly upon the beautiful estates from Natchez to the sea.

The increase of the velocity of the current below the cut-offs, in virtue of the reduction of the length of the channel, cannot prevent the increase of the floods, by giving more rapid vent to the water—for this acceleration is itself only a consequence of the increased elevation of the surface produced by the additional supply.

For these reasons the writer deemed it expedient to examine those bends of the river which seem to offer the greatest facilities for the making of cut-offs, either natural or artificial, with a view to ascertain what measures, if any, were needed to prevent their occurrence by the direct working of the river, or by design.

The points to which attention was specially directed, and the general results of the examinations instituted, will be exhibited in this paper, and in still greater detail in a supplemental report. It may be well to state here, however, that one of these points, the Terrapin Neck bend, above Vicksburg, requires immediate attention, to prevent the occurrence of a sudden cut-off, and the overflow of many valuable estates below it.

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\* Ex. Doc. No. 68, Senate, 31st Congress, 1st session.

## OF THE EFFECTS OF CULTIVATION.

Among the causes contributing to the increase of floods in the rivers of the United States in recent years, it is necessary to include an increased discharge of water due to the destruction of the timber, and the cultivation of territory which was formerly untilled. It is reasonable to suppose that the removal of the forest growth, and the rank vegetation of the virgin soil, will cause the slopes to shed the rain more rapidly into the valleys, and thus produce more sudden and more violent floods than were observed of old.

Indeed, it cannot well be denied that this result must spring from this cause. But, it is not to be overlooked that, at the same time, the removal of the timber gives the sun's rays more direct access to the earth, and thus promotes an increase of evaporation. This increase of evaporation is, of course, at the expense of the drainage; for, as the evaporation increases, the volume of water that finds its way into the streams is necessarily diminished. The effect of clearing the soil of its original growth is thus, at once, to develop two opposite and compensating influences. But it can scarcely be doubted that, as a rule of almost general application, the resultant of these influences will, in the aggregate, be in favor of a great increase of the discharge of the streams, and a material reduction of the evaporation.

But, be this as it may, it is very obvious that the height of the floods is increased by the extension of cultivation and improvement. The increase of evaporation consequent on the exposure of the surface of the earth to the rays of the sun, has place mainly when the sun possesses the greatest power—in the summer season. The effect of clearing the soil of vegetation will, therefore, be to diminish the summer volume, and consequently further to impair the low-water navigation of the streams. But, in winter, when the power of the sun and the resulting evaporation are small, and the rain and snow rest long on the prairies, the necessary effect of removing the timber will be to increase the drainage.

It may therefore be asserted generally, that the effect of cultivation is to increase the evaporation in the summer months, and thus reduce the summer drainage; and to hasten and augment the drainage in the winter months, and consequently increase the height and power of the floods. In short, the clearing of the soil tends constantly to make the water lower in the summer and fall, and the floods higher in the winter and spring.

The area of the Mississippi valley is composed, in the main, of wide extended plains and level prairies, on which, in the original condition of the country, there was little or no timber. Over these plains, the water which falls on the untilled soil is obstructed by the wild grass and bushes, and consequently retained upon the flat surface until it is either evaporated, or slowly passes off into the natural depressions, which convey it through similar impediments to the greater channels of discharge.

But, as population takes possession of the ground, the wild grass is removed and the plough is applied to the drainage. The primitive furrows are so directed as to let off the surface water; and the imperfect drains first opened by the plough, are subsequently enlarged and made the channels into which the lateral ditches are led. The success of the crop depends on the perfection of the drainage; and, consequently, one of the first efforts of every provident farmer, on breaking up the sod, is to relieve the surface of his fields of standing water. But the water rapidly discharged

from these incipient drains meets with impediments in the choked up streams, is held back by fallen timber, and spreads over the bottom land. To save these narrow strips of bottom land, which generally afford the finest pastures, the industrious farmer promptly removes these obstructions from the channel and lets the water off into the country below.

This process, though in reality hardly well commenced, is yet progressing over the valley of the Mississippi at the rate of many millions of acres annually. The aim of every proprietor is to drain his own fields, and let the water pass as rapidly as possible into the creeks and rivulets which are provided by nature to convey it away. But the land upon the great tributaries into which this water passes, is equally valuable; and each proprietor there fortifies himself in like manner against the annual and increasing flood. He also drains his fields with a view to the more rapid discharge of the surface water; throws up embankments across the low places to shut out the flood; and if the circumstances of his situation will justify it, levees in his front and confines the swollen water to the actual channel of the stream.

The immediate consequence of all this is, that the water which, in the original condition of the country, remained upon the surface of the prairies until a portion was evaporated, and a portion absorbed by the earth, to be subsequently given out slowly by the springs, is now hurried along hundreds of thousands of artificial drains into the great rivers which supply the Mississippi.

The effect of cultivation is, therefore, to cause a necessary increase of drainage from all the unwooded prairies of the west. To what extent the floods may be increased by this cause, we have no data to estimate. Yet it is important to be able to form some idea of the consequence which would result from any supposable increase of the general drainage of the country. For this purpose an attempt has been made to estimate, on the authority of popular maps, the actual area of the Valley of the Mississippi, from the source of the distant tributaries down to the mouth of Red river.

The result of this computation is given below, with the remark, merely, that though the areas are expressed as they resulted from the measurements, to the nearest hundred square miles, yet the data from which they are obtained are somewhat uncertain, and the quantities can only be regarded as, at present, the best attainable approximation.

TABLE IV.

*Of the areas drained by the tributaries of the Mississippi river.*

	Sq. miles.
I. THE MISSOURI RIVER.—The area drained by the Missouri and its tributaries, is	519,400
II. THE OHIO RIVER.—The area drained by the Ohio and its tributaries, is	202,400
III. THE UPPER MISSISSIPPI RIVER.—The area drained by the Upper Mississippi, including all the tributaries which come in on the east side above the mouth of the Ohio, and on the west above the mouth of the Missouri, is	181,500
IV. THE ARKANSAS AND WHITE RIVERS.—The area drained by the Arkansas and its tributaries, including White river, is	176,700
V. THE RED RIVER.—The area drained by Red river and its tributaries, is	102,200
VI. THE YAZOO, OHIOX, BLACK RIVERS, &c.—The area drained by the Yazoo, and all other tributaries coming into the Mississippi on the east side, between the mouth of the Ohio and the mouth of Red river, is	29,300
VII. THE St. FRANCIS.—The area drained by the St. Francis, embracing the territory lying between its waters and the Mississippi, is	12,100
Total area drained by the Mississippi river above the mouth of Red river,	1,226,600

A comparison of these results will show with how much more propriety this great river should have received the name of THE MISSOURI, than that which it bears. The Mississippi, where it runs into the Missouri, is charged with the drainage water of an area even less than that which supplies the Ohio, and but little greater than that which is received from the Arkansas and White rivers.

The Ohio is the greatest of all the tributaries of the Missouri; the upper Mississippi is the next in importance; the Arkansas the third, and the Red river is the fourth in the scale. The Ohio comes in at, or extremely near, the assumed head of the delta: and therefore, when the channel immediately below its mouth has been already filled by the discharge from the rivers above, a flood in the Ohio must always produce wide-spread overflow. Yet it is not the Ohio, nor the upper Mississippi, nor even the Missouri, to which the inundations of lower Louisiana are mainly attributable. The water which these upper streams send down is generally absorbed by the swamps or accommodated by the channel of the river. But when this channel is full, or nearly full, and Red river—(the fourth in magnitude of the tributaries)—pours out a flood, the effect is disastrous to all the country below. In other words, it is almost invariably the tributary which discharges nearest to the point where the overflow occurs, that is the immediate cause of ruin. Every observing planter, at or above "the Raft" of Red river, remarks, that the floods of the upper Red river itself are nearly always harmless; and that when the country there suffers, it is not from the waters which have come from the Rocky mountains, but from Little river and the two Cypresses—streams scarcely known to geography.

These facts are important, because they show that the channels, of the great rivers are large enough to vent the floods which come from their distant sources—the wave of which is spread out and reduced on the way—and that the overflows are occasioned by the simultaneous outpouring of the smaller tributaries discharging into a channel already nearly full. They

are further important, because they teach us that to afford the most prompt relief we should seek to restrain the Ohio, which enters at the head of the delta, and the Washita and Red rivers, of which the discharge is so often disastrous to lower Louisiana. We shall hereafter see that those great navigable rivers may be controlled by simply adopting a cheap and easy method of improving their low-water navigation.

Now, we have seen that the area drained by the Mississippi is 1,226,600 square miles. Reducing this to feet, we find for the total area of the Mississippi valley, 34,195,645,440,100 square feet. We have not sufficient data for determining the average annual downfall of rain over all this immense area; but it seems probable, judging from known results, that forty inches will be extremely near to its true value. Assuming that this is the fact—and it can scarcely vary more than two or three inches from the truth—we shall have, for the total annual downfall of water on the whole surface of the Mississippi valley—a downfall which is either carried off by the drainage of the streams or by evaporation—113,985,484,800,000 cubic feet. We have not sufficient well-ascertained data to enable us to compare this, the total fall of water in the valley of the Mississippi, with the actual annual discharge of the river. But we have facts enough, obtained in the present investigation, to show that the discharge below Red river, by the Mississippi and its great natural outlet, the Atchafalaya, during sixty days of the high water in the spring of 1851, was 6,225,000,000,000 cubic feet: or at the average rate of 103,750,000,000 cubic feet per diem.

The actual drainage below Red river, during sixty days of the high water of 1851, was therefore very nearly the *eighteenth part* of the total annual downfall over the whole area of the Mississippi valley. (See note E.)

If we now divide the volume discharged during the two months of high water in 1851, in cubic feet, by the total area of the valley, in square feet, we shall find for the value of the drainage, during these sixty days, reduced to inches,  $2\frac{1}{10}$  inches.

Now let us suppose, from any cause—as the tillage of the prairies, the destruction of the vegetable growth, or the better drainage of the fields—that out of the forty inches of rain which falls, *two-fifths* of an inch, or nearly *one per cent.* of the whole, should be discharged into the Mississippi in the course of these sixty days of flood, over and above the present average discharge. If this slight increase of the total discharge were distributed uniformly over the whole period of sixty days of high water, it would require that the channel of the river should be competent to give vent to an increased volume equal to 220,000 cubic feet per second. If this increased volume be retained within the channel by levees, these levees must be raised about six feet higher than the tops of the present levees.

The object of this computation is to show how sensitive is the discharge of the river to every variation, however inconsiderable, of the drainage of the country. If the evaporation be slightly reduced, or the drainage slightly hastened or increased, by the causes which are progressing, and which most obviously must produce that effect, then for every *fifth part* of an inch by which the total drainage is increased in the period of sixty days of usual high water, there must be experienced an average increase of *about three feet* in the height of the floods, unless the water can find its accustomed vent into the swamps. This result may assist the mind in forming some estimate of the consequences which are to result from the extension of

society over the yet unpeopled West, and the cultivation of the vast territory which is drained by the Missouri and its tributaries.

#### OF THE EXTENSION OF THE LEVEES.

It has already been stated that the recent increase of the height of floods in the lower Mississippi is a result, not of natural, but of artificial changes. It is true that in tracing the present or ancient channels of the river, we find deposits in different parts of the delta higher than the present high-water marks, and which stand as incontestable proof that the river in former ages was higher, when it left those marks, than the level of the floods which are now witnessed at the same points. These ancient floods may have resulted from an unusual downfall of water, either general or local; or they may have proceeded from an accidental diminution of evaporation, and a corresponding increase of the total drainage. But it is not always necessary to assume that the actual discharge of the river was greater than it is now, to account for the existence of those elevated spots. On the contrary, these places are limited in area, and attributable rather to local than general causes. The whole coast of the Mississippi, from the head of the delta to the gulf, exhibits indubitable evidences of former changes of its bed. Its old channels are to be found on both sides of the river, and in all parts of its course, and enables us often to trace the occurrence, or to infer the existence of some ancient *cut-off*, which must, in its day, have produced an elevation of the waters below, equal, as has been shown, to about half the descent of the stream around the bed. An ancient cut-off of fifty miles would have produced an elevation of the high-water surface, and consequent deposits below the bend, of more than six feet; and, in process of time, as the river gradually elongated its channel, and approached at that point its former condition, its banks, resulting from later deposits, would be found to be five or six feet lower than those ancient traces.

Moreover, it is not contended here that the Mississippi may not, in ancient periods, have occasionally poured larger floods into the ocean than have been witnessed within historical times. A great flood is the result of a simultaneous discharge of the great tributaries, which usually run off successively.

The high water produced by the Red and Arkansas rivers, in the ordinary course of things, has begun to subside before that of the Ohio, Cumberland and Tennessee comes down; and these, again, begin to recede before the Mississippi discharges its volume; and this, in its turn, subsides before the snows of the Rocky mountains, which swell the northern tributaries of the Missouri, are melted by the tardy sun in those high latitudes, and the water has time to flow through the three thousand miles of channel intervening between the sources of those distant streams and the head of the delta. It is a part of the natural order of events, that these great rivers shall discharge successively. But there were doubtless in former ages, as now, exceptions to this natural rule; and a meeting of the flood-waters of distant tributaries may have occurred many times in the course of the tens of thousands of years which have witnessed the formation of the delta. Such things may occur hereafter, and greater floods than have yet been seen by men may be felt along the banks of the Mississippi. But it is not these visitations of Providence which we have here to discuss and provide for. It is only those most disastrous floods which now almost annually oc-

cur, sweeping over the works of industry from year to year, devastating extensive regions, and which are referable to causes that society has created, and is still creating, and which it is therefore in the power of society to prevent, that we are here to investigate.

The floods which now carry annual distress and destruction into the lower Mississippi, it is maintained, are essentially the result of artificial causes. The water is supplied by nature, but its *height* is increased by man.

The subordinate causes to which this increase of elevation is attributable, have been sufficiently discussed. The remaining and the prominent cause, it is proposed now to consider. *This cause is the extension of the levees.*

The Mississippi has been, and is still, accustomed to find vent for its surplus waters in the vast swamps which are to be found along the valleys of Red river, the Arkansas, White river, the Yazoo and the St. Francis; and to the right and left of its proper course, almost the entire distance from Cape Girardeau to the Balize. In the original condition of the river, as it still exists above the mouth of the St. Francis, when the surface rises so as to overtop the banks ever-so-little, the water flows in through the bayous, and down the lateral slopes, and gradually fills up the immense swamps through which the channel winds, and from which it is only separated by the deposite left by preceding overflows. But each overflow leaves an additional deposite of sediment on the borders of the stream, and raises these belts of elevated soil still higher; and makes also a further deposite of lighter material in the swamps, and consequently raises the surface of the swamps in some corresponding degree. The height of the borders of the stream is, therefore, a close guide to the height of the floods to which the deposite is due.

This is now the actual condition of the upper portions of the delta, as it was that of its whole extent when the valley was first occupied by the Europeans. The early emigrants found these narrow and elevated borders extremely fertile, and capable of being made immensely productive, by shutting out the floods, which, passing in a thin sheet over the banks, filled up the swamps in the rear of their plantations, and destroyed their crops. With here and there an elevated spot, which was not ordinarily reached by the floods, the whole delta, on both shores, was frequently, if not annually, inundated. A thin column of water passed over the banks along a space of more than a thousand miles on each side of the river, and was received in the vast adjacent low grounds, which served as great reservoirs for the discharge.

In this state of things, each individual planter found it easy to protect his crop, by throwing up a frail embankment along the edge of the river in front of his estate, with wings or lateral banks running back into the swamp.

The rise of the river rarely exceeding the height of its banks more than a few inches, this slight levee was an efficient protection. But by degrees, and *pari passu* with the progress of society, these levees were extended from the lowest points of tillable land, near the gulf, up both shores of the river, until they now reach, in an almost unbroken line, beyond the mouth of the Arkansas; and are to be found at intervals as high up as Memphis. These works were originally commenced for local purposes and private protection; but, more recently, they have been planned with the intention to shut the water out from the swamps, on both sides of the river, for a great portion of seven hundred miles of its course, or, estimating both shores, for at least fourteen hundred miles of river coast.



In the progress of the levees no regard has been paid to those "bayous," or natural outlets, through which the Mississippi, in its unrestrained condition, vented, as it rose, a large portion of that surplus water which, if these openings had not existed, would have been shed over the borders of the stream, and have raised the strata of overflow still higher.

The numerous channels through which the rising floods were safely discharged into the swamps, with few exceptions, have been all stopped up by the extension of the levees across their mouths. Consequently, that portion of the flood which these openings allowed to pass into the great reservoirs of the delta has been excluded from them, and is now forced, when the levees stand firm, to flow between the artificial banks down the main channel of the river.

It will be readily perceived how this compression of that surplus water which, in the original condition of the stream, spread over a width of fifty or one hundred miles of inundated country, within a channel only half a mile in breadth, will cause the flood to rise higher and flow faster, until the additional volume discharged by the channel becomes equal to that which was before discharged by the bayous into the swamps.

The natural suggestion will, therefore, be, that to relieve the river we must restore its original condition by re-opening these closed up outlets, and again allowing the water to pass out through its natural vents.

But this is now wholly impracticable. These bayous are all types of the Mississippi itself. They originally received their supply of water altogether from the river; and in extreme floods were subject, like the river, to overflow their borders. These overflows left a deposit, of narrow breadth, parallel with the channels of the bayous, and limited in the rear by the swamps. These narrow strips of elevated soil were arable, and offered attractions to industry second only to the beautiful borders of the parent stream; and they have consequently all been occupied, subdued, and are now often highly improved. The levees which have been thrown across the mouths of these bayous, now serve to protect the plantations on their ancient borders from the inroads of the Mississippi. To open them again would lead to the certain and immediate destruction of great interests, which have grown up along the outlets; and, at the same time, would prevent the possibility of reclaiming the swamps themselves, which it has become an object of national and state legislation to redeem.

It will now be perceived why it is that the floods are constantly increasing in height on the lower Mississippi, and why it is so difficult to afford efficient protection to the country. The water which formerly escaped through these lateral vents, filling up the swamps slowly, or, as the flood increased, flowed over the borders of the great river and its tributaries, filling the reservoirs there provided still more rapidly, is now confined by artificial breastworks within the too contracted channel of the river. Consequently, as the levees are extended higher up, more water is excluded from the swamps, and the flood is therefore increased, and forced more rapidly, and in a deeper column, on the country below; thus compelling the lower planters to raise higher and make stronger the frail levees which originally sufficed for the protection of their isolated estates.

But these embankments have at length acquired such great breadth and height, in the southern parishes, that their secure maintenance has become exceedingly expensive, and their rupture the cause of great and frequent local disaster.

This is the leading cause to which the recent overflows of the Mississippi, along the coast of Louisiana, are attributable.

It will presently be seen that the evil is rapidly increasing, and destined, if not speedily arrested by the strength of the nation, to devastate one of the fairest portions of this prosperous country.

The embankments which have been raised in past years to protect the borders of the stream from inundations have been altogether the work of individual enterprise, carried on without system, under slight official control, and almost without concert. But it is not at all probable that the continuation of the system will hereafter depend on private means. Some of the parishes in upper Louisiana have already engaged in the work, and State legislation will soon be invoked there as the only power adequate to contend with the difficulty.

In the mean time the national legislature has taken the lead, and by a general grant of all the inundated lands to the States in which they lie, for the express purpose of making "the necessary levees and drains to reclaim the swamp and overflowed lands," Congress has offered inducements to the States, and through the States to individual enterprise, to commence a vast system of drainage with a view to the ultimate exclusion of the water of the Mississippi and its great tributaries from all the overflowed lands upon their borders.\*

It is not for one acting for the moment as an officer of the government to criticise the past, or to dictate the future, legislation of Congress; yet it may not be inappropriate to say, that if the vast bonus granted for the purpose of excluding the water from the swamps above, and sending it down upon the States below, had been accompanied by an adequate appropriation to enable those States below to give vent to that water, or to protect their borders from the deluge which it will bring, the good which was intended by the grant would have been accompanied by less destruction than is now certain, without additional legislation, to follow the donation.

As things now are, extensive works are in progress to exclude the water from the swamps and swell the floods of the river; while no step has yet been commenced to reduce those floods, or to guard the lower coasts from their consequences.

Legislation in Missouri has already responded to the Congressional grant, by an appropriation of \$50,000 to begin the work of reclamation at the head of the delta, where many hundred square miles of inundated territory may be reclaimed by art, and the land subdued, drained, and brought speedily into tillage.

The legislature of Arkansas, with equal promptness, has passed an act granting to all proprietors who may construct front levees, the right to enter the donated lands where they may choose to select them, in payment for the cost of the levees which they may rear. The details of the act it is unnecessary to repeat; but it seems to offer the most ample guarantee for the ultimate leveeing in of the whole front of that State on the Mississippi, and the borders of the Arkansas river, from the high lands below Pine Bluff to Napoleon, on one side, and to the mouth of White river on the other.

The legislature of Mississippi, prior to the passage of the act of Congress ceding the swamp lands to the States for the purpose of encouraging their reclamation, gave authority to the five northern coast counties of that

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\* Act of Congress approved September 28, 1850.

State to levy a tax of 10 cents per acre on all the lands in each of those counties, for the purpose of constructing front levees, and shutting out the water of the Mississippi from the great swamps extending back to the Yazoo. Under the authority of this law, the county of Bolivar alone, since the last session of the legislature, has expended about \$50,000 on the levees of that county—making therewith embankments which, combined with private levees, have closed up a continuous front of about thirty miles along the river Mississippi.

The other counties extending down the coast, from the Yazoo pass to the mouth of the Yazoo river, have been making similar, but less rapid, progress. The effects of these works will be noticed hereafter. It is merely necessary here to remark that they have already been most sensibly felt, although the line is still incomplete.

This action of the counties, under the authority of the State of Mississippi, it will be observed, preceded the Congressional donation of the swamp lands to the States for the purpose of stimulating such efforts. We have yet to witness the effect of that grant when the legislature of Mississippi shall have convened again, and followed up the example set by the States of Missouri and Arkansas, by additional legislation based upon that grant.

Below Red river, the line of levees has been extended around Old river to the Atchafalaya, and is now in course of continuation down this, the greatest of the natural vents of the Mississippi; where all the lateral bayous, or secondary outlets, for a space of thirty miles, have been recently closed up by the proprietors, and the water always hitherto accustomed to pass through them has consequently been excluded from several hundred square miles of swamp.

Without going into the minute details of this subject, it may be said that, by the inevitable progress of causes now at work, the Mississippi water is destined ultimately to be excluded from the whole of that vast area of the delta extending from the mouth of Red river to Cape Girardeau, as it has already been nearly excluded from the area between Red river and the Gulf of Mexico.

It is a curious problem now to determine what is to be the effect of all this. While population is taking possession of the plains of Missouri and the prairies of the Mississippi, there increasing the discharge of the streams, and forcing the floods forward, by opening new drains and removing obstructions from the natural channels; States, counties, and individual proprietors, further south, are projecting and executing schemes for the reclamation of the swamps, of which the direct tendency is to cut off all the natural outlets for the surplus water, and confine the volume now spread by these outlets over vast areas of territory, within the narrow channel of the Mississippi.

By viewing together the two great causes of increasing floods—the accelerated drainage of the surface water from the cultivated plains, and the extension of the levees and systematic reclamation of the swamps along the Mississippi and its tributaries—we must perceive, without the necessity of direct calculation, the inevitable fate of lower Louisiana, unless the progress of the hastening events be by some means arrested. The levees are being extended rapidly to the head of the delta on both sides of the Mississippi. They have been raised in low places along the American bottom above Saint Louis; they are found even on the smallest tributaries of the Ohio and the Mississippi; are rapidly stretching along the entire coast of the Arkan-

sas; and have been attempted, and may yet be successfully introduced, on Red river. The drainage of the swamps is progressing with a step as steady and as fatal. Without Congressional encouragement, the ingenuity and skill of every planter has long been directed to the extension of his estate by the reclamation of the adjacent inundated lands. But now a fresh impetus has been given to these efforts in the form of a magnificent donation to invite the States to undertake the work. The bounty offered must sooner or later insure the drainage of all the swamps of Missouri, Arkansas and Mississippi. But the water that is excluded from them must sooner or later be poured down upon Louisiana. The swamps above will be redeemed; but unless adequate preventives be immediately applied, the sugar fields below will be replaced by a swamp.

Let it not be supposed that these events, though all steadily progressing, are too remote to demand present concern. Those changes which may be witnessed by persons now living, should be considered, for all the purposes of wise legislation, as things immediate. It is not assuming more than the actual progress of this country will justify, or more than is fully warranted by the history of the last thirty years, to conclude that at the close of the current century, or fifty years hence, the population within the present boundaries of this country will reach 100,000,000 of persons; and that of this number not less than fifty millions will be found within the region drained by the Mississippi and its tributaries. (See note F.)

Taking the area of this region at 1,226,600 square miles, its population in the course of half a century will average more than forty persons for each square mile. But a large portion of the territory lying between the western boundary of Missouri and the Rocky mountains will yield but a stinted reward to the labor of the farmer, and offer few incentives to stimulate to emigration. The richest tracts will be the most speedily and most densely peopled. The government will have been relieved of its surplus lands. The enterprising emigrant will no longer be able to purchase a farm of eighty acres of unsurpassed fertility for a hundred dollars, and must choose between the alternatives of a solitary home in the parched plains of the far west, or in the fertile but inundated lands of the delta.

It is our duty to look forward to these things. We see the work of redeeming these swamps advancing now; new levees being extended; new drains being opened; old outlets being shut off, and even the drainage pump applied, in numerous places, to keep out the water. We now see an almost unbroken line of levees stretching along the coast from New Orleans nearly to the Arkansas, on the west side of the river, and above the mouth of White river on the east; and new ones rising, from point to point, almost to the mouth of the Ohio.

It is for reflecting citizens and wise statesmen to judge what, under these circumstances, is to be the immediate effect of state legislation and the national grant on the safety of Louisiana; or what may be the condition of things when a dense population, a scarcity of land, and the exclusion of the water of overflow, shall cooperate to give value to all the inundated region which may be reclaimed by labor, and pour the waters now retained in the swamps of the upper country upon the doomed parishes below. We must look at these things and appreciate the progress of society, and its probable effects, before attempting to devise plans to retard or resist the approaching event. The expedient that will be adequate to mitigate the present suffering will have no appreciable influence on the floods that

are yet to come. That population will spread over the entire region drained by the Mississippi; and that the levees will be extended in defiance of the natural difficulties and the probabilities of crevasses, until both shores are completely guarded, must be received as certain and inevitable results. That the water which is to be excluded from these reservoirs must be accommodated by the channel, is also apparent. It is not merely the present floods, therefore, but the effect of these progressing changes in the natural order of things, which it is our province to consider and our duty to provide for.

But, in pointing out the direct consequences of the system which now prevails to an extent so alarming—of excluding the water from its ancient reservoirs, and forcing the increased burden down the proper channel of the Mississippi—it is not the design to contend against that policy. It would, indeed, be a hopeless opposition that would array itself against the countless interests, private and public, which urge these measures forward. The progress of this work is irresistible. It has become the adopted policy of Congress, as well as of individual States, and is progressing fearfully through the whole area of the delta. It is impossible to restrain the States in their career of reclamation; and no hardship or discouragement can deter or daunt those resolute pioneers who are establishing their huts upon every dry patch where they can effect a clearing for a field, or sell a few cords of wood to a steamboat.

In fact, the interest of the whole country, as well as that of the States in which these inundations occur, does demand the speedy reclamation of the swamps. But the work can only be promptly accomplished by the construction of levees; while the levees which are thus constructed for the public good, and private benefit, are most unfortunately productive of extensive local distress.

The process by which the country above is relieved, is that by which the country below is ruined.

The true difficulties of this problem will now be appreciated. We can protect Louisiana, by simple means, from all ordinary natural floods. But the great problem with which we have to cope is, to ascertain how to protect her from the deluge created by the artificial improvements which are accelerating the drainage of the prairies, and diverting the collected waters from their natural course through the low lands.

It will thus be seen that it is the pursuit of individual and public interests, through all the northern States of the Mississippi valley, that pours the excess of water down. It may possibly be considered, therefore, that it is the common duty of the States to guard the land which these improvements now endanger.

It will be useful here to reduce some of these facts to figures, that we may have a more definite idea of the consequences that will result from the exclusion of the water from a given portion of the swamps, and confining the volume so excluded to the channel of the river, when the Mississippi has already overflowed its banks and is pressing upon the levees. It has been stated that the swamp lands of the delta are supposed to cover about 40,000 square miles. But if we confine our attention at present to that portion of this area which is found above the mouth of Red river, we may estimate its length, northwardly, at four hundred miles, and its average breadth at about sixty-five miles—dimensions which give for the total area of inundated lands, north of Red river, 26,000 square miles.

If we assume that the water over the whole of this area is excluded from the swamps to a sufficient extent to reduce the depth of overflow only twelve inches, we shall have for the additional volume which, by that process, will be forced into the river, and which must therefore be carried off by the channel,  $26,000 \times 5280^2 = 724,838,400,000$  cubic feet.

This additional volume must be discharged through the channel of the river in the ordinary period of high water—which, for the purpose of an example, we will here again assume to be sixty days.

The increased discharge through the channel due to this cause will then be 12,080,640,000 cubic feet per diem; and consequently 139,822 cubic feet per second.

This is about the *one-seventh* part of the actual high-water discharge of the Mississippi below Red river, and more than that portion of its total average discharge there at periods anterior to the erection of the existing levees.

But we have already seen that if only 35,000 cubic feet per second be added to the present high-water discharge of the river, its surface would be raised at or above Plaquemine, in the present condition of things, not less than twelve inches. It follows, then, that by reducing the depth of overflow throughout the swamps which are here supposed to be subject to inundation in high water, above Red river, only one foot, we shall raise the surface at high water below Red river nearly four feet for a period of sixty days.

In this calculation it has been assumed that the depth of overflow prevented by the levees averages but twelve inches, over the whole of the inundated area under consideration. But this immense area is really flooded almost annually to a much greater depth. We have no means of making any correct average on this head. In every part of the swamps which have been visited by the writer, the depth is extremely irregular—varying from a few inches to more than twenty feet.

For the purpose of obtaining better data for an approximate estimate of the average depth of overflow, a cross-section of the delta was taken from the west bank of the Mississippi opposite Memphis, to the bluffs on the west bank of the St. Francis; the point, probably, where the opposite high lands approach most closely, in the whole region from the mouth of the Ohio to the Gulf of Mexico.

The results of this survey exhibited, for the actual distance from hill to hill-----	35½ miles.
For the maximum depth of overflow, at high water, in the Black Fish lake-----	42 feet.
For the depth at high water, in the St. Francis river---	52 feet.
For the average depth of the whole overflowed area----	51½ feet.
For the area of the section of overflow-----	518,800 sq. feet.
For the breadth of overflow, from bluff to bluff, in a straight line-----	19 miles.

From these results it appears, that, at the point where the delta is probably the narrowest, and one of the points where the width of overflow is the least—if not the point where it is the least of all—the width of inundated low ground is nineteen miles, or thirty times as great as the average width of the Mississippi; and the area of overflow *two and a half times* as great as that of the average high-water section of the Mississippi.

It is probable that *five feet* is about a fair average for the depth of the

inundation, distributed over the total area north of Red river which is subject to overflow.

Assuming this to be correct, and the area, which has never been surveyed, to be correctly stated at 26,000 square miles, it follows, that, whenever the levees are made to stand firm and exclude all the water from the swamps, the quantity so excluded will be equal to five times that above obtained, or sufficient to require *an increase of discharge* through the channel, of 699,110 cubic feet per second, kept up for a period of sixty consecutive days.

It has been shown that the actual discharge of the Mississippi in extreme high water in 1851, below Red river, was 1,134,000 cubic feet per second. It follows, therefore, that to fill up the computed area of the swamps which are found above the mouth of Red river, to an average depth of five feet, will require a supply from the overflows of the river equal to 700,000 cubic feet per second for a period of sixty days, *or equal to the present total high-water discharge of the Mississippi for a period of thirty-seven days.*

In other words, if all the water which passes through the channel of the Mississippi below the mouth of Red river, when at its highest point, were discharged into the swamps above Red river, it would require a period of about thirty-seven days to fill up all those swamps to an average depth of five feet. Now, on the other hand, if that portion of the Mississippi floods which is absorbed in filling up the swamps were entirely excluded from the swamps by a system of substantial levees, and forced into the channel—where an increase of 35,000 cubic feet per second will cause an increased elevation of surface of about one foot—the 700,000 cubic feet per second so excluded would raise the surface, by the formula, about fifteen feet above the present high-water marks.\*

It will be observed that, to arrive at this approximation, it has been necessary to assume the two leading elements of the problem, viz: the area of the region subject to inundation, which cannot be correctly ascertained from any data in the land offices; and the average depth of overflow, which has been estimated by mere local observation, and by inquiry of the best informed persons whom the writer has encountered in the course of his investigations.

If these facts be not underestimated, we may conclude that to levee-in the whole district, and reclaim all the inundated lands, will require levees of the usual height at the mouth of the Ohio, and gradually rising to about eighteen feet as they approach the mouth of Red river; unless, indeed, we are prepared to proceed in the work upon the theoretical hypothesis, that the river will find means to enlarge its channel, in some appreciable proportion, as the volume which it is required to carry down is increased.

We shall defer the consideration of this theory for the present, and endeavor to trace the progress of that system which is now in vogue, and the continuation of which, it has been shown, is to be regarded as the certain consequence of the increase of population and diminution of vacant land in this country.

The Mississippi river, from Cape Girardeau to Memphis, inclines towards the eastern side of its valley, and leaves the great body of its swamp lands on the west, where they are drained off by the St. Francis and a net-work of bayous, having frequent connexion with the channel.

\* Allowance is rudely made, in this computation, for the increased discharge of the Atchafalaya, the increased slope, and increased breadth of surface.

Below Memphis, the river, bearing to the west, crosses its valley, and approaches the hills below the mouth of the St. Francis, leaving a great body of swamp land to the east, which there receives the waters of overflow, and drains them off through the channels of the Yazoo, the Sun-Flower and some smaller bayous.

Below the mouth of the Arkansas, the river takes a nearly southerly course, through the middle of its valley, leaving the swamps of the Yazoo, some fifty miles wide, on the east, and those of Mason, Bartholomew and Washita, of about equal width, on the west; so that between the mouth of the Arkansas and the mouth of the Yazoo, the swamp lands of the Mississippi—the great reservoir of its waters of overflow—spread over a width of about one hundred miles.

Below the mouth of the Yazoo the principal portion of the swamps is on the west, where they have a natural drainage through various bayous into the Washita and Black and Red rivers.

Now, the flood that comes from the Missouri and upper Mississippi, first begins to overflow the banks of the river above the mouth of the Ohio, where a large volume of water flows through the pass between Cape Girardeau and the insulated high lands south of that place, and, spreading over a considerable area of swamp, discharges itself into the St. Francis. Below this insulated mass the thin column of overflow is received into the lakes, bayous and swamps of the southeastern counties of Missouri, lying between the St. Francis and the Mississippi; while the main channel of the river conveys the swelling wave further forward. The water continuing to rise in the river above, the column of overflow becomes deeper, and gradually extends along the whole front of Arkansas, above the mouth of the St. Francis, sweeping over all the lower portions of the western coast, and gradually filling up the great basin of swamps extending nearly from White river to the Mississippi, and supposed to cover an area of 5,000 square miles.

Assuming that this area is an approximation to the truth, and that these swamps are overflowed at high water an average depth of 5 feet, this reservoir alone must draw off, and hold in reserve, while the flood is passing through the channel, about 696,960,000,000 cubic feet.

But we have ascertained approximately, by actual measurement made when the water was within a few inches of its extreme height, that the whole discharge of the Mississippi river, above the mouth of the Ohio, during the flood of June, 1851, was 1,025,000 cubic feet per second, or 88,560,000,000 cubic feet per diem.

Consequently, the swamps on the western side, from Cape Girardeau to the mouth of the St. Francis, must draw off and hold back a volume of water, during a great flood, equal to the total discharge of the Mississippi itself, at Cape Girardeau, for a period of very nearly *eight days*.

The levee which the State of Missouri is about to build across the wide inlet below Cape Girardeau, will exclude the water of the Mississippi from a part of these swamps, and destroy them, as reservoirs, for that portion of the floods which they now absorb through this pass. But the further policy of the State of Missouri, as well as that of Arkansas, for the drainage of the residue of the inundated district above the mouth of the St. Francis, has not yet been fully developed. It is, however, certain that neither of these States can accomplish their object, or make the lands donated to them by the act of Congress extensively available, with their own resources, without constructing a line of levees along the whole front on the Mississippi;



and excluding the water of overflow entirely. It may therefore be assumed that they will be compelled ultimately to resolve on this course, if they have not already decided on its adoption.

We are not prepared to estimate what must be precisely the increased elevation of surface, to enable the river to discharge the additional volume which is now poured into any portion of the swamps, in a given period of time. But if we estimate the mass needed to raise the river twelve inches to be the same at the mouth of the St. Francis as it has been computed to be below Red river—from which it cannot very materially differ—we shall have for the increased daily discharge which will be occasioned by an increased elevation of four feet,  $86,400 \text{ seconds} \times 35,000 \text{ cubic feet} \times 4 = 12,096,000,000 \text{ cubic feet}$ : from which we will deduce for the time required to vent through the channel of the river the volume which now passes, or is here supposed to pass, into the swamps above the mouth of the St. Francis, without increasing the floods more than four feet,

$$\frac{696,960,000,000}{12,096,000,000} = 58 \text{ days.}$$

We may conclude from this course of calculation that, by constructing levees four feet higher than would be necessary to protect the borders of the Mississippi from overflow, in the present condition of things, at the mouth of the St. Francis, and gradually diminishing their height to that actually required by the present flood, as we proceed upwards towards Cape Girardeau, we shall be able to exclude the Mississippi water, and drain all the swamps on the west side of the river, north of Helena. In this computation, however, it is assumed that the water is confined to the channel by levees on both sides of the river. If that be neglected, then the Kentucky and Tennessee low grounds will be inundated, back to the hills on the east, and levees of much more moderate height will suffice to protect the coasts of Missouri and Arkansas.

Now let us proceed to a lower point along the Mississippi, and ascertain the probable condition of things there. The water which will be shut out of the great basin now drained by the St. Francis, will be hurried down upon the State of Mississippi—first upon the coast which bounds the swamps of the Yazoo: and upon the opposite coast of Arkansas, from the mouth of the St. Francis to the mouth of the Arkansas river. But here again, as has been stated, works are in progress to ward off the waters and reclaim the inundated low lands. The northern counties on the west border of Mississippi have been for the last year, and are still, at work, raising embankments along their respective fronts to keep the river out. Extensive private levees on the opposite shore have been commenced below Helena, and the State of Arkansas is just embarking in a systematic scheme for the reclamation of her inundated territory. There is, in fact, ground enough to justify the assumption that an unbroken line of levees will be made, or attempted to be made, in the course of a very brief period, on both sides of the Mississippi river, from the mouth of the St. Francis down to the mouth of the Arkansas.

If these levees be made competent to resist the weight of water, their effect, combined with the present levees on the Mississippi side below White river, will be to drain 5,000 to 6,000 square miles of swamps above the mouth of the Yazoo, and 2,000 or 3,000 square miles more, on the Arkansas side, between Helena and Napoleon.

All the water which will thus be excluded from an area here assumed to

be 8,000 square miles—now supplied by the overflow conveyed through the Yazoo pass and numerous bayous leading into the Sun-Flower and Yazoo rivers—together with that excluded volume which will be sent down from Missouri and the upper portions of Arkansas, will be hurried on to the mouth of the Arkansas river, there to join the increased flood which the State levees now in course of preparation on that river, are about to send forward to the same point.

It must be concluded, therefore, that the region embracing the mouth of the Arkansas, White river, and Lake Bolivar, is shortly to become the scene of extensive overflows, unless protected by the weakness of the works which are in preparation above.

It is important to take note of the condition of things here, for we may consider the mouth of the Arkansas river as in some degree the commencement of serious dangers, as it is in a great degree the commencement of most valuable improvements, which are threatened with destruction from the anticipated accumulations of water at this point. It is a point which will be found important in another aspect, viz : as requiring a special examination with a view to ascertain whether it may not be practicable and advisable to leave a vent somewhere in this region, through the contemplated levees, for the purpose of forming a great outlet to convey a portion of this artificial flood into Red river, and thence, by a corresponding outlet through the Atchafalaya, into the Gulf of Mexico.

The effect of all these contemplated works, from Missouri down, is obviously to concentrate the present waters of overflow, and hurry them on to the mouth of the Arkansas. But the plans which have been resolved on, and in a considerable degree executed, by the local authorities, leave no vent for them here. On the contrary, the counties of Mississippi from Lake Bolivar to the mouth of the Yazoo, as has been shown, have already nearly perfected, according to their own views of what is necessary, a line of embankment along their entire coast; while it has been seen that the commissioners of Arkansas are preparing to carry on the line upon the Arkansas side, until it meets that of Louisiana at the boundary of the two States.

If these immense lines of earth work could really be depended on to control the Mississippi, and exclude the water from the swamps, we might perhaps be able to approximate roughly to the increased height of the floods which will be produced in the river from the mouth of the Arkansas to the mouth of the Yazoo.

But a most important feature in the elements of this problem, is the fact, that none of the States or counties have yet planned their levees with any reference to the increase of the floods which their own levees, or those in course of construction above or below them, will produce. In all cases they seem to be guided by the lines which mark the level of former high water.

This fact leads us to the discussion of two considerations that merit attention, in estimating the effect of completing the levees now in course of construction, which hold out a prospect of some relief, and indeed, if properly improved, certain protection for a season, to the country below.

The most important of these considerations is the great difficulty that will be experienced in the first attempts to close up the works now in progress, so as to make the embankments continuous along the whole coast. Up to the present time this difficulty has not been so seriously felt, because

the water has found vent through unleveed districts above, and crevasses below. But each mile of levees that is reared and made secure will increase the labor of constructing new ones, and the cost of maintaining the old ones. Those that are now in course of construction, like all those that have been built in past years, are made with a view to resist the pressure of that depth of water which is anticipated on the basis of past experience. But past experience does not include the new elements—the effects which the levees themselves produce on the height of the floods—and the first levees are therefore made too feeble, and will give way and be thrown back, and rebuilt, perhaps many times,—as the old ones have been,—each successive levee rising higher and being made stronger than that which preceded it.

The water will thus be permitted to diffuse its force by spreading again over the swamps of the Tensas, the Yazoo, and the St. Francis.

This is a practical and certain guarantee for temporary reprieve to lower Louisiana. But it is, nevertheless, not one on which prudent men may permanently rely. Experience is acquired quickly in this country. The property which will be invested in these new levees, however slightly they may be constructed, and the lands which will be reclaimed by them, however difficult to protect, will be additional pledges that the embankments will ultimately be made to resist the floods. Consequently, this difficulty of maintaining the levees above, though real, can only be regarded as in some degree an assurance that the whole effect of the works now in progress will not be immediately felt. But this is no substantial ground of hope for the future. The waters must ultimately be excluded from all the swamps, and pressed down upon Louisiana.

This State must, therefore, it is repeated, prepare either to give them additional vent, or to resist them, or consent to be deluged.

Moreover, it is to be recollected that while these frail works will fail of their present object, and be burst in numerous places by the floods which they will be the means of producing, they will, nevertheless, generally stand firm until the water rises nearly to their summit, and when they give way, only fail in places of limited extent: so that, although the swamps will not at first be effectually drained, the water will be kept out of them, even by these inadequate levees, for a longer period; and the floods from the upper streams—which, by the wise ordination of Providence, usually send forward their spring waters after those of the lower tributaries have subsided—will be hastened on to meet those which come from the rivers below.

In short, the embankments which are now in course of construction in Arkansas and Mississippi will not be found sufficient to resist the higher waters which they will ultimately produce; but they will serve, nevertheless, to increase materially the height of the floods below, to hurry the wave forward, and add disastrously to the present distress of the people of Louisiana.

This State may look, therefore, for a temporary and partial reprieve due to the insufficiency of the works which are in preparation to inundate her coast. And it is to be hoped that this precious time will be given to prompt and enlightened efforts to prepare for the approaching trouble; and that it will not then be supposed, if it should chance for a year or two that the flood of Red river passes off harmlessly before that of the Arkansas comes down, or that both of these have discharged before the Ohio pours

out its volume—because there may happen for one or two seasons to be no coincidence of the freshets of the great tributaries—that the views here presented are mere speculations, or that the Mississippi is too great to be influenced by the works of men. They are, unfortunately, no speculations; and, if a year of low water should be permitted to intervene, it will be the part of wisdom for Louisiana to profit by the delay, and push forward her defensive works.

The other argument which has been urged as a ground of hope, is the probability that, as the depth and mass of water forced through the channel are increased, the size of the channel itself will be proportionally enlarged.

It is certain that this is one of the laws to which all streams flowing over alluvial beds are obedient; that, *ceteris paribus*, their abrasive force increases with the volume of water transported, and that the channel is enlarged as the abrasive power is augmented. But, before this can be made a ground of encouragement, it is to be observed that the scouring force of the river cannot be increased until *after* the surface has been raised; and, therefore, after the damage has been done.

This law is only available as an argument to prove that, though the people of to-day may be deluged, their descendants, if they continue the contest, and set back, rebuild, and strengthen their levees, will ultimately obtain relief. But *when* that relief will come; *when* the bottom will be washed out deep enough, and the banks will have caved in far enough, to accommodate the increased volume, it is beyond the prescience of science, or the light of experience, to foreshow. Indeed, all our observations upon the Mississippi go to establish the presumption that, although the river, while depositing its bed, and forming its channel in the material which it transports, readily adapts its section to the volume which it bears; yet, after that work is accomplished, its bed is formed and its dimensions are determined, it is extremely slow in its efforts to readjust its arrangements. The cut-off at Racconet, made three years ago, is not yet washed out, by one-third, to the usual dimensions of the channel; though, by reason of the contraction of the water-way, the velocity of the current at that point is greatly accelerated. The Horse-shoe cut-off was made many years ago; and up to this time the river at that place—notwithstanding the speed of the water is very much increased there in all stages of the river—presents a water-way of about twenty per cent. less than the average area of the river's section.

In fact, this principle of compensation, so often alluded to by scientific writers, offers no substantial ground of hope. It has value, perhaps, as a geological truth, but it affords no solid comfort to present society. When we increase the volume discharged by the river, the channel will no doubt undergo a gradual enlargement; but more than a thousand miles of material must be excavated and transported—re-deposited, re-excavated, and again transported many hundred times; and we have no reason to doubt that hundreds, and perhaps thousands of years will be required to do the work, and restore the ancient condition of things.

But it is contended by persons of intelligence and observation, that the construction of levees in the upper parts of the river cannot increase the floods essentially below; for the reason that the channel below is larger than that above, and can therefore vent between levees all the water that can be brought down between any new levees which may be built above.

The assumption on which this hope is founded is erroneous in fact. The Mississippi river may be, and is, generally larger near Red river than it is in the neighborhood of Memphis. Yet there are portions in its upper division, towards the Ohio, which are much larger than other portions below the Yazoo. And it may be added here, as a curious fact, in itself a perfect refutation of this view, on which hope has been promised, and a truth pregnant with other important consequences, that *the Mississippi, when in flood, discharges more water immediately below the mouth of the Ohio than it does at any point in the neighborhood of Red river.*

The maximum discharge of the channel below the mouth of Red river at the top of the flood of April, 1851, was-----	1,134,500 c. feet per sec.
The discharge below the mouth of the Ohio June 10, 1850, when the water was there <i>nine feet below the top of the flood of 1849</i> , was-----	1,223,000 " " " "
At the same point, at the top of the flood of 1849, by estimation, the discharge was not less than	1,700,000 " " " "

Apart from the inaccuracy of the facts, and the insufficiency of the elements upon which this view is based, it is at best a specious argument, and holds out but a fallacious hope.

It in reality assumes that the water which is now discharged into the swamps above, passes through those swamps and re-appears at their outlets, and aids in swelling the flood in the river below. But this is all at war with the facts. The flood in the river travels faster than the flood in the swamps; and the highest rise at the mouth of the St. Francis is not produced by the water of overflow which entered those swamps above and is drained off by the St. Francis; nor that at the mouth of the Yazoo by the water which is drawn through the swamps of the Yazoo; nor that at the mouth of Red river by that which is discharged by the Cocodrie and the Tensas. The floods of the Mississippi are produced by water which does not go into the swamps at all, but which descends through the main channel of the river; aided by the discharge received from the tributaries on the way. The height of the flood at any point depends on the volume that is brought down by the river and its tributaries, and not by the discharge from the swamps. But, *after the river has attained its height*, the supply is kept up, and the duration of the flood prolonged, by the subsequent discharge from the swamps.

If, therefore, the levees be so raised at the mouth of the Arkansas, and the water so far excluded from the low grounds, as to produce an increase of the height of the floods there—say three feet—the height of the levees near the mouth of Red river must also be increased about three feet; the precise amount depending on local circumstances.

In fact, the effect of extending the levees, which is here contended for, was clearly demonstrated by the spring flood of 1851. As has been stated, the coast counties of Mississippi, during the previous autumn, had extended and closed up their detached levees over a continuous line of fifty or sixty miles,—partly above and partly below the mouth of the Arkansas. But the levees were not materially extended on the opposite or Arkansas side. Consequently the water was only excluded from the swamps of the Yazoo for this distance, and still had vent into those of Arkansas.

Now, the flood of 1851 was not a great flood. About fifty miles above

the mouth of the Arkansas it was ten inches below the flood of 1850 in the Mississippi; and an equal distance beyond the back water from the Mississippi, the Arkansas itself, in 1851, was nearly *three feet lower* than it was in 1850.

The height of the flood of April, 1851, at the mouth of the Arkansas, ought, therefore, to have been expected to be at least one foot lower than it was in 1850. But in consequence of the levees constructed above, on the Mississippi side, by Bolivar county, the water was excluded from the swamps on that side immediately above the mouth of the Arkansas: and we accordingly find that the flood of 1851, at and below Napoleon, was within four inches as high as that of 1850. Here was a visible effect of eight inches due to the new levees above. (See fig. 8.)

But the levees in Mississippi, as we have seen, between the dates of these two floods, were perfected many miles further down. Following the coast about 80 miles, to the lower end of Bunche's bend, we find that the flood of 1851 was  $2\frac{1}{2}$  inches *higher* than that of 1850, instead of being, as it ought to have been, according to the volume sent down, about 12 inches lower. Here, then, was an effect of  $14\frac{1}{2}$  inches apparently due to the new levees raised in Bolivar and Washington counties in the summer and fall of 1850.

Proceeding some 10 miles lower, we find the flood of 1851 about *eight inches higher* than that of 1850, instead of being 12 inches lower; showing an effect of 20 inches near Lake Providence, produced by the new levees formed above that place during the preceding season.

This effect was, however, of very brief duration. The levees were not prepared for this pressure, and gave way. A great crevasse occurred at Point Lookout, on the Louisiana side, below Providence, and numerous breaches had taken place on the Mississippi side, through which the water poured into the swamps of the Tensas and the Yazoo; and the flood below was accordingly reduced, and the levees saved.

Such results will be witnessed again and again. The country along the coast below will be saved by the feebleness of the works above. But each time the embankments break, they will be rebuilt and made higher and stronger; and each victory gained over the waters in the north, will consequently add to the distress of the south.

It is not to be supposed that Louisiana can afford to raise her levees as fast as the new levees above will make such a course necessary for her safety. The levees near the head of the delta will be but five or six feet high, and be capable of sustaining a pressure of three or four feet of water. But if we add a pressure of three or four feet to the height of a flood threatening an old levee, we must sacrifice the original bank altogether, and build a new one three or four feet higher. To resist a flood *increased four feet* in Louisiana, will require an expenditure more than three times as great as to build a levee adequate to resist a pressure of four feet in Missouri, besides involving the sacrifice of the old work. To maintain the new levee, apart from the increased risk, involves an outlay equally disproportionate.

It will be perceived that, in the view of the writer, the levees are destined to be extended the whole length of the delta, wherever there is inundated land to reclaim, of which the value, when redeemed, will justify the cost; and also, that as the water is excluded from the swamps, and confined between the levees, it must continue to rise until it obtains depth and

velocity sufficient for its discharge through the channel, or until the levees break; that, practically, society can hope for no relief from the unassisted enlargement of the channel, or from any thing but immediate efforts to give lateral vent to the water, or to restrain it by appropriate works.

So long as levees are raised and lengthened above, we must therefore expect the country below to be assailed by increasing floods.

In this state of affairs it is difficult to conceive of a case more deserving of the generous sympathy of the country, than that of the people of Louisiana. It should never be forgotten that it is precisely those efforts which are resulting in prosperity and gain to their northern neighbors, that are pouring ruin upon them. It is not the place of the writer to point out what measure of protection justice demands for the injury inflicted by these works, or to say what, if the States of this Union were to be regarded in their reciprocal relations as individuals, would be the legal claims for redress of the one that is injured by a diversion of the waters from their natural course, upon the parties who, in the pursuit of their own interest, cause the injury. It is his study simply to point out the facts, and the physical remedies which may be applied, leaving the question upon whom the weight shall fall to repair the evil, to the wisdom of Congress.

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### PART III.

#### OF THE MEANS OF PREVENTING INUNDATIONS.

To persons unacquainted with the peculiar formation of the delta of the Mississippi, and especially to those who are unused to the measurement and contemplation of forces, the question of *absolute practicability* will naturally occur, when it is proposed to control and regulate the flow of a vast river, which is known to drain seven hundred and eighty-five millions of acres, and discharge through its channel the floods produced by the melted snows of the Rocky mountains and those of the Alleghany, together with the surplus water of hundreds of tributaries in the intervening valleys. It will be advisable, therefore, to glance at this question first, and attempt to compare the weight of water discharged by the river, with those ordinary powers which are directed by men.

If our object were only to relieve the country from the floods which are now felt, this problem, in the opinion of the writer, would involve no serious difficulty. Outlets could be made in lower Louisiana, and the levees could be strengthened along the coast, in the upper part of the State, to an extent sufficient to afford the most ample protection. But we have seen that each year is destined to add to the power of the floods; that every mile of levee which is built increases the height and speed of the water; and that each new farm that is opened on the prairies, increases the volume that is poured into the streams. In short, it has been shown that the great difficulty of protecting the delta from overflow is produced by the extension of the artificial embankments along the borders of the stream, and the cultivation of the prairies of the upper States.

The real problem, therefore, is to decide how to guard against these artificial floods, which are annually increasing, by some counteracting artificial expedients.

It is not unreasonable to assume that if it be in the power of individuals so to control the waters as to add to the height and violence of the river, it will be equally within the power of this Government to reduce its force and moderate its velocity. Indeed it might be shown that force enough has been assembled in arms to protect the nations of Europe from the ambition of a single mind, to be able, if applied to such an object, to pump the Mississippi dry; that the standing armies of Europe are at this day sufficient, without the aid of science, and almost without the use of machinery, to *bail out* the floods of this river, and, pouring them into the sea through artificial conduits, maintain the water in the channel at any level that might be prescribed.

It is known, from measurements recorded in this paper, that the total discharge of the Mississippi and its natural outlets in extreme high water, is about 1,270,000 cubic feet per second; and that to raise the surface twelve inches, when at its extreme high-water mark, will require, in the average, an addition to its usual supply of about 35,000 cubic feet per second.

Now, the power of a horse is conventionally estimated to be equivalent to the raising of one cubic foot of water to a height of nine feet in each second of time; or, reciprocally, to lifting nine cubic feet of water to a height of one foot in each second.

The Mississippi and its tributaries are now navigated by about fifteen hundred steamboats, of which the average power may be safely estimated at about four hundred horses. Consequently, the total horse-power engaged in transporting the products of industry through this valley—those products which it is the object of this investigation to protect from the effect of floods—is about equal to six hundred thousand horses. From which it follows, that the steam power actually engaged in navigating the Mississippi and its tributary waters is adequate to the lifting of *all the water discharged by the river and its outlets*, at the moment when their discharge is greatest, as fast as it comes down, to a height of about

$$\frac{600000 \times 9}{1270000} = 4\frac{2}{16} \text{ feet.}$$

But, to reduce the surface of the Mississippi and its outlets below the mouth of Red river two feet, will only involve the discharge of about 75,000 cubic feet per second.

To lift 75,000 cubic feet per second to a height of two feet, will require a force of

$$\frac{75000 \times 2}{9} = 16,666 \text{ horses;}$$

which is equivalent to the power of the engines of about forty-two steamboats of the average size of those engaged in the navigation of the western rivers.

It is useful thus to compare the power of the river with those forces which men are accustomed to employ, for the purpose of showing that the quantities to be dealt with in controlling the Mississippi are not, as might be hastily assumed, too great for the means which it is in the power of this country to apply. Beyond this, such computations are of no practical value. They will serve only to show that, in order actually to *lift* the surplus water out of the channel of the Mississippi, and convey it through independent outlets to the sea, would not be too great an undertaking for



this age ; or, perhaps, greater than would be justified by the value of the vast area of overflowed lands which it is the object and interest of the whole country to reclaim.

It is, in fact, within the ability of society to restrain these floods by mere muscular strength—by steam-power—or by a dead lift, and without the aid of any of those resources which are supplied by art and experience. But, while it is useful, in contemplating subjects so large to bring into comparison things which are unknown, with others that we are capable, from daily experience, of readily appreciating, it is not necessary to pursue such a line of inquiry. We shall presently find that great volumes of the Mississippi floods may be discharged directly into the sea, by merely removing a portion of the artificial embankments which now confine it to the river ; or, that the floods may be controlled by retaining a portion of the water in the valleys above, until it may pass tranquilly to the ocean without injury to the country below. While we have the means of causing the river to regulate itself—to apply its own power to producing its own discharge—it would be unwise and unnecessary to seek extravagant modes of accomplishing our purpose.

It is proposed now to discuss these simple processes.

#### OF THE PLAN OF OUTLETS.

The mode almost universally recommended for obtaining relief from the overflows of the Mississippi, is that of creating artificial outlets to draw the surplus water, from the river and discharge it, through new channels, into the Gulf of Mexico. The earliest suggestion of this plan which has been seen by the writer, is to be found in Darby's account of Louisiana, published in 1816, where its essential features, as they are at this day presented, are fully chalked out.

But, it is very certain that the preference given to this method is attributable to the tempting facility of execution which it offers for the relief of the estates below Red river, and along the immediate borders of the Mississippi. The least knowledge of the physical formation of the lower portions of the delta, is sufficient to satisfy every mind that this plan is perfectly feasible, and may be executed there with great promptness and efficiency. Indeed, along this portion of the river, the pressing difficulty is not to give vent to the surplus water, or send it to the sea by artificial channels : the precise difficulty is to prevent the flood from bursting through its artificial barriers and venting itself.

The Mississippi, as has been already shown, is actually elevated during high water, from fifteen to twenty-five feet above the soil a few miles distant on either side of its course ; and is only prevented from breaking out and deluging the interior by the artificial embankments which have been reared along its coasts. This embankment usually gives way during high floods, in some weak points ; and the *crevasses* thus formed act as vents to the over-burdened channel. The proposition to create artificial outlets is here intended to supersede these spontaneous breaches ; and for that purpose, and to that extent, they will be recommended in this paper for the protection of lower Louisiana.

But this plan, simple, easy of execution, and certain as it is when applied to a limited extent on the lower portions of the river, is obnoxious to some

well-founded objections, and has encountered much opposition from unfounded apprehensions.

First, among the legitimate objections is the difficulty of giving vent to the surplus water which now comes down, and *a fortiori* to that which, in the view of the writer, is destined hereafter to come, in sufficient volume to protect the coast without deluging other portions of the adjacent country, already suffering from the very excess that now prevails on the Mississippi itself. This is a solid objection to a plan in other respects highly useful and applicable, within reasonable limits. But it involves the necessity of sacrificing one interest for the protection of another which is assumed to be greater—an alternative which cannot fail to render it odious to all whose interests are threatened.

Another objection to this plan, which is also founded in reason, is the certainty that great deposits will be left in the lakes into which the waters withdrawn from the Mississippi will be discharged before they can reach the gulf; deposits which will not only impair the navigation of these lakes, but ultimately convert them into swamps, like those which it has become one of the great objects of the whole population of the delta to reclaim and bring under cultivation.

Then, there stands in the way the apprehensions seriously entertained, and forcibly expressed, by engineers of great intelligence and respectability, that the abstraction of a portion of the water by lateral channels will cause a diminution of the velocity of the current, and a consequent filling up and contraction of the present channel of the Mississippi below the points at which the water is withdrawn. Whence it is concluded that, as the channel of the river will become smaller than it now is below the new outlet, and the speed of the current will be diminished there, the discharge of that channel must become less in proportion as the outlet is greater; and that, consequently, there will be really in the end no appreciable reduction of the height of the floods effected.

Finally, there is the opinion, thrown out and vigorously maintained by others, that these new outlets having shorter routes and a greater descent than the river itself, they will be rapidly abraded by the escaping water, and ultimately so much enlarged as to become the main outlets or true channels of the river, and thus lead to the eventual destruction of the present channel and its invaluable navigation, and consequently involve the ultimate decay of the city of New Orleans.

As the plan of artificial vents, or *high-water wastes*, is here recommended as a prompt, efficient and available means of relief for the coast below Red river, it will be proper to discuss these several objections at the outset.

#### EFFECT OF OUTLETS ON THE AREA OF THE CHANNEL.

The writer does not participate in the apprehension of those who look forward to a diminution of the present width, depth or velocity of the Mississippi, from deposits consequent on the discharge of its waters of overflow through independent outlets. This apprehension is not at all shared, though the principle which looks for the accommodation of the size of a river's channel to the volume of water which passes through it, along a given slope, is fully admitted.

Certainly there are, in a channel formed in an alluvial soil, reciprocal relations between the depth, breadth, slope, velocity and discharge. In other

words, these quantities are each functions of the others. But we are not thence hastily to conclude that a certain portion of the high-water discharge of the stream may not be withdrawn without producing a proportional contraction or diminution of the breadth or depth of the channel. There are several impediments to this conclusion.

To excavate a channel through a soil of given texture, and to keep the same channel open when so excavated, are two very distinct things, implying very different applications of force.

To wash out a channel, requires a velocity and power not merely sufficient to carry off the material, but to overcome its cohesion and inertia, and transport it in addition.

We find, consequently, that it is no easy thing, even with a great fall and a great volume, to open a new channel by the mere action of the running water of the Mississippi. The first attempts to make the cut-off at Rac-courci, where the fall was at the rate of six feet per mile,\* were unsuccessful, although a considerable volume of water was let through an artificial trench leading from the river above to the river below the bend.

Various other attempts to create cut-offs across the bends in the upper portions of the river have likewise been unsuccessful, although sometimes aided by a descent across the bend of seven or eight feet per mile.

The Atchafalaya and the Plaquemine have probably been open for ages—certainly from periods far beyond the reach of history or tradition—the first having a fall more than twice as great, and the other a fall *ten times as great*, as the Mississippi itself; and yet, unaided by art, they have been found unequal to the task of increasing the depths of their channels, or enlarging their respective water-ways. On the contrary, the Atchafalaya, in the view of the writer, seems to have been contracting its original width for a great many years.

The crevasse at Bonnet Carré discharged into Lake Pontchartrain about the one-tenth part of the high-water burden of the Mississippi, for many consecutive days, during the great flood of 1850, when the water of overflow rushed down a plane descending about fifteen feet in  $4\frac{1}{2}$  miles; and yet the velocity and force of the torrent were not sufficient to tear up the natural soil to any considerable extent. No channel was excavated. The furrows left by the plough and the roots of the crop remained on the field where it had been swept by the water, after the flood had subsided.

Without multiplying examples, it is admissible to say that the power required to excavate a new channel, or to enlarge an old one, is much greater than is needed to maintain such a channel after it is once opened.

It does not follow, therefore, that the capacity of the Mississippi will be diminished by high-water outlets, even if a part of the water which originally formed the channel should be withdrawn, for the reason that it requires more force to create, than is required to maintain the channel after its formation.

But there is another reason for the practical conclusion, that extensive outlets may be formed without a shadow of fear for the preservation of the channel below. The Mississippi and its natural outlets are now greatly overburdened in times of high water, and are unable to vent the volume which is poured into them by the distant tributaries as fast as it is brought down. This excess of water finds new outlets by overflowing the banks, or through crevasses in the artificial levees. Outlets, then, acting only as *high-water*

\* It was just  $4\frac{1}{2}$  feet in three-fourths of a mile.

vents, through which this surplus may be let off, cannot possibly diminish the actual area of the river's section below; for such cutlets will discharge water which does not pass through the channel at all. The water which injures the country is not that which descends between the natural banks—or even that larger quantity which now descends between the levees of the Mississippi—but is precisely that which, after the levees have given way, leaves the channel and spreads over the cultivated fields. We may surely discharge this portion through artificial openings leading to the sea, without effecting the area of the channel below; for it does not now, and never did, flow through the channel, and has, therefore, no influence whatever on its condition.

Again: it has been seen that the height of the floods of the lower Mississippi is annually increasing, in consequence of the extension of the levees above. In opening outlets below Red river sufficient to give passage to this *increased* supply, as it comes, we cannot possibly impair the efficiency of the present channel, for this increased discharge has had no part in the creation or maintenance of the present channel.

To the extent, then, in the first place, of discharging the waters of overflow, or the crevasse water; and to the further extent of providing for the increased discharge which the new levees will occasion, we may employ artificial outlets without the least apprehension that the present area of the river will be diminished by success. And still beyond this we may carry that expedient, until we approach the unknown limit which represents the difference between the volume needed to create, and that needed to maintain the channel.

These limits allow us margin to open outlets far beyond our means of producing, with proper regard to the safety of those upon whom the surplus is to be turned.

A word may be added in allusion to the fear often expressed, that the new outlets which it is proposed to open at points where the route which the waters will follow to the sea will be shortened, will ultimately become so enlarged as to absorb the Mississippi itself, and thus leave the city of New Orleans on some secondary bayou.

The reply to this apprehension is the fact already stated, that the water passing through such vents is never known to cut out or deepen their channels without assistance. The bayous which still lead from the Mississippi into the adjoining lakes and swamps, have been in activity during thousands of years, and do not seem to have gained the least on the Mississippi; while the whole delta shows evidence of ancient outlets which have been filled up by deposits, and no longer act in relieving the discharge of the river.

The Bayou Plaquemine descends from its source to the Indian village, eight and a half miles, at an average rate of 2½ feet per mile, and in one place no less than three feet in a single mile, having a depth of more than thirty feet, and a current which can only be stemmed by a powerful steamer; and yet it does not appear to gain upon the soil or to enlarge its area. Indeed, the writer is not in possession of any fact which goes to show that any outlet can be made from the Mississippi above New Orleans, which, left to itself, will become larger and ultimately excavate a new channel into the gulf. If we could calculate with confidence on such a result, the problem of protecting the country below Red river would be relieved of all its difficulties at once, for we might then open an outlet into Lake Borgne, and, turning the

Mississippi into that arm of the gulf, transfer its embouchure to the deep water south of Ship island, and reduce its high-water surface some six feet at New Orleans. But, unfortunately, the water cannot open the way without assistance, and the new channel will not be produced without other aid.

The danger anticipated does not, therefore, exist. The channel will only be enlarged as we seek to enlarge it; and it will of course be the duty and the care of the engineer to keep it always under control. For those, however, who apprehend that the tendency of things might be different, it may be said that these outlets can be completely controlled; that, nothing is easier than to limit their discharge to the precise amount which we wish to pass through them. To *increase* their draught involves some difficulty. To stop them up entirely, requires no skill and but little labor.

The outlets which it is proposed to open, like the ancient natural outlets of the river, will only act in times of high water; and as the bottom of their channels will be eighty or ninety feet higher than the bottom of the Mississippi, and at the same time higher than the surface of the sea, to assume that they will be capable of cutting a trench to the gulf sixty or eighty miles distant, competent to drain the Mississippi, we must assume a power adequate to the excavation and transportation of that mass of material, or a prism eighty feet deep, three thousand feet wide, and sixty or eighty miles long.

There is nothing known in the past history of the Mississippi, and nothing that can be inferred from its present habits, to warrant such an assumption. The cut-offs, whether natural or artificial, to which so many former changes of the river's bed are referable, are not in opposition to this conclusion. To produce a cut-off requires the excavation of a trench through a narrow neck of land dividing one channel one hundred and twenty feet deep, from another of equal depth, where the water is precipitated rapidly through the material to be removed, and conveys it directly into the gorge of the Mississippi itself, possessing a power always in activity to bear it away.

There is here the power to loosen the material, the space to discharge it into, and the power then to remove it as it comes. In the case of the new outlet, the material to be removed must be conveyed many miles through lakes and swamps, where the current is resisted by stagnant water, where the power of the river is exhausted; and must finally be deposited in a shallow arm of the sea, which it has not the force to repel.

These objections to the use of outlets to a limited extent, are not tenable. It is therefore proposed to resort to high-water vents, so far as is necessary to obtain prompt though limited relief from pressing distress and impending calamity: but not to rely on this expedient exclusively, or even to look to it for full relief or permanent security.

The object of this examination is not considered to be merely the protection of the country below Red river from the difficulties against which the population there is now struggling, but to embrace the whole area of the delta, and to do the work by some plan that will not be incompatible with the intention of Congress, as it is manifested in recent legislation, to reclaim all the lands in that vast area which are subject to inundation. These great purposes will be aided, but not accomplished, by outlets; which, therefore, are now only recommended for local relief and limited application.

## OUTLET BELOW NEW ORLEANS.

About eleven miles below the city of New Orleans, and one hundred above its mouth, the Mississippi approaches within five miles of the Gulf of Mexico. The ground between the river and the gulf, here known as Lake Borgne, is a plane sloping from the river back to the sea. The first three thousand feet from the river is cleared and highly cultivated land; but the residue of the distance is swamp, always wet, and sometimes completely overflowed by the high water of the gulf.

When the Mississippi is in flood, its surface stands six feet above the level of the adjacent soil, and the water is prevented from inundating the sugar fields by artificial levees about six feet high.

At the distance of half a mile back from the levee, the surface of the ground is  $9\frac{1}{2}$  feet below the high-water surface of the river. At the distance of a mile, it is  $10\frac{1}{2}$  feet, and so continues, almost a perfect level, from that point back to the borders of the lake, where the surface of the swamp or prairie is  $10\frac{1}{2}$  feet below the high water of the Mississippi, as it stood in April, 1851.

The level of the gulf at the time of the survey was just eleven feet below high water in the Mississippi; but marks were exhibited which showed that in 1848 the lake had risen to within seven feet of high water in the Mississippi; and a low-water mark was pointed out which showed that the surface had at times receded to  $13\frac{7}{10}$  feet below high water in the river. If we assume that the mean surface of the lake is eleven feet below high-water, and the distance from the river to the lake in a right line, five miles, we shall have data near enough to the precise facts for all practical purposes.

The following section, (fig. 9) is a correct profile of the ground from the Mississippi to the gulf, showing the level of both as the water stood on the 7th day of April last.

It will be perceived from this profile and description, that if the levee that now confines the water to the channel of the river were removed, the water would rush from the river towards the gulf in a column six feet deep. But if the earth back of the levee were excavated to the level of the swamp, or cut down to a level  $10\frac{1}{2}$  feet below the high-water surface of the river, the flood would pour through this opening in a column  $10\frac{1}{2}$  feet deep.

The average fall of the surface, from the river back to the level of the gulf, before the water of the Mississippi had suffered any reduction, (if the opening were made suddenly) would be  $2\frac{1}{2}$  feet per mile. The velocity of the surface current would be, before this reduction would have place,

$$v = \frac{8}{10} \sqrt{2 \times 10.5} + \frac{2.2 \times 10.5}{20} = 5 \text{ feet per second.}$$

If the levee were removed over a space of 5,000 lineal feet, the area of the outflowing column would be 52,500 square feet, and the discharge, consequently, about 210,000 cubic feet per second. But the actual discharge, while the length of the opening continued to be 5,000 feet, would be materially less than this amount; for the surface of the Mississippi would soon be depressed, and the depth and velocity of the column, of course, would be simultaneously reduced.

It is not at all probable, however, that the surface of the river could be reduced by this process more than  $2\frac{1}{2}$  or 3 feet, unless the torrent should be found to tear up the soil and cut a deeper outlet into the gulf. This is not likely to occur to any considerable extent if the force of the stream be not aided by artificial appliances. But a deepening can be effected by cutting

trenches from the river to the bayous which run through the swamps; clearing off the timber and loosening up the surface soil; confining the water between lateral levees extending from the Mississippi to the gulf shore; and so placing movable obstructions in the outlet, that the water, in undermining them, might tear up the bottom.

It is the opinion of the writer that it will be practicable, for an outlay which will not be unreasonable, to form a vent at this point which will obtain a depth nearly or quite equal to the difference between the high-water level of the river and the bottom of Lake Borgne near the shore, or about fourteen feet; and that such an outlet, thus increased in depth, will effect a reduction of the surface of the Mississippi, at high water, of not less than four and possibly five feet—an effect sufficient to secure the safety of New Orleans and the whole coast below the city, and some considerable distance above, for a very long period.

But it is not the purpose to recommend assigning any limit to the discharge that is to be poured through this outlet into Lake Borgne. It is proposed to cut boldly here: to encourage the action of the water by every effectual expedient, so as to reduce the surface of the river down as nearly as possible to the level of the gulf. All the water that is vented at this point, all the reduction of surface that is effected by this vent, will be productive of good. There is here no interest to be injured but that of the few individual proprietors whose estates will be appropriated, and to whom, of course, compensation must be made.

An apprehension is often expressed that the withdrawal of a large volume of water from any part of the channel will cause an increase of the bars at the mouths of the Mississippi, and therefore prove injurious to the navigation.

But it has been shown by the writer, in another report, that these bars are not produced by the destruction of the velocity of the river, where the fresh water meets the sea, but by the reluctant under-current which is set in motion by the out-pouring floods of the Mississippi. It has, in fact, been shown that the bars at the embouchures of the passes cannot be reduced in height by increasing the velocity of the river over them, and will not be increased in height by reducing the velocity.\* On the contrary, if the river could be made to discharge a large portion of its burden by some other channel, the depth upon the bars would be increased by the action of the sea, which would then set higher up; and if the river could be turned off entirely and let into Lake Borgne, the bars which are thrown out by the Mississippi, and maintained in the deep water of the gulf by its power, would be swept off by the waves, when a heavy sea would set into the mouth of the river, unresisted by the descending flood.

There is another point worthy of attention in discussing this subject, and which has been duly considered. The depth of Lake Borgne is very inconsiderable—varying from six to twelve or thirteen feet; and it would, therefore, if made the recipient of the mass of water which it is proposed to discharge into it, be soon filled up with the deposits from the fresh water of the river. This is an inevitable result, and the effect of the outlet, from this cause, would be gradually diminished. As the lake would fill

\* See report to the War Department, "on the improvement of the navigation across the bars at the mouths of the Mississippi river."—Ex. Doc. No. 17, 31st Congress, 2d Session, page 12. By Charles Ellet, jr., civil engineer.

up, the water discharged would flow through a channel of its own, between the natural levees which would be formed—as the banks of the Mississippi and those of all of its bayous have been formed—from the deposits of the water flowing off laterally from the course of the outlet. This channel would gradually extend through the whole length of the lake, carrying with it a delta like that which characterizes the embouchure of the Mississippi, until it would ultimately, and indeed at no distant day, reach the deep water south and east of Ship island.

It is the belief of the writer that it will be found practicable, by dint of labor, and cutting boldly at the borders of the Mississippi, to make an outlet into Lake Borgne, which may be encouraged to increase until it eventually becomes one; if not the greatest, of the navigable passes to the gulf. This indeed should be the aim; and we should be encouraged to proceed with the plan from the consideration that it is really the only great outlet that can be made from the Mississippi that will be extensively beneficial to the city of New Orleans and the adjacent coast, and yet injure no existing interest, which we may work upon without cessation, doing some good all the time and endangering nothing. We shall presently see that those other outlets which it is the duty of the writer to propose, have not this recommendation.

#### OF THE ENLARGEMENT OF THE PLAQUEMINE.

Next in value to the outlet which is recommended below New Orleans, in the estimation of the writer, will be found an enlargement of the area, and consequent increase of the present discharge, of the Bayou Plaquemine—one of those high-water vents left open in the original condition of the delta, and which have not yet been closed for local purposes.

It was a part of the natural adjustment of this great stream, to exhibit numerous openings through the elevated banks which form its coasts; where, in times of flood, as the water rose, it obtained exit by lateral channels which discharged into swamps, bays, or arms of the gulf. These openings, fifty years ago, were very numerous, and were to be found on both sides of the Mississippi, from the mouth of Red river to the Balize.\* But, in the progress of society, the population which, allured by the productions of the sugar lands, took possession of the banks of the Mississippi, closed up these outlets, by extending levees across them; so that, out of forty or fifty, or more bayous, which formerly served to relieve the overcharged channel, there are now left but *three* which still act in high water for the depletion of the river. Of these three, it is here recommended to select the Bayou Plaquemine as the one most suitable, for divers reasons, to be increased in capacity, and made to replace a portion of those inactive outlets which have been destroyed by the levees.

The ruling motive for the preference here given to the Plaquemine is the peculiar facility which its channel offers for prompt and economical enlargement. It has a more rapid fall than either of the other open bayous. It

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\* The late John McDonough, in reply to the questions proposed by the joint committee of the legislature of Louisiana, says: "When he first travelled the banks of the Mississippi, fifty years since, on horseback, he was forced to swim his horse across at least twenty or thirty different bayous—some of them fifty to sixty feet in width—which crossed the path he travelled and entered the river." These bayous were on the west bank, between the Bayou Plaquemine and Red river, and have all been stopped up in the progress of improvement.



has a shorter route to the sea-level than that traversed by either of the other existing outlets. It passes through a district less highly improved than would be encountered on any of the other open or abandoned bayous. The volume of water which it discharges can, therefore, be more cheaply augmented than that discharged by any of the other natural vents.

The descent of the Plaquemine, from its source at the town of Plaquemine, on the Mississippi, to the Indian village, is, at high water, nineteen feet.

The distance between the same points, by a survey following the course of the stream, is eight and one-half miles. The descent in that distance is, therefore, at the average rate of 2.25 feet per mile; which is about ten times as great as the average slope of the Mississippi, in this part of its course.

This rapid descent of the Plaquemine renders the enlargement of its channel a work of singularly easy execution. The velocity of the current is now, in high water, from six to eight feet per second, and in places considerably greater. Its depth varies from twenty-five to forty feet.

To enlarge this channel, nothing is necessary to be done but to cut off two or three short bends, and then promote the attrition of the current against the salient points which it is proposed to remove.

The material which may be excavated should be taken from the north side of the bayou, where there are few improvements to be injured; and should be deposited in an ample levee, on the south side, so as to protect the country there from overflow.

The water may be forced to assail the banks, either by cutting them down perpendicularly, during low water, so that they may be undermined and fall in as the stream rises: or the object may be effected at high water, by anchoring stout barges against the points, to be removed, provided with wheels to be turned by the stream, and armed with appropriate scrapers to cut away the soil as they revolve and the current rushes by. The velocity is now, at surface, in some places, seven or eight miles an hour, and it can be speedily increased to an average of seven miles by removing the projecting points, cutting off the short bends, and slightly increasing the depth across the bar at the source of the outlet.

By the exercise of ordinary prudence, there need be no apprehension that the water will scour out its own channel faster than is desirable. On the contrary, it will require vigor and skill to increase the discharge at this point fast enough for the relief of the coast. The work of enlargement will, however, be arrested by other considerations than any fear that may arise lest the Mississippi should turn its channel down this bayou, and find a permanent and principal passage, through Grand lake, into the Atchafalaya bay.

It is not to be assumed that the water of the Mississippi can be discharged to any great extent through the Plaquemine into Grand lake, without harm to other existing interests. There is, in fact, no point on the coast above New Orleans, at which a sufficient portion of the high-water burden of the river can be withdrawn to afford essential relief to the population there, without causing injury to some other community and the destruction of some other interests.

The most that can be said, on this head, in favor of the Plaquemine over other outlets that might be proposed, is, that a greater interest will be re-

lieved; and a smaller interest will probably be entitled to compensation for damage sustained, here than elsewhere.

It is this consideration, and none other, that will arrest the discharge which ought to be poured through the Plaquemine into Grand river. But this consideration—the damage to property on the Teche, and other bayous tributary to Grand lake, Berwick's bay and the Atchafalaya river—will be sufficient to compel us to arrest the discharge before the volume and speed of the current can lead to any serious apprehension of other dangers.

It will be observed that the water which is discharged by the Plaquemine is first received by Grand river, from which it is conveyed by numerous bayous into Lake Chicot and Grand lake. These bayous find their way through great tracts of swamp, or inundated lands, into numerous shallow lakes, which are destined at no distant day to be themselves transformed, by the deposits which are left in them by the water of overflow, into similar swamps.

But it will be proposed, presently, to enlarge the Atchafalaya, another of the three existing outlets of the Mississippi, which also empties into Grand river, and through the bayous leading thence into Lake Chicot and Grand lake. It will be seen, therefore, that Grand river is to become the recipient of all the waters of overflow which can be discharged by artificial or natural vents above New Orleans.

It is neither the intention nor the hope to obtain much more relief by means of an enlarged outlet at Plaquemine than that which is now rendered by the crevassés; but it is deemed advisable so to enlarge the capacity of this vent, that it may be relied on to discharge at least as much water as now ordinarily finds its way to the swamps through breaches in the levees.

This will be effected when the capacity of the Plaquemine is made about four times as great as it now is, or when its present extreme high-water discharge is increased from about 30,000 cubic feet to about 120,000 cubic feet per second. It may, indeed, eventually become advisable to draw off a still greater volume at this point, if, after the amount of injury that may be anticipated by a given augmentation of the discharge has been accurately ascertained, it be deemed prudent to make remuneration for that injury, and push the enlargement of the outlet still further.

This, however, may be left for future consideration, after the first relief has been obtained, the immediate wants of the coast have been met, and the adjacent levees have been rendered secure;—after the Atchafalaya has been enlarged as far as may be found expedient; and experience, under the new order of things, shall have indicated the measure of further enlargement that would be proper.

There can, however, be no reasonable objection offered to increasing the draught through the Plaquemine until this bayou discharges into Grand lake a column equal to that which is ordinarily received by that basin from the crevasses in the levees. And this is what it is here proposed to do: to increase the area and discharge of the Plaquemine until it can be regarded as a reliable substitute for those disastrous crevasses by which the channel of the river is now annually relieved. This condition will exact a breadth at surface of six hundred feet, and an average central depth of forty feet, or that the area of the section of the Plaquemine be made very nearly equal to the present area of the Atchafalaya.

## OF THE ENLARGEMENT OF THE ATCHAFALAYA.

The Atchafalaya is by far the largest of the existing or former outlets of the Mississippi; and it has been often proposed to resort to its channel as the best and most efficient drain for the floods which now threaten the country below its source.

In concurring with this popular idea, so far as to advise a commencement of the gradual and progressive enlargement of this great stream, it is not intended to represent the work as easy to accomplish, or in itself an effectual remedy for the floods of lower Louisiana.

It will, in fact, be found to be an exceedingly difficult and costly undertaking, and one which will need to be conducted cautiously, and not too rapidly, if it is to be effected without serious injury to the region through which the water is to be conveyed.

The Atchafalaya leaves the old channel of the Mississippi about two miles below the mouth of Red river, and 310 miles, by the windings of the channel, above the Gulf of Mexico. It flows nearly in a southwardly direction; and when the Mississippi is swollen by floods, it serves as a natural vent for a portion of the present excess of water, of which it bears off a large volume to the sea. At its source, its average surface width in extreme high water is about 600 feet: its depth 55 feet; its slope six inches per mile, and its discharge not less than 85,000 cubic feet per second. It is about equal, measured by the area of its channel and the volume of water which it conveys, to one-twelfth part of the capacity of the Mississippi above New Orleans.

It has been long supposed that the Atchafalaya was the ancient bed of Red river, when that stream had no connexion with the Mississippi, but found its way to the Gulf of Mexico by an independent channel. The union of the two streams—the Mississippi and Red river—is accounted for in this theory, by the supposition that, at the point where their waters now mingle, their channels then exhibited opposing flexures, and the current gradually cutting away the intervening soil, brought the streams together and made their waters common.

This has become of late years a very popular theory, and is supported by several plausible arguments. The position of the mouth of Red river on the one hand, and that of the source of the Atchafalaya on the other; the direction by which Red river enters, and that by which the Atchafalaya leaves the old channel of the Mississippi, correspond perfectly with the assumption, that the curves of the two adjacent streams gradually approached until they finally cut into each other. Besides, the color of the soil composing the west bank of the Atchafalaya at its source, indicates clearly a Red river origin. But, notwithstanding the plausibility and force of these facts, they are not at all conclusive, but apply with equal directness to another view that will be here suggested.

In fact, the hypothesis which attributes the original formation of the Atchafalaya to the discharge of Red river, is found, on a careful examination, to be wholly untenable.

It results from actual measurements of the channels of these two rivers, that while the Atchafalaya at its source has a prevailing depth at high water, in mid-channel way, of only about fifty-five feet, Red river at its mouth, only three miles distant, exhibits a depth of more than one hundred feet; that, while the Atchafalaya is confined within a channel less than 600 feet wide at

its surface, in high water, the width of Red river between banks a mile above its mouth is more than 1,100 feet: and that while the descent of the Atchafalaya at or near its mouth is six inches per mile, that of Red river, where it enters Old river, is, at low water, less than one inch per mile.

The hypothesis of a former continuous channel, common to these two streams, so different in all their features, must therefore concede a sudden and remarkable change in the character of the supposed ancient Red river, at the precise point of the present junction of that stream with the Mississippi. Such a change, and the exact coincidence of that change with the point of accidental contact of the two shifting channels, is, indeed, not impossible; but it is, at least, quite improbable. A less violent and much more satisfactory theory for the existence of the Atchafalaya—one of the most remarkable features of the Mississippi—may be suggested, though the writer has not had full opportunities to submit it to a very rigid inspection.

Black river, the proper continuation of the Washita, corresponds much more closely in the dimensions of its channel with those of the Atchafalaya, than Red river. The general direction of the Washita is from north to south—corresponding well with the general course of the Atchafalaya.

The idea has impressed itself upon the mind of the writer that, in the original condition of the delta, the *Washita*, as well as Red river, descended by an independent channel to the gulf, which then perhaps set up through a bay as far as the head of Lake Chicot.

The Mississippi pursued its present general direction. Red river had also its own independent channel to the gulf, in the present valley of Teche, where it has left abundant traces of its course in the composition of the soil, from above the rapids at Alexandria down to Berwick's bay. The Washita was thus an independent stream, descending to the sea between Red river and the Mississippi.

According to this hypothesis, the Washita and the Mississippi, by the gradual approach of opposite bends, ultimately united their waters, and the Washita was, so to speak, cut in two—the northern part afterwards serving as a feeder to the Mississippi, and the southern end acting as an outlet for its surplus water in times of flood.

The Washita having been a stream of smaller class than Red river, may be adduced as a reason why the present channel of the Atchafalaya, which was formed to accommodate the volume which that river, and not Red river, brought down, is insufficient for the discharge of the present volume of Red river. The Washita flowing directly down the plane of the delta, which it has been shown descends at the rate of eight inches per mile, accounts for the greater fall of the Atchafalaya, which takes the same direction parallel with the dip of the same plane.

Subsequently to the junction of the Washita and the Mississippi, Red river—then continuing on below Alexandria, in the same southeasterly direction which it still pursues above that point—flowed over its natural levee, and, taking an eastwardly direction through the swamps, united its waters with those of the Washita at the present mouth of Black river. Under this hypothesis, the increased volume below the confluence of these streams produced the larger channel known as Red river, which even now is scarcely sufficient to accommodate their collected waters.

According to this view, which is suggested as the most plausible explanation of the existence of the Atchafalaya, that stream was the ancient channel of Black river; and the present channel of Red river, below the

mouth of Black, was subsequently enlarged by the union of the waters of the Red and Black.

These considerations are not without a practical value in the present discussion. If it be true that the Washita had an ancient independent outlet through the Atchafalaya, the fact that this outlet has not increased in capacity since its function has been to give passage to the waters of the Mississippi, which it conveys to the sea-level by a slope twice as great as that of the Mississippi itself, is further evidence that the apprehension so often expressed, that it may ultimately absorb the Mississippi, is without stable foundation.

In fact, it is not yet demonstrated that this outlet may not have been one of those original vents which, like the Plaquemine, Manchac and La Fourche, and numerous other bayous, were formed as the outlets near the mouth of the river are now formed, during the deposition of the soil, and for the purpose of relieving the channel of its high-water load. Be that as it may, the Atchafalaya has existed for ages, and now exhibits signs rather of a progressive contraction than an enlargement of its area. There is, in fact, not only no reason to believe that it will ever open its own channel wider and deeper, but scarcely even substantial ground to hope that this result can be materially promoted by any moderate amount of cost or labor.

The Atchafalaya, at its source, draws from the Mississippi, in very high floods, about 85,000 cubic feet of water per second, or about 8 per cent. of the actual discharge of the main channel of the river. But the right or west bank of the bayou is overflowed in high floods by the backwater of the Mississippi, or by that of the Red river; and below the mouth of Bayou de Glaise, five miles from its source, the extreme high-water discharge is consequently increased, by accessions from Red river, to about 140,000 cubic feet per second, or 13 per cent. of the total discharge of the main channel of the river.\*

It is by observing these accessions from Red river, when the Mississippi has begun to fall, and the confined water of Red river obtains vent, that we are enabled to account for that red deposit on the west bank of the bayou, which has been so long regarded as conclusive evidence that this was once the proper channel of Red river itself. While the bayou is drawing in the water of the Mississippi at its source, the water of Red river, charged with its characteristic deposit, and deeply colored, flows rapidly through the swamps, and pours over the whole west bank of the Atchafalaya for a space of four or five miles, from Old river down to Simmsport, and slowly mingles with that of the Mississippi. It is from this Red river overflow that the west bank of the Atchafalaya receives the red stain. But the overflow from that quarter diminishes as we descend, and the red deposit becomes also less and less clearly defined.

In this, the upper part of its course, the Atchafalaya may be easily and cheaply enlarged. The purpose may be effected by first cultivating its borders and clearing off all vegetable growth, and then cutting down the salient points, and encouraging the action of the water upon them. But the difficulty of converting the stream into an efficient outlet is not found here at its

\* When the Atchafalaya was gauged, (April 26, 1850,) the water had fallen at its source 2.2 feet. The actual discharge was then found to be—

At its source, 77,100 cubic feet per second.

Below Bayou de Glaise, 122,700 " " " "

No observation was obtained at the time of extreme high water.

source, but increases from mile to mile as it descends, until it discharges itself, by numerous mouths, into Grand river, and again, through numerous bayous leading from that river, into the lakes which intervene between it and the gulf.

The real difficulty consists in the fact, that the Atchafalaya loses its importance and its power as it advances below the Bayou de Glaise. It yields the water which it had drawn from the Mississippi and Red river, to numerous outlets, which diverge from it to the right and left; and as it received accessions from Red river, which were discharged into it from the swamps above, so it discharges them again over its banks into the swamps of the interior below.

In passing down this stream in the latter part of April, 1851, when its surface had fallen 2.2 feet from its extreme high-water mark of that year, at Old river, and one foot at the head of Grand river, and gauging its volume from point to point, the following results were obtained:

The Atchafalaya drew from the Mississippi, at its source, in Old river-----	77,100	cubic feet per sec.
It received accessions from Red river in the first five miles, which increased the discharge to--	122,700	" " " "
At a point one mile above the Raft, the losses caused by lateral drains had reduced the discharge to-----	88,600	" " " "
At Picket's, one mile below Bayou Rouge and Bayou Latinache, its volume had been reduced down to-----	67,900	" " " "
At a point just below the source of Alabama bayou, it was found to be only-----	41,870	" " " "
Nine miles below the mouth of Bayou Little Devil, and half a mile below the re-entrance of Bayou Alabama, the discharge of this great stream had dwindled down to-----	19,400	" " " "

In addition to the effect of these continual losses, by which its volume is reduced to less than the *sixth part* of that which its channel discharged at Simmsport, the power of the current is still further reduced by a corresponding change in its rate of descent.

The actual descent in the lower part of the course of the stream was not measured, but the velocity was frequently tested; and, compared with the observations taken in the first twenty miles below Old river, they showed a falling off, in the speed of the current, of nearly one-half.

To make the main channel of the Atchafalaya capable of accommodating the volume of water which even now enters from above, the remaining obstructions at the "Raft" must first be removed, and the capacity of the stream must be increased an average of *fully three-fold* its present value, for a distance of forty miles. If, therefore, it should be attempted, as has been suggested, to produce the enlargement by pouring in more water at the source of this outlet, at Old river, without first preparing the channels below to give it vent, we shall overflow a great extent of country, and retard for years, if not permanently, its proper and necessary drainage.

This is one of those cases in which every consideration of prudence and economy urges the prosecution of the works of reclamation and enlargement *below*. The Atchafalaya and the Plaquemine discharge their waters at the opposite extremities, and through various bayous, at intermediate

points along the course of Grand river. This river is now, in fact, the recipient of all the water of overflow, and the crevasse water, together with that of the natural outlets of the Mississippi and Red river, from the source of the Plaquemine to the Red River rapids. The water thus received by Grand river from so many sources, is discharged from it, through numerous bayous and small lakes, into Lake Chicot and Grand lake. These bayous are very crooked, and frequently obstructed. Their descent is small, and the current passing through them is, in many places, extremely sluggish.

If the enlargement of the Atchafalaya be undertaken, these bayous must be simultaneously relieved of obstructions to the passage of water through them, straightened and enlarged; so that the additional volume of water received by Grand river may flow more readily into the lakes, and not spread over, and forever destroy, the great area of swamps, yet reclaimable, by which these lakes are surrounded. The work of enlargement may then proceed upwards, along all the bayous which now drain the Atchafalaya, and which will still be required to vent the increased volume which it is to be made to carry.

It is not to be supposed that this work can be accomplished speedily, at trifling cost, or without involving much local damage. The accomplishment of the labor, so as to produce appreciable effects, will require several years, however ample the means may be, or with whatever vigor the work be pressed; and a portion of the country will inevitably be flooded, however prudently its execution may proceed.

It was no part of the duty of the writer to investigate in detail the damages that may accrue from the accomplishment of this plan. It was sufficient to see and to know that the preservation of great interests from destruction will ultimately compel a resort to this measure. And as it is clearly in the power of those who control the progress of the work to arrest it whenever the damage threatened exceeds the value of the results produced, it seems unnecessary to delay it for minute and doubtful estimates.

But, as already intimated, the enlargement of the Atchafalaya by any justifiable process, will prove to be a slow and expensive undertaking, involving great labor and loss of life. The work, therefore, though necessary and proper to be commenced, will not afford that prompt relief which is demanded by the present emergency. The country needs immediate protection against present distress, and effectual guarantees against approaching dangers. For these we must look to the Plaquemine as the only point, on the west side of the river, at which we can relieve the lower coast with the necessary despatch. Another outlet will be presently suggested, in case of great emergency, as a temporary expedient; but the Plaquemine is, beyond all comparison, the channel by which we can most confidently undertake to produce visible and valuable results for moderate cost and with the necessary rapidity.

The Atchafalaya, when enlarged, will be much the most important outlet that can be obtained: because it draws off the water at the highest accessible point on the river. It is, therefore, not to be neglected; but is earnestly recommended here as a point at which the work should be commenced without delay. The superior merit of the Bayou Plaquemine consists simply in the fact, that, by its enlargement the lower coast can be more expeditiously relieved than by any other possible outlet.

But let it be observed that neither the Plaquemine nor the Atchafalaya, nor both together, can be relied on to give vent to the volume of water

which must be drawn from the channel of the Mississippi, when the system of levees now in course of construction along the upper coasts is carried out, and the floods are increased, as they are destined to be increased, by the destruction of all the great natural reservoirs of the delta.

If we allow for the increased duty of the Atchafalaya, 150,000 cubic feet per second, we must assume that the capacity of the channel of that bayou will be made thrice as great as it is now. It is extremely doubtful whether the current can be made essentially to increase *the depth* of the channel; and if not, then the increased area must be obtained exclusively by an increase of the width; and the breadth of the surface of this great river must consequently become about sixteen hundred or one thousand feet greater than it now is. This implies the excavation of a new channel one thousand feet wide and about fifty feet deep, and seventy or eighty miles long. If the water can be made to do the chief part of this labor, with the needful rapidity—which is the confident belief of others, and the hope of the writer—it will be cheaper and better to resort to this plan, to obtain extensive and adequate security, than to any other which has yet been proposed. But, if this hope should be disappointed, and the labor of making the water act with adequate rapidity in the lower part of the stream should prove much greater than is expected, or greater than can be endured, it may result that after completing the outlet into Lake Borgne and enlarging the Plaquemine, and commencing a guard levee of ample dimensions, *reservoirs* will then be the cheaper, as they will assuredly be the more certain, reliance for further protection.

We shall again recur to this question under another division of the subject.

#### OUTLET INTO LAKE PONTCHARTRAIN.

Next to the enlargement of the Plaquemine, by far the most efficient outlet that can be made, at reasonable cost and in a reasonable time, for the discharge of a portion of the surplus water of the Mississippi, will be a high-water opening from the bend at Bonnet Carré into Lake Pontchartrain. This expedient has been frequently proposed and elaborately discussed by others, but without the aid of previous instrumental examination.

The leading and true argument in favor of this plan is, unquestionably, the great rapidity and ease with which it can be accomplished. The prominent objections to it, in the view of the writer, are—

1st. That the point where the outlet is proposed to be made, is too near the gulf to afford relief to any great extent of river coast.

2d. That the deposits which will be discharged by the Mississippi into Lake Pontchartrain, will at first impair, and ultimately destroy, the navigation of the lake, which must always be of great value to New Orleans.

3d. That the water withdrawn from the river will so raise the surface of the lake as to inundate the swamps on its coast, and in the rear of New Orleans; rendering it necessary to enclose the city on all sides within a levee, and rely altogether on the draining pump to relieve it from the surface and sewerage water.

The distance from the Mississippi, at Bonnet Carré, to Lake Pontchartrain, is four and a half miles. The descent from the level of the high water of 1849, in the river, to the surface of the lake, at the date of the survey, was 16 $\frac{86}{100}$  feet. The fall per mile from the high-water surface of the river to that of the lake is, therefore, 3 $\frac{37}{100}$  feet.



The lake, when this level was taken, was considered to be about two feet above its usual low-water stage.

When the Mississippi is in full flood, its surface is about six feet above the natural bank at the proposed outlet at Bonnet Carré; and the natural bank, or immediate coast of the river, is here the highest part of the plane which slopes back from the edge of the river to the lake. The water of the Mississippi is, therefore, only prevented from pouring over its borders in a column six feet deep, and discharging itself at the level of tide-water in Lake Pontchartrain, by the line of embankment which the planters have raised for the purpose of protecting their fields from inundation. The floods of the river might be easily discharged in part at this point; where they would reach the level of the sea in four and a half miles, instead of following the windings of the river for a distance computed at one hundred and fifty miles.

The profile shown in fig. 2 will exhibit a correct section from the Mississippi to Lake Pontchartrain, at the point where the crevasse of 1850 occurred, and where a permanent outlet is so often proposed.

All that is necessary to be done to relieve the Mississippi at this point of a portion of its surplus water, is to cut two trenches from the river to the lake, and use the material taken from them to form two parallel levees, at the distance of four thousand or five thousand feet asunder, and then remove the artificial embankments on the borders of the river, and let the Mississippi flow down the intervening plane into the lake.

In truth, nothing would be easier than to protect the country many miles above and below Bonnet Carré, or, in some degree, from the mouth of Red river to the sea, by opening a vent in the mode here described,—for this opening may be encouraged to increase to any desirable extent.

Yet the objections already enumerated are so serious that a resort to this measure, so simple and so certain to produce prompt but limited results, cannot be recommended here. At least, it cannot be recommended as a permanent improvement and a reliable plan, though it may ultimately be adopted, should events arise to justify it, as a temporary expedient. Should it be found, after the Plaquemine has been enlarged to the greatest admissible limit, and the outlet proposed below New Orleans has been effected, and the other plans which will be presently discussed have been carried to their utmost limit, that the section of the Atchafalaya cannot be increased fast enough to give proper vent to the increasing floods, then, and in that event only, will it be advisable, in the view of the writer, to tap the river at Bonnet Carré, and turn a portion of the remaining surplus water into Lake Pontchartrain.

The outlet proposed to be made by the enlargement of the Plaquemine, will draw off the water at a point seventy-five miles higher up the Mississippi than that at Bonnet Carré, and it will therefore afford relief to seventy-five miles more of the coast. The cost of the work will not be greater than at Bonnet Carré, for we have the present channel, and the force of the water now running through the Plaquemine, to aid the undertaking.

The filling up of Grand lake and backing the water up the Teche will be productive of less injury to property, and will impair a navigation of less value to Louisiana, than its admission into Lake Pontchartrain. The enlargement of the Plaquemine to the utmost admissible limit, should therefore precede the opening of any outlet at Bonnet Carré.

The absolute rate at which Lake Pontchartrain will be filled up by

deposites, in case a portion of the increasing floods should be discharged into it, is not deemed of primary importance. It is enough for us to know that very great deposits will be made, and that they will not be left in regular strata over the whole bed of the lake, but in the form of *bars* and *islands*, which will speedily obstruct the navigation and render it always uncertain.

The quantities of earthy matter contained in the water of the Mississippi, in different conditions of its surface, have been investigated by several scientific gentlemen, whose results are not widely different. Preference is here given, however, to those published by Professor Riddell, of New Orleans, who, to his scientific reputation and skill as a manipulator, has superadded the claim to confidence which is due to great zeal in this subject.

The experiments of Professor Riddell have led to the conclusion, that the proportion of sedimentary matter to the weight of Mississippi water containing it, is as follows :

Water 1, maximum weight of sediment  $\frac{1}{300}$ .

Water 1, mean weight of sediment  $\frac{1}{150}$ .

Water 1, maximum weight of sediment  $\frac{1}{300}$ .

When solidified into coherent earth, at a mean, it was found that the *bulk* of the sediment was equal to  $\frac{1}{300}$  part of that of the water in which it was suspended.

But the greatest amount of sediment is found when the river is in flood; and it is when in that condition that the discharge into the lake would take place. We may assume, therefore, from these experiments, that when the river is in flood, the bulk of sediment would be to that of the water containing it, about as 1 to 1800.

We will assume, that if it should ever become advisable to draw off any portion of the surplus water of the Mississippi through Lake Pontchartrain, it will be necessary, in order to obtain any essential relief, to give vent to at least 100,000 cubic feet per second at that place. An outlet discharging less than that would produce but little impression upon the future floods.

There are 86,400 seconds in a day. The daily discharge of the outlet will then be 8,640,000,000 cubic feet.

Of this volume, the  $\frac{1}{1800}$  part will be coherent earth; or  $\frac{8640000000}{1800} = 4,800,000$  cubic feet, of sedimentary matter, will be deposited in the lake each day that the outlet is discharging at the rate of 100,000 cubic feet per second. If the annual discharge of the outlet average this amount for sixty days, the total deposite for the year will be 288,000,000 cubic feet.

Now, the average depth of Lake Pontchartrain is thought to be ten feet. Its area, according to La Tourette's map, is about 530 square miles.

A square mile contains 27,878,400 square feet.

The annual deposite produced by this outlet would then be sufficient to raise up an island one mile square and ten feet high, from the bottom to the surface of the lake.

These deposites would be irregular. In the course of a hundred years, there might be more than a hundred islands and shoals scattered over the lake, of which the height, and sometimes the position, would be changeable, and the channels therefore shallow and uncertain. Without entering into any minute computations, it is clear that an efficient outlet at Bonnet Carré is incompatible with the permanent maintenance of the navigation of Lake Pontchartrain.

The ultimate loss of this navigation is, then, one of the sacrifices which must be encountered, when we resort to this unnecessary and apparently superfluous expedient.

The increased elevation of the surface of the lake which will be produced by this increased discharge, has already been alluded to.

Lake Pontchartrain is connected with the Gulf of Mexico by two narrow passes; known as the Rigolets and Chef Menteur. The tides of the gulf set up through these passes, and produce corresponding tides in the lake.

The volume that is admitted into the lake by a high-water outlet from the Mississippi, must flow into the gulf through these passes; and consequently, the surface of the lake must rise; until a sufficient *head* is obtained to produce a velocity through the passes; adequate for the discharge of the additional volume admitted.

Now, it has been shown by Professor Riddell, who has investigated one branch of this subject very beautifully, that by the best data attainable, without an actual survey of the passes, the elevation or head necessary to produce the velocity requisite for the discharge of one hundred thousand cubic feet per second, would be, by the formula of Wiesbach, but about one inch and a half.

But, admitting the fact, that if the two surfaces—that of the lake and that of the gulf—were permanent and steady, as is assumed in this computation, this would be the whole effect due to the admission of this volume of water, we are not thence hastily to conclude that such will be the practical result. This problem is a much more complicated one, and requires for its solution a study of *the tides* of the gulf and those of the lake.

If the surface of the gulf were not affected by the tides nor by the winds, the elevation of the surface of Lake Pontchartrain, due to an outlet from the Mississippi discharging one hundred thousand cubic feet per second, would not, perhaps, be increased more than two inches. But the increased elevation due to this discharge is made much greater by the tides and winds. It is not intended here to say that the increased elevation of about two inches, which the assumed supply from the Mississippi would produce, is to be added to the elevation caused by the tides and winds, in order to obtain the total elevation. That is not the point. But it is the intention to say, that the tides and the winds greatly increase the effect of a given volume admitted from the Mississippi. The problem here is not to compute the elevation of the lake, or the *head* that is necessary to produce a sufficient velocity through the passes to discharge the volume that it is proposed to introduce through the artificial inlet, but the *increased elevation* which is necessary to produce the *increased velocity over and above the tidal velocity*.

Thus, to reduce the surface of the lake twelve inches, there must be driven through the passes by the reffluent tides, or by the winds, a volume of water equal to  $530 \times 27,878,400 = 14,775,552,000$  cubic feet. If this volume flow out of the lake through the passes in eight hours, we shall find, by dividing by 28,800, (the number of seconds in eight hours,)  $\frac{14,775,552,000}{28,800} = 513,000$  cubic feet, for the volume which must be discharged through the passes in each second of time. Now, a variation of twelve inches in eight hours, in the height of the lake, is no unusual thing. To give the velocity necessary to produce this discharge, Lake Pontchartrain

must be elevated above the level of the gulf, according to the table of Professor Riddell, which is here adopted as a sufficient approximation, no less than  $3\frac{3}{8}$  feet.

If now we superadd to the volume pouring through the passes under the action of tide and wind, a volume of 93,500 cubic feet per second, due to a crasse or an outlet, we shall have, by the same table, a further increase of elevation amounting to sixteen inches. (See note G.)

In fact, a discharge of one hundred thousand cubic feet per second will effect the elevation of the high tides of the lake, by the best data that can be obtained without a thorough survey of the passes, not less than eighteen inches. And even this limit will be occasionally exceeded; as when a coincidence occurs between the maximum discharge from the artificial inlet into the lake, high tides in the gulf, and *floods in the natural feeders* of the lake—which are quite too important to be entirely overlooked.

It will be exceeded also for another reason: the water that will be received from the Mississippi will enter near the head of the lake; and to obtain a passage through the lake, it must communicate a certain velocity to the whole body of water in the lake. To produce this velocity will require a corresponding elevation of the surface at the head of the lake. In estimating this elevation, we cannot regard the entire section of the lake as a mere conduit, having a given uniform velocity seaward.

There will be an outward current passing somewhere through the lake, with eddies, or counter-currents, near its borders. The elevation will be again materially increased from this cause. The writer hesitates, in anticipation of precise surveys, to assign a definite limit to the increased elevation of Lake Pontchartrain, which must be occasionally anticipated from the discharge of one hundred thousand cubic feet per second into it, by an outlet from the Mississippi at Bonnet Carré. But, from the best data now attainable, it cannot be set down at less than two feet.

In view, then, of the facts, that such an outlet as is here discussed must inevitably involve a destruction of the navigation of Lake Pontchartrain; ultimately convert it into a swamp; must greatly increase the ordinary height of its surface when the outlet is active; cause the entire shore to be leveed, and the cost of mechanical drainage to be greatly increased; without affording as effectual relief as can be obtained at Plaquemine without either of these sacrifices,—the opinion is confidently expressed, that this expedient should be postponed until it is found to be necessary and indispensable. This necessity, there is every reason to believe, may never occur.

#### OUTLET AT THE MOUTH OF THE ARKANSAS.

Before dismissing the subject of outlets, it is proper to say, that although examinations have only been made with a view to the adoption of this remedy at and below the source of the Atchafalaya, it is by no means certain that the safety and the proper drainage of the country above may not compel a resort to this method for relieving the Mississippi near the mouth of the Arkansas, by a great conduit leading thence to Red river. If this should ever be done, it ought to be after the work of enlarging the Atchafalaya shall have progressed far enough to give a certain vent to the increased volume which this new outlet will bring into Old river.

This idea suggested itself with some force to the mind of the writer at a

late period, and after becoming satisfied that the mouth of the Arkansas is at no distant day to become the scene of a vast collection of water, which must either be discharged by an appropriate permanent vent, or through crevasses, whence it will inundate the estates on the Bartholomew, Mason, Tensas, and other streams between the Arkansas and Red rivers. No investigation of this subject has, however, been attempted. To be made properly, special surveys, and a thorough reconnoissance of the parishes which the proposed outlet will traverse, will be needed.

#### OF THE OPENING OF THE BAYOU MANCHAC.

It has often been proposed to relieve the Mississippi by re-opening the bayou Manchac, one of those natural outlets which formerly drew off a small volume of water, and discharged it into Lake Maurepas by the channel of Amite river. It was not found to be necessary to make any extensive examination of this bayou, which was originally very insignificant, and is now entirely unfit for any useful application to the relief of the Mississippi. The source of this bayou, which was closed up to assist the military defences in the last war with Great Britain, by extending the line of levees across it, is only about six miles above Plaquemine, a point where, as has been shown, great relief can be obtained at little cost, and without serious damage to property. The water which would be drawn through the Manchac would be discharged into Lake Maurepas, and ultimately into Lake Pontchartrain. The use of this channel involves, therefore, all the objections standing against an outlet at Bonnet Carré, and many others which do not appertain to that expedient. Indeed, the suggestion of an outlet at this place is entirely without practical value, and scarcely worthy of detailed discussion. The channel of the Manchac is long and narrow, and incapable of bearing a volume of water which could produce any appreciable effect on the floods of the Mississippi; and, if enlarged for that purpose, the cost of the work would be great, and the damage resulting from it excessive.

#### OF THE LA FOURCHE.

The bayou La Fourche is by far the least important of the outlets which have been left open, as a vent for the surplus or flood water of the Mississippi. This bayou gives passage, in extreme high water, to 10,200 cubic feet per second, or less than the one-hundredth part of the total high-water discharge of the river. Its descent near its source is only about three and a half inches per mile, which is but about the one-eighth part of the average slope of the Plaquemine as far as the Indian village. The velocity of the current is necessarily small, and it would not be practicable, therefore, to increase the capacity of the channel by the mere action of the water, if other considerations would justify the work.

But the extensive settlements on the banks of the La Fourche, offer a further and great impediment to the enlargement of its channel. The work would involve excessive cost, if viewed only in reference to the physical difficulties, and a great outlay also in compensation for damages to private property.

An inspection of this stream shows that the same necessity for protection is felt along its highly cultivated borders, as has been experienced in so

distressing a manner along the Mississippi itself. The bayou overflows its banks when the Mississippi is full, excepting as the water is confined by the artificial levees. But these levees have been very carelessly and slightly built; and are almost without exception of inadequate height and strength. When the Mississippi is in flood, the water along the bayou, for a great part of its course, stands within two or three inches of the level of the tops of the embankments. In many places, indeed, it is only retained within the levees by constant vigilance and labor. The embankments on which the planters here depend, are not as substantial as it is usual elsewhere to provide for a private mill-race; though the bayou is daily traversed by steamboats of five hundred or six hundred tons burden, which frequently push the water in a succession of waves over the levees into the adjacent fields.

These levees are generally from ten to twenty inches wide on top; from three to five feet high, and of very irregular slope,—each planter adopting that which his own judgment or fancy prescribes. When the water rises to the top of the levee, the proprietor commences driving pickets down into the face of the bank, behind which a board is planted edgewise, and kept steady and in its place by a few shovels-full of earth.

This frail bulwark, by constant attention, generally prevents the overflow; but when the river falls, these temporary fixtures tumble down, and are replaced again at the next high water.

To secure the property on this outlet from overflow in the present condition of things, requires a good guard levee, not less than six feet wide at top, with slopes of three to one or more; and set so far back that there may be ample space between the new and old banks to fill up with sediment, and thus strengthen the protection with age.

But it has been shown that the floods of the Mississippi are soon to be greatly increased, so that a much deeper column of water will enter the La Fourche at its source, and pass through it with a somewhat accelerated velocity. The present levees along the bayou are in very few places adequate to secure the plantations against the present floods, and they must disappear entirely before the wave that is to come.

It is recommended, therefore, to construct the guard levees, which it is here proposed to build, at least three feet higher than those now relied on, from Donaldsonville down to Napoleon; at or near this place to open an outlet into Lake Verret, to carry off the surplus there, and discharge it into Grand lake; and from Napoleonville to Thibodeaux, to bring the levee down to within a foot of its present height, by a gradual slope.

The fall from the top of the levee at Napoleon to Lake Verret, according to the survey of the State engineer in 1836, is twenty-two feet. The distance is seven miles and fifteen hundred and eighteen yards. In the first mile and a half the fall is seventeen feet, or at the rate of eleven and one-third feet per mile.

It would be extremely easy to create an outlet at this point of sufficient capacity to afford entire relief in high water to the whole country along the bayou. And, by cutting a canal from the lake up to a point within a mile of the La Fourche, and there constructing a lock, and an ample waste-weir, the same canal would serve to open a navigable steamboat passage from the Mississippi, by way of the La Fourche, to Lake Verret, and thence to Grand river, Grand lake and the Teche.

An effective outlet may also be made at Field's mill, by cutting a new

canal about one mile in length, or enlarging the old one leading into Field's lake, and thence through the bayous from Lake Long to the gulf.

Either of these outlets will afford abundant protection against the present floods, and greatly diminish the cost of the levees. But they cannot be made to produce any sensible effect on the height of the floods in the Mississippi.

The writer is aware that the construction of a guard levee along the La Fourche, to resist the weight of the increased future floods, will be regarded as at least premature, and perhaps entirely superfluous. He makes the suggestion, however, after sufficient reflection, and in the fullest confidence that these guard levees will be found necessary, without assuming any increase in the aggregate volume of water discharged by the Mississippi, whenever the embankments along the coast of Point Coupee and West Baton Rouge are made high enough and strong enough to bear the weight which now presses upon them, without giving the water vent through crevasses. If crevasses were prevented from relieving the channel of the Mississippi above Donaldsonville, there are no levees on the La Fourche that would not be at once overtopped by the present floods.

#### OF THE PREVENTION OF CUT-OFFS.

It has been shown that the consequence of cutting off the bends of the river, as has been effected on several occasions by design, and often in the past history of the Mississippi, by the unassisted action of the current, is to increase the height of the floods below, and to reduce them above the bend. It is therefore recommended that prompt measures be taken to prohibit all attempts to effect or encourage such cut-offs in future, as well as to guard against their occurrence from accidental causes. Such a course will, indeed, afford no relief from present suffering, but it will serve to protect the river coast against one prominent cause to which we may look for an increase of future local inundations.

There are many points on the river where the water is gradually encroaching upon the soil, and reducing the width of the narrow necks of land which now separate the channel above from that below the great bends of the river. It was not the province of the writer to engage in minute surveys of these places; but it was necessary to this report that he should ascertain whether the progress of the water upon the land at any of these points rendered immediate attention proper. With that view, levels were run across the narrow isthmuses, and other observations made, sufficient to enable him to judge of the probabilities of cut-offs having place at the several bends where they were thought to be most imminent. There were other bends which were not examined, though now deemed equally worthy of careful survey. The points to which attention was particularly directed were—

1. *The American bend*, which commences about ninety miles below the mouth of the Arkansas.

This bend was examined May 15, 1851. The distance across the neck, measured to the water on each side, was five thousand and sixty-nine feet. The distance around the bend is computed to be fourteen or fifteen miles; but it was not measured. The fall of the water, or difference between the surfaces, as found by levelling from shore to shore across the bend, was 3.68 feet.

The evidence is conclusive, that the narrow neck in this bend is wearing away very rapidly. About twenty or twenty-five years ago, the distance across, which is now less than one mile, was fully three miles. It is thought by the resident proprietors that a width of four hundred yards, or more, has been cut away on the upper side in the last two years. The river is still obviously wearing away the soil, and threatens to abrade it more rapidly hereafter, in consequence of a change in the shore above, which causes the water to impinge more violently upon the bank at the narrowest part of the bend.

The land is cleared entirely across the narrow neck; and in high floods the current sweeps over it, and the water is consequently discharged over the loose bank into the reach below, with a pitch of about two feet.

A cut-off is very likely to have place in this bend at some early day, unless proper measures be taken to arrest the progress of the current, which is now acting steadily upon the yielding soil. Should this be the result, there will be a local increase of eighteen or twenty inches in the height of the floods below the bend, at Worthington's landing, and thence down to Princeton, and not a great deal less at Lake Providence. Indeed, the effect will be sensibly felt as far as Vicksburg; and it will be found impracticable to protect the coast in all that space—from the foot of the American bend to Vicksburg—by the present levees. The consequences of a cut-off at this point will, in fact, be most disastrous. Some of the finest estates in upper Louisiana and in Mississippi will be inundated, or only preserved by the construction of an entirely new and costly line of levees.

In view of the serious consequences which must result from a breach through this narrow neck, it is the duty of the writer to recommend that an accurate survey be made promptly of the entire bend, and of the bend above, with a view so to change the course of the impinging current as to prevent the further progress of this abrasion, or to arrest it by works which shall be adequate to resist the river.

Provision should also be made to enter upon the undertaking as soon as these details are obtained, and the plan is decided on.

2d. *The Terrapin Neck bend* is at a point about thirty miles above Vicksburg. The distance across the bend was found by measurement to be only one thousand five hundred and eighty feet. The distance around is variously estimated at from twelve to twenty miles. The fall, from the surface above to the surface below the bend, is two feet.\*

The river is constantly cutting this narrow neck away on both sides. It was not practicable, during the high water that prevailed at the time of the examination, to ascertain the character of the soil. But it was apparent that the caving now going on is very considerable on the upper side, for a space of more than two miles, and quite obvious also on the lower side.

A cut-off will be produced here, by the current itself, at an early day, even if the result should not be hastened by that portion of the public interested in its effects. But the river will not be permitted to work its own way. During the last winter a ditch about fifteen feet wide, and three feet deep, was cut across the neck, into which the water was admitted as the river rose. The current was strong, and the danger of an immediate cut-off was sufficient to attract the attention of the planters on the river below,

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\*As shown by the level, 1.36 foot; but allowing for the subsidence of the floods, it would be properly two feet.



who repaired to the spot with their forces, and arrested the water by throwing levers hastily across the ditch, and afterwards filling it up with trees and brushwood.

It would be charitable to suppose that the persons engaged in this work were ignorant of the mischief which it was likely to produce. It is scarcely to be assumed that any one who has witnessed the distress occasioned by the floods upon this river, would willingly inundate those beautiful plantations which are now only preserved by the slender protection afforded by the feeble barriers of the individual proprietors. This effort was probably prompted by ignorance; but ignorance may prompt it again, and there will be nothing to prevent a dozen misguided persons from inundating the whole coast for thirty miles above and forty or fifty miles below Vicksburg, by cutting a ditch here, which can be accomplished in a week.

It is important that this bend also should be promptly surveyed, and the most effectual measures taken to prevent the abrasion of the shores on both sides of the neck. It is not necessary, and it would scarcely be prudent, to make the survey one season and do the work the next. *There should be no delay here.* The survey will occupy but a month or six weeks in the fall; and the work, which is not difficult, should proceed immediately after that has been accomplished.

If a cut-off be permitted to take place at this point, the whole coast, on each side of the river, will be swept, as Point Coupee has already been, from Milliken's bend down to Grand Gulf. The effects will be less obvious below, but the difficulty of maintaining the levers will be sensibly increased as far as Natchez.

3. *The Vicksburg bend* is the next point, in descending the river, at which a cut-off seems likely to have place. The distance across the bend was found to be, from water to water, 7,712 feet. The distance around is estimated at ten miles. The fall, from the surface above to the surface below the bend, as the river stood at the time of the examination—about fifteen feet below the high water of 1850—was 2.25 feet.

Though the current here bears with great force against the bank on the upper side of the bend, it does not appear to be encroaching rapidly. Some work has been done on the neck, of which the object was represented to be to promote a cut-off; but it did not seem, as far as it had been carried out, that such was the actual purpose. Ditches have been commenced, but not extended entirely across the neck, and the timber that has been felled is left lying upon the ground.

A cut-off is not likely to occur here at any very early period, unless it be forced; and as one of the immediate effects of such an event would be to carry the navigable channel of the Mississippi several miles west of Vicksburg, leaving that town upon an inland lake, it is not at all likely to be accomplished by design, without meeting stern resistance from that place.

There does not appear to be any immediate danger of a cut-off at this point, yet such an event may occur in course of time, and it would therefore be wise to take efficient measures at some early day to protect the shore thoroughly, and to guard against the future chance by appropriate legislation.

4. *The Palmyra bend* is a point at which a cut-off is much more likely to occur than at the bend opposite Vicksburg. The distance across the neck is now only 4,218 feet, while the distance around is said to be twenty miles; and the fall, as ascertained on the 7th May, when the water was

eleven feet below the high water of 1850, from the surface above to the surface below the bend, 3.64 feet.

If nothing were done to promote the invasion of the river upon the banks at this point, a cut-off would probably not occur here at any very early period. But the narrow isthmus that now separates the two channels bears indubitable marks of a fixed intention to produce this calamity.

A ditch was formerly cut across the neck, but it was not made large enough to effect the purpose, and shrubs consequently took root and sprung up before a sufficient flood occurred to wash it out deeper and wider. Another, but a very clumsy effort, was again made during the last winter, by cutting off the timber, clearing out a portion of the old ditch, and commencing a new one; but it is said that the parties engaged in this mischievous work were deterred, for the time, by threats from below, and consequently failed to carry out their intentions. It is apprehended that those who have undertaken this labor will not wait for the slow progress of the river, but may renew their efforts on some future and more favorable occasion.

It is earnestly recommended that this bend also be promptly and carefully surveyed, and such works commenced as will be found effectual in changing the direction, or resisting the action, of the current.

It is also respectfully suggested that the great interests likely to be swept by the perpetration of the plans of those who are engaged in this wicked project, would justify, and seem to call for, some appropriate legislation to guard the country against such wanton injury.

If a cut-off should be made in this bend, the coast of Concordia, on the Louisiana side, and that of Claiborne, Jefferson, and Adams, in Mississippi, will be assailed by floods for which their present levees are wholly unequal. The mischief will be severely felt as far as Natchez; and the plantations thence to Red river will be deprived of much of the advantage which they acquired from the cut-off at Raccourci—a work that was made at the cost of many plantations on the coast of lower Louisiana.

The height of the floods will probably be increased by a cut-off at Palmyra bend, ten or twelve inches at Natchez, and nearly twice as much at Grand Gulf.

5. *The bend near Grand Gulf* is the only other point at which instrumental examinations of probable cut-offs were made, though there is reason to believe that there are several others which will demand early attention.

The distance across the bend, on the plantation of Colonel Coffee, when the measurements were made, (May 5, 1851,) was 3,907 feet. The distance around is said to be seven miles. The fall, from the surface above to the surface below the bend, when the river was 9.5 feet below the high-water line of 1850, was 1.1 foot; and during the high water of 1851, as determined from the tree marks, 1.3 foot.

The ground is gradually wearing away on both sides, and the distance across the neck is constantly, though slowly, diminishing. If the action of the river be not assisted by persons residing above, or others interested, there seems to be no immediate danger of a cut-off. But an effort has been made here, also, to assist the action of the river by clearing off the timber and cutting a very insufficient ditch. This effort may hereafter be repeated and more appropriate means adopted.

A cut-off at this point would increase the floods below from six to eight inches, and render the condition of many of the levees very precarious.

Other details of these examinations will be found in a supplemental re-

port. Cross-sections of the river were taken on both sides of each cut-off, which show that the Mississippi is making constant progress at every one of the bends enumerated, and will ultimately cut its way through the intervening land; unless prevented by works adequate to change the direction of its current.

It is not, however, the intention to urge a permanent resistance to the working of the river. There are many reasons why these cut-offs should be permitted, and even aided, if it were not that the country below them would be deluged. In course of time, when the authorities in whom the control of the Mississippi is lawfully vested, shall have adopted adequate plans for the protection of the delta and the reduction of the floods, and adequate means are appropriated to carry them out, and the work has so far progressed that an additional rise of two or three feet may be hazarded without apprehension, then, but not till then, it will be proper to cut off the great bends of the river, and let the water rise below them. But this thing ought not to be permitted before competent means are provided to protect the property below, or to compensate the sufferers below. Nothing can be more unjust than to inundate whole parishes, by disturbing the natural adjustment of the stream, and leave a sparse community to contend unaided with the evils recklessly or ignorantly poured upon them.

It would seem to be proper, in view of the great destruction of property which may be produced by cutting off the bends between Red river and the Arkansas, to provide for such attempts by appropriate legislation. This might be the means of at least preventing the acceleration of the evil. To prevent its occurrence from natural causes—by the slow and certain progress of the current—efficient works should be commenced forthwith, to protect the points assailed, by sheathing the shores, so that they will not wash away and cave in, or by changing the direction of the water, so that it may cease to wear away the soil at the points of danger, and, instead, deposite material that will serve as a protection.

#### OF PROTECTION BY LEVEES.

The Mississippi river, it has been stated, is now confined and retained within its banks entirely by levees, extending along both shores for a space of nearly seven hundred miles of its course. These levees are private works, constructed and kept up almost altogether by the individual proprietors of the river front. The security of the country depends, therefore, on the vigilance, providence, good judgment and experience of perhaps five thousand, and possibly ten thousand individuals. There are statutes, it is true, providing for the repair of these works when thought to be insecure, and supervisors, whose duty it is to inspect the embankments and enforce a proper care.

In case of the occurrence of a crevasse, or breach, in the levee, the water rushes over the cultivated soil, and fills up the swamps, until it is ultimately drained off by outlets leading into lakes, which communicate with the sea. The flow of the water is soon checked, on the up-stream side, by the gradual but general ascent of the country, which, it has been shown, dips from the north to south at the rate of eight inches per mile; and it is often arrested, in its course down stream, by the elevated borders of one of those ancient bayous which put out from the high banks of the Mississippi, as so

many ribs from the vertebral column, and officiate as *traverses* in protecting the country from the advancing overflow.

To an engineer, accustomed to the dimensions of a common canal bank, and the extreme care usually bestowed on its form and in its construction, it is a matter of some surprise to see what a slender bulwark men have ventured to place between the waters of the Mississippi and estates, of which the fertility is a proverb. It is indeed wonderful to observe the security with which the country trusts to the natural discipline under which this great river is expected to perform, each year, the precise movements of preceding years, and the surprise with which its occasional deviations are observed. The levees have, accordingly, been raised but ten or twelve inches above the known high-water marks, and are supposed, with such a margin, to be tolerably secure.

In the sections below will be seen, side by side, a specimen of a Mississippi levee and that of a common canal bank; each intended to resist a pressure of six feet of water. (See Fig. 10.)

The width of the canal bank, it will be observed, is three or four times as great at top as that of the levee; it has a much greater margin above the surface of the water, and it is built with a column of impervious puddle, to connect the bank with the best soil below. But, after taking all these precautions, and constructing the work with a degree of attention unknown on the Mississippi, the prudent engineer takes care to provide each level of his canal with adequate *wastes*, over which an accidental surcharge of water may be shed. Yet with all these safeguards, and the exercise of habitual vigilance, breaches are not unfrequent occurrences on the best managed canals. On the Mississippi, the levees are rudely constructed, and generally by inexperienced persons, without the exercise of any of those prudent precautions which universal experience dictates. The river is nowhere provided with artificial vents, to let off an accidental surplus of water, and there is no general head to organize, discipline or control the supervision of the lines. All is left to chance, or to such superintendence as the parish authorities may prescribe.

The consequence of this state of things is, that whenever the river rises within one or two feet of the summit of the embankments, breaches begin to take place, and the water rushes through with great velocity, rapidly carrying off the light material of the levee, and widening out the open space, until it is arrested by the planters, or by a more substantial soil. But it is not to be supposed that it is only necessary to make the *present levees* stronger, and guard them better, to obviate the necessity, and entirely prevent such occurrences. No such precautions will be found to be sufficient. The most that can be expected from these embankments is to preserve the country against the effects of moderate floods, which do not reach their summit. But they cannot be depended upon to resist those greater floods which now so often deluge the estates along the coasts; for, if crevasses should not occur for the relief of the channel, the water would rise higher, and pour over the tops of the banks. In fact, the Mississippi is now only prevented from obtaining relief in that way by the outlets which its own power forces for the discharge of its surplus through the weaker points. Crevasses can only be prevented by this process, with the supply of water sent down during either of the three last years, by both greatly strengthening and greatly raising the levees. How high it would have been necessary to raise them, had no breaches occurred, from Lake Provi-

dence down to New Orleans, we have not the data to show with certainty. The volumes discharged through the crevasses above Red river have never been estimated. But we are assuredly on the side of moderation when we conclude that if all the embankments had remained perfect, they would have needed an increased elevation, in many places, during the flood of this year, of *more than four feet*.

The protection of the coasts of the Mississippi, in lower Louisiana, against such floods as now come down, involves no insuperable difficulty. A guard levee, three feet higher than those now in use, with an occasional traverse or lateral levee back to the swamps, and a moderate increase of the capacity of the Plaquemine, are, in fact, all the expedients that need be resorted to. To construct such a guard levee as this, from Red river to New Orleans, on both sides of the river, and down the Atchafalaya,—say a levee averaging eight feet high and 450 miles long,—would involve an expenditure of probably not more than \$2,500,000. Such an expenditure would, in fact, be ample to protect the whole coast below Red river from the floods that are now felt. But such works would not protect the country above, and would be incompatible with the drainage and reclamation of the delta.

But it is not the protection of the country bordering the Mississippi against the present floods which constitutes the essential difficulty of this problem. It is simply to provide adequately for the increasing artificial floods which are about to come, by which we are embarrassed.

It has been shown that the work of reclamation in upper Louisiana, Mississippi, Arkansas and Missouri, will and ought to continue to go forward; and hence the works of protection for the country below must keep even pace with these. For this purpose it has been recommended to open extensive outlets at various points, to give vent to this water as it comes; and to commence with the two, that leading into Lake Borgne and the enlargement of the Plaquemine, which can be most promptly brought into active and efficient service. The great outlet upon which we hope ultimately to place much reliance, the Atchafalaya, it has been shown, cannot be made serviceable in time to relieve the Mississippi of the threatening deluge. It will be recollected that we are to provide adequately for—

1. The floods which *now* injure and alarm the country. To make the coast below Red river tolerably secure against the present supply of water, we must keep the surface down at least twelve inches below its present high-water marks.

2. To effect this we must provide vents for the water that is now discharged through crevasses. To dispose of this volume we must either rear levees, or make outlets, equal to the protection of the country against a rise of four feet above the present high-water mark. This condition, if we rely exclusively on levees, involves the entire reconstruction of all the embankments below Red river.

3. We must provide vents for, or protection against, the additional mass of water that is to be thrown into the channel as the cultivation of the new States above progresses.

4. We must provide a vent for, or protection against, the greater volume of water to be poured down in a given time, in consequence of the extension of the levees, and the exclusion of the floods from the natural reservoirs of the delta.

It is not the intention here, in dealing with such vast quantities, to

seek, or to profess to attain great accuracy. But it is the belief of the writer, founded on the facts set forth in this paper, that to afford the needful protection we must provide means adequate to give vent to, or to resist, an increased discharge of at least 700,000 cubic feet per second, or about seven-tenths of the present high-water discharge through the channel of the Mississippi.

In this view he has set no limit to the volume that shall be drawn off by the outlet into Lake Borgne, but has recommended that the cut there be boldly made; and that the river be allowed to take the pitch of ten feet, and force its way through as deep and as wide a channel as its power can produce.

If it can make an entire new channel, navigable for ships, through Lake Borgne, and transfer its bars from the Balize to the deep water south of Ship island, or produce a new one there, there let it go.

In this place, also, he has set no limit to the volume that shall be drawn off by the Plaquemine, but proposes that that outlet shall be enlarged until its enlargement be found to produce damage to the interior nearly equal to the advantage gained on the coast.

And in this view he proposes that the work on the Atchafalaya be commenced, though confident that the capacity of that bayou cannot be increased fast enough to meet the emergency of the case.

But in addition to all this, the protection of lower Louisiana will require other expedients. For this State, indeed, there is no alternative. She cannot wait for Congress to discuss, doubt, survey, and appropriate. She cannot wait for the slow machinery of legislation. She must build levees without hesitation or delay, or see her fields annually swept by the floods.

It is not intended here to recommend any given height of levee as sufficient in itself to protect fully any part of Louisiana. A line of guard levees is proposed from Red river down to Plaquemine; and around Old river, and down the east bank of the Atchafalaya, as the means of affording the quickest protection against the floods as they are, or as they probably will be when this levee is capable of retaining the crevasse water within the channel. But for those greater floods which are yet to come, this levee can only be regarded as an auxiliary protection, and a means of making the enlarged outlets do a greater duty. To perform this part, and retain within the channel the water now discharged by crevasses, without the aid of outlets, this guard levee should be raised at least six feet above the highest known floods on the coast at the point where it is proposed to be built. It is indeed doubtful whether, from the best information that can now be procured, a levee six feet higher than known floods would have been more than sufficient to guard the country below Red river securely against the flood of February, 1850, if no crevasse had that year occurred for the relief of the Mississippi. The height of six feet is further proposed as a limit which it will be very difficult to exceed on the coasts above, and in the belief that after such a levee has been completed, outlets and other guards can be prepared soon enough to meet the increased discharge as fast, or faster, than the works above can be made secure to send it down.

Simultaneously, therefore, with the enlargement of the Plaquemine, and the opening of a new pass below New Orleans into Lake Borgne, it is proposed to commence a line of guard levees at the Raccourei cut-off, thrown entirely back of all the present private or public levees, and to be raised in no place less than six feet above the highest floods. The present levees

will serve in some degree to protect the strips of land lying between them and the guard levee. The guard levee will prevent the extension of overflows, and aid in reclaiming the swamps.

The cost of such a levee as is here proposed would be about \$12,000 a mile. This will seem an extravagant sum, and doubtless something cheaper will first be attempted. But to construct a proper levee on both sides of the river, from New Orleans to the mouth of Red river, and on the west side around Old river, and a similar appropriate work down the Atchafalaya to the raft, will involve an outlay of at least \$5,000,000. And in stating this, the writer wishes to express the further opinion, that if such a levee be now made it will not serve to protect the country below Red river ten years hence, unless it be aided by those other expedients which have been, and which remain yet to be recommended.

It may be well to suggest that it might be good economy so to lay out these guard levees that they may hereafter be used as the foundation of railway tracks, to accommodate that land now inundated, which a bold and sufficient course of improvement will bring under tillage.

These suggestions are intended to meet the present state of things in Louisiana below Red river. This is the part of the delta which is first entitled to relief. If the work of reclamation and protection be commenced above Red river, either by Louisiana or the United States government, the water there excluded from the swamps will be sent down to increase the existing distress, before the lower country is properly prepared to receive it.

If Congressional aid is to be extended to any portion of the delta, it is, beyond all question, clear that every consideration of justice, prudence and humanity points to its first application to the country from Red river to the sea. When efficient guard levees and ample outlets are there commenced, and the means for their completion provided, then, and not sooner, it will be advisable and safe to extend the works higher up the coast.

#### OF THE PLAN OF RESERVOIRS.

We have now investigated the plan of outlets, and have approximated to the utmost effects that can be anticipated in attempting to dispose of the surplus water of the Mississippi by that device. It has been shown that there are great obstacles in the way of obtaining adequate relief by this process, and that the amount of relief which is possible will be limited by the destruction that may be produced in the districts upon which the diverted flood will be thrown.

We have seen that, as the next most feasible mode of obtaining prompt protection, we must resort to a more efficient system of levees in combination with outlets; but that, after costly levees have been built in the rear of the present levees, and all the water that can be reasonably discharged by outlets has been drawn off through appropriate vents, these expedients must still be regarded as mere palliatives, limited in their application to the lower part of the delta—and even then only warding off and postponing for a season, results which they cannot permanently prevent.

It has been shown, further, that the prominent causes to which the great floods of the Mississippi are attributable, are rapidly increasing in their effects, and will continue to increase with the progress of population and improvement, and the increasing value of land; that these causes are to be found in the artificial drainage instituted by individual proprietors wherever

the soil is turned by the plough, or may be reclaimed by removing obstructions from the natural channels, and in the exclusion of the water from the great reservoirs provided by nature throughout the length and breadth of the delta.

The conclusion to which the mind is brought by a comprehensive view of this great subject is, that, after exhausting all other means which art supplies, for relief, it will be necessary, in order to assure the protection of the whole delta from overflow, compatibly with the reclamation of the swamps, to construct new reservoirs, in the hilly country, at the sources of the Mississippi and its tributaries; there to hold back a portion of the surplus water, and act as substitutes for those reservoirs which are thrown out of use in the low lands, by the innovations of society.

The vast importance of the subject must stand in justification of a further attempt—at the risk of some repetition—to explain the physical character of the delta, in reference to the applicability of this plan. A great plane, bounded on the east and west by hills several hundred feet high, slopes down from a point above the mouth of the Ohio to the Gulf of Mexico, dipping towards the gulf at the rate of eight inches per mile. The Mississippi flows down this plane in a trench averaging 100 feet deep; and pursues a course so serpentine as to increase the length of the stream to more than double the difference of latitude, and to reduce the slope of the surface to less than half the average slope of the plane.

At low water the surface of the river lies five or ten feet below the general level of the plane of the delta; at high water it attains a height of fifteen feet, and from that to twenty-five feet above the general level of this plane. As the river rises, it overflows its borders—which are elevated, by the deposit of previous overflows, nearly to the level of common high water—and of course, inundates the adjacent low lands to the depth of fifteen or twenty feet in the places where the depression is greatest. The deposits from overflow are greatest on the immediate borders of the stream, where the first precipitation occurs; and diminish gradually as we proceed from the channel into the swamps. A natural levee is thus formed by the material which is left on its borders by the stream when in flood. This levee is usually about thirty feet above the low-water level of the river, and slopes back until it meets the low level of the swamps, five or six miles distant.

The tributaries of the Mississippi, and those of its outlets, are formed in the same manner and present the same features as those which characterize the Mississippi itself. In low water they all lie below the general plane of the delta, and rise many feet above it when the river is high. They are all retained, excepting in times of great floods, between the levees which have been deposited by their own overflows.

The area lying between the Mississippi and the hills, and between the natural levees of the lateral streams, is an uneven plane, indented by alternate "sluys" and low ridges; which, with the exception of narrow belts of higher soil, are all subject to inundation when the river is above its banks. In the lowest depressions are found navigable lakes and bayous, and sometimes important streams, which serve to drain this water of overflow into the Mississippi as the surface of the river falls.

It will thus be perceived that the primary function of all that portion of the delta lying between the narrow strips of elevated soil which follow the windings of the streams, is to receive the water of overflow as the river rises, and thus mitigate the destructive effects of the flood. The whole of



this region, with the exception of these elevated belts, found chiefly along the immediate coast of the streams, is therefore to be regarded as a *natural reservoir*, formed to receive and retain for a season the surplus drainage of the Mississippi valley.

Recognising this fact, we are able to account for the anomaly which has already been noticed in describing this great river and its natural regimen. In passing from Memphis almost to the Gulf of Mexico, we find that the Mississippi maintains, with material local irregularities, about the same average width between its banks, and the same average area of water-way. It absorbs in succession the waters of the Ohio, the St. Francis, White river, and the Yazoo, and many other secondary streams, and yet appears to grow no larger, and flow no faster; it takes in the Arkansas and Red river, each rising in the Rocky mountains and flowing through a channel of fifteen hundred, or, as many suppose, two thousand miles in length, and it is no more formidable after, than it was before its column was swollen by these great contributions. The reason of this is, that the water of the Mississippi is drawn off by bayous, as the flood descends, and is discharged into the lateral reservoirs of the delta. The water that is poured into the channel by the Ohio, is partly drawn out by the reservoirs along the St. Francis; that which returns again into the channel at the mouth of the St. Francis, is taken up again by the swamps of the Yazoo; and that which is discharged by the Arkansas, is scarcely sufficient to supply the reservoir between the Mississippi and the Washita. The flood that comes from the Mississippi or Missouri parts with its water in passing from bayou to bayou, and is often entirely lost before it reaches Red river. *The swamps absorb it all.* A wave of fifteen or twenty feet at Memphis will scarcely be observable below Natchez, unless the rise continue for many days. The draught from the channel into the reservoirs reduces the volume flowing down the river in times of flood below Red river, to less than is found above the mouth of the Ohio.

Now we have seen how the planters who have established their homes along the narrow strips of fertile soil forming the borders of the lower Mississippi and its tributaries, have for years contrived to protect their estates from overflow by raising embankments near the edge of the streams, closing up the natural vents by which the water obtained access to these reservoirs, and confining it to its own proper channel. This water, unable to escape laterally, it is obvious, can only be discharged by rising higher and flowing faster. Thus it is that the portion of the floods which formerly filled these swamps or reservoirs for several months of almost every year, and then slowly drained off as the river fell—making a flood of more moderate height and greater duration—is now compressed between these levees or artificial dams, and can only find vent by rising upon itself. Each mile that is thus added to the length of the levees above, leads to the necessity of increasing the height of the levees below, or compels the planter to submit to a crevasse which shall sweep his own estate, and serve in some measure as a safety-valve to his more fortunate neighbor.

The effect of thus extending the levees has been fully discussed; and it has been shown that by the plans adopted, this extension is ruinous to the districts already leveed, yet necessary to the reclamation of the swamp lands, where the new levees are built, and therefore inevitable.

It will be readily admitted that the question how to reconcile these great objects, of protecting the cultivated fields of the States below, while redeem-

ing the swamps of the States above, involves some of the most formidable difficulties that can be encountered in the progress of useful improvement.

The physical difficulties alone, are of the highest order, and, as we have seen, must be boldly and promptly met, or the lower and most beautiful portions of Louisiana must be abandoned. But it involves other questions of serious magnitude, and covering other vast interests. It brings up grave questions of individual rights, judicial control and the rights of States. Viewing the immense stake at issue, or which at no distant day will be involved, it may be anticipated that if some adequate remedy be not provided, this question will ultimately lead to serious conflicts of interest.

If it be a maxim of civil law that men shall so use their own as not to do injury to their neighbors, the right of the counties above to interrupt the flow of water through its natural channels, and force it down upon the parishes below; or the right of Arkansas or Mississippi to reclaim their swamps by converting the sugar estates of Louisiana into a swamp; or the right of Missouri to drain her lakes by overflowing the cotton-fields of Mississippi and Arkansas—are questions which may yet become as difficult to the jurist and the statesman as the control of this great river is now to the engineer.

The subjects involved in this problem are too vast in their consequences to permit men to evade their contemplation, or to shrink from the efforts necessary to obviate the approaching events, or to mitigate the impending results.

Plans which, for ordinary purposes, it would be unsafe for a practical man to propose, and which, for ordinary purposes, it would be in vain to suggest, for an object of this scope, may well command attention.

Now, it has been clearly shown that the prominent cause of increasing inundations, and that which is still threatening greater evils, is the exclusion of the water of overflow from the swamps, and the destruction of the natural reservoirs of the Mississippi, by means of those embankments, originally commenced near New Orleans, and gradually extended up the coast. As the swamps are thus prevented from officiating as reservoirs, the river itself is converted into an artificial reservoir. The water that cannot get into the swamps must remain in the channel until it can traverse its length; and the embankments must be increased in height until the river is capable of holding the flood, or until the column acquires speed enough and depth enough to effect its own discharge. But the river is a reservoir of the most ineffectual character. To make it operative or reliable, either as a sufficient reservoir or conduit, more than 2,500 miles of continuous embankment must be reared and maintained on a caving and treacherous soil. More than one-half of this embankment has already been established, but not of sufficient dimensions to fulfil the purposes intended. The industry of individual proprietors, backed by the co-operation of counties, the liberality of States, and a vast donation by Congress, is now applied to the extension and completion of the line.

A bolder undertaking than that now contemplated has never engaged the thoughts, or been confronted by the courage, of any other people. It is even to be doubted whether it would be attempted here, with all the resources of the American character, and for all the inducements that stimulate the effort, if those now occupied with the work were fully aware of the magnitude of the labor, and of the future costs of re-construction and maintenance which it will involve. No safe conclusion can be drawn of the influence which the closing up of these open lines of levee will have upon

the floods, from any past visible results. The water, hitherto, has been but very imperfectly excluded from the swamps. It has found vent through wide spaces where there are yet no levees; through crevasses and abandoned lines. The present effort is to close up these gaps and make the lines continuous; but this, it will be found, can only be done after the old levees have been re-constructed on a broader base and raised higher.

The population—the sparse and by no means wealthy population—that has had the courage thus to face the Mississippi along its double front, and maintain their estates by damming the waters back, it is to be supposed will not be deterred from examining the project now suggested, of constructing dams upon the tributary streams which furnish this water, and substituting larger reservoirs in hilly districts, where the soil is valueless, for those which are destroyed in the rich bottoms of the delta. They who have already resisted the power of the river, where it has been necessary to construct dams along its whole course, on both shores, will assuredly be able to appreciate how much easier it will be to erect proper dams across the gorges of a mountain, where the reservoir is already formed, and bounded by high hills on every side, excepting the small gap to be closed up.

It is not the intention now, however, to discuss the proposition which the writer ventures to suggest, in detail. That has been done in another paper, which has failed to win the public approbation.\* But it is his duty here to say again that it is entirely practicable, for a cost that will be fully justified by more than one of the great objects which will be accomplished by this plan, to hold in reservoirs surplus water enough to improve the navigation of every navigable stream in the Mississippi valley, by discharging the excess so retained, into the streams when it is needed there; and, at the same time, and by the same process, to protect the whole delta, and the borders of every stream in it, primary or tributary, from overflow.

But the writer wishes not to be misunderstood; it is far from his intention to limit exertions to the plan which he deems essential to full and permanent success. That plan will relieve, not merely the country below Red river, but the whole valley of the Mississippi, from the site of the reservoirs in the distant mountains, to the gulf. It will ultimately reclaim the swamps of the entire delta, and convert the most worthless and least habitable soil into the richest and most productive. It will render every stream that is ever navigable, permanently so. It will remove that great difficulty which men find in deciding on what rivers are worthy of national care, by rendering them *all* national. For, surely, whatever helps to protect the whole delta, in any degree, from overflow, and improves the navigation of the Ohio and Mississippi, must be considered of national importance—even though it may, incidentally, improve the navigation of the Alleghany and Illinois, so far as those streams are used as the conduits for the water.

Still, it is not the writer's intention to advise a dependence upon this plan alone, which has yet to pass through the slow ordeal of public investigation. On the contrary, he recommends a prompt and vigorous application of the power and resources of the proper authorities, whether national or local, to the preservation of the afflicted population of the delta, by all the means that have been discussed in this paper, and which may now be recapitulated.

1. By the immediate organization of a proper system for the construction

\*See "Contributions to the Physical Geography of the United States. &c., by Charles Ellet, jr.," published in the 2d vol. of the Smithsonian Contributions to Knowledge.

and maintenance of the levees of lower Louisiana, under the direct authority and control of the State: that a new or guard line of levee be made—commencing at the mouth of Red river and extending down to the vicinity of Donaldsonville, about eighty miles above New Orleans, on both shores—of sufficient width at top for an ample roadway or railway track, and at least six feet above the highest flood which has been witnessed at the points where the levee is to be built.

2. That, simultaneously with the commencement of these improved levees, there be formed a new outlet from the Mississippi into Lake Borgne, about ten miles below New Orleans, to relieve the river at that point and reduce its level there as nearly as possible to the level of the gulf.

3. That, without any delay, measures be adopted to promote the enlargement of the Bayou Plaquemine, so as to relieve the river, in that neighborhood, of the increasing pressure of the floods which will be produced when the water which now escapes through the crevasses, is confined by the stronger levees recommended to be raised.

4. That, simultaneously with the formation of these safety-valves below, and the construction of a guard-levee, the necessary steps be taken to encourage the enlargement of the Atchafalaya, by clearing off and cultivating the borders, straightening the channel, and undermining the salient angles which it is desirable to remove.

5. But, while recommending these prompt and vigorous measures, it is the duty of the writer to express his conviction that, after all these means of relief, carried as far as prudence and a proper regard to economy and the interests upon which this excess of water will be turned, have been exhausted, they will be found insufficient to secure even the State of Louisiana against the floods which, at no distant day, will be poured down the Mississippi; while the great area subject to inundation, in Arkansas and Mississippi, can receive no sensible relief from any of *these* expedients but that of levees. To secure the whole delta, it will be necessary to commence promptly and press vigorously the great work of retaining the water in the mountains.

We come then to the question which is to be decided by the enterprising men and reflecting minds destined hereafter to cope with this vast subject. Shall the upper States go on to construct their levees, and raise them higher and higher as the water is found to rise in consequence of their construction—endeavoring to overcome by levees the difficulties mainly produced by levees—doing work, daily, which will inevitably lead to the immediate necessity of more work to render that work secure—or shall they begin to adopt, in connexion with that which produces so much incidental damage, a system of protection which, at every step, will do some good service to every interest? Shall it continue to be the policy, the favored and exclusive policy, to make whole provinces and counties depend for their salvation on the perfection of every part of several hundred miles of embankment; and to force every individual to seek to protect himself against the efforts of every interest above him? Shall this system continue until the artificial banks of the Mississippi shall vie in height with those of the Po, and the population in the low lands, behind the intrenchments, shall be in hourly dread of crevasses of which the force will then be irresistible? In short, shall the aid of Congress continue to be invoked, and the legislature of States to be directed, to the indefinite prosecution of a scheme which adds to the present distress at every step of its progress, when the same re-

sults may be ultimately obtained by a process which harmonizes every interest and does good to all: which will, at the same time, protect the entire coasts of the Mississippi, and the banks of its tributaries; reclaim the swamps of the whole delta, and improve the navigation of every river of which the floods are received by the Mississippi?

But it may be asked, where is this work to be commenced, and how is it to be prosecuted, to accomplish visible results over a field so immense, in any reasonable time? The public mind has yet to be convinced that it is even practicable to retain a sufficient volume of water in the mountains to reduce the floods in the Mississippi any sensible amount. It has, it may be added, yet even to be persuaded to reflect upon the practicability of the suggestion. In the view of those accustomed to advocate and conduct difficult enterprises, it is precisely the persuasion and conviction of the public mind of the feasibility of a measure, that constitutes its difficulty. When men reflect on any thing which has a solid basis of truth, they have arrived near the point of conviction.

It is not difficult to show that, to reduce the floods of the Mississippi one foot, we must draw off or retain in reservoirs about 20,000,000,000 cubic feet per week; and that to retain this volume will require a reservoir 110 feet deep and covering seven square miles. Consequently, it would not be difficult to show, that, to reduce the floods twelve inches for a space of sixty days, would require that nine such reservoirs should be applied to that purpose. It would not be difficult to show that these reservoirs would retain water enough to maintain the navigation of as many of the most valuable rivers that flow into the Mississippi from the east; but, to bring the proof in detail, will require surveys; and to obtain such surveys, will require the confidence, leisure, and action of Congress.

Until these surveys are ordered, the further discussion of this subject will be premature.

When the minds of men are directed to the fact, that the floods are increased by the destruction of the natural reservoirs of the delta, it will not, perhaps, be difficult for them to appreciate that they may also be reduced by the creation of artificial and better reservoirs to replace those that are destroyed.

Under the operation of the causes which have been explained, the course of nature has been disturbed, and floods once regarded as exceptions to the usual order of things, are now of almost annual occurrence.

Under the operation of human agency, and nothing else, the waters have been, and are still being diverted from their course, and concentrated in the great rivers; and it is now proposed to counteract the hurtful effects of this diversion, by works of art, calculated first to restore, and ultimately to improve, the natural regimen of the streams. It is proposed, in short, to construct new reservoirs to receive the increased drainage produced by the plough, and to compensate for those reservoirs which have been, and are about to be destroyed by the spade; to substitute for the swamps, which have always received the waters of overflow, capacious lakes in the rock-bound valleys of the Alleghany and Rocky mountains. It would seem to be useless to demonstrate that such reservoirs will be cheaper and more efficient than the reservoir which has been formed of the river itself, by the levees, and which can only be made secure by the maintenance of from two to three thousand miles of embankment on a soil always liable to slip and be undermined by the action of the pent up water.

In the view of the writer, every effort should be made, while new vents are being opened and guard levees constructed below, to retain the surplus water in the lakes at the sources of the Mississippi and Missouri, and along the course of Red river; while proper sites for reservoirs should be sought in all the appropriate valleys of the Alleghany, and ultimately those of the Rocky mountains. For this object, he respectfully recommends that surveys be promptly instituted at the sources of the Monongahela, Alleghany, Kanawha, Cumberland, and Tennessee, and other tributaries of the Ohio, for the purpose of ascertaining the most advantageous sites for great reservoirs that will discharge through their respective channels. That, in the selection of these sites, regard be had primarily to the supplying of the Ohio and the greatest of its navigable tributaries with water in the summer months—using the reservoirs for the double purpose of withholding the flood water from the Mississippi, when that river is overflowing its banks, and supplying the water so withheld, to the Ohio itself, and its navigable arms, when their navigation is impeded by droughts.

That these surveys be extended promptly to Red river and its tributaries, for the double purpose of applying the great lakes with which that valley abounds, to keeping back the floods from its suffering population, and relieving its summer navigation from obstruction, by allowing the surplus so retained, to pass down in the season of low water. The lakes in the valley of Red river may be turned to good account in the prosecution of this plan, and the valleys of its tributary streams are understood to afford remarkable opportunities for the creation of great artificial reservoirs. The flood of 1849, by the destruction of the cotton crop of Red river alone, was productive of damages to the amount of five or six millions of dollars,\* while less than the half of this sum would probably have sufficed to create reservoirs sufficient for the permanent protection of all its valley, and the great relief of the Mississippi delta from the mouth of Red river to the sea.

That investigations for the same object should be extended speedily to the Illinois, the Washita, and the Arkansas.

It is recommended that attention be first given to the control of the great navigable tributaries which pass through the most highly cultivated portions of the valley of the Mississippi—because on these a double service can be performed—the navigation can be improved while the floods are arrested. But, it is to be recollected that while this motive prompts us to look to the distant arms, it is those streams which, like the Washita and the Cumberland, discharge nearest to the point of suffering, that add most injuriously to the height of the floods of the Mississippi.

In closing his duties, the writer will venture to add a few suggestions touching the improvement of the navigation of the western rivers, which is necessarily embraced in this plan of restraining the floods. To produce useful effects, it is indispensable that the United States government, or all the States in the valley of the Mississippi, enter at once upon a general system of river improvement. Snag-boats must be put at work upon portions of the Mississippi, and all its navigable tributaries, in low water, to prepare their channels for the reception of a permanent supply.

Reservoirs must be constructed wherever it is practicable to find appropriate sites, and the commerce justifies the cost, large enough to receive

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\* This flood is represented to have produced a total destruction in the valley of Red river alone, of fully \$7,000,000.

and retain the flood-water of such tributaries, and let it off again when the supply is needed for the navigation. It is not at all necessary to keep watch upon the reservoirs to see that they perform properly. It is perfectly practicable so to adjust their apertures that they may discharge constantly and almost uniformly; filling up when the flood comes down, and the supply is in excess, and falling again when the sources of the flood begin to fail. The system, when fully carried out, will be almost self-regulating. While the snag-boats are at work preparing the channels of the great tributaries, and the reservoirs are in progress of construction on the smaller sources, the outlets should be in process of preparation to the gulf, and the guard levees should be advancing below Red river. All these works will be necessary; and it is believed that by a general, prompt, and confident effort, directed simultaneously to the acceleration of the discharge of the waters below, and to their retention in reservoirs above, while strengthening the barriers on the lower coast, the works may at least keep pace with the progress of those causes which threaten the ultimate destruction of the whole of lower Louisiana.

It is impressed upon the mind of the writer with the force of demonstration, that these several measures must be adopted, and adopted promptly, or that causes now in operation will speedily bring great distress throughout the delta of the Mississippi, from the mouth of the Ohio to the Gulf of Mexico.

If they are adopted, this fertile country will prosper, and add vastly to the glory and wealth of the nation; if they are neglected, the population of the valley of the lower Mississippi must maintain a very long, though in the end, perhaps, a successful struggle against the increasing floods.

The position of Louisiana, in this eventful issue, is one of peculiar difficulty, and may result in inestimable distress, if she be left single-handed to struggle with the torrent which the industry and enterprise of the people of the upper States may pour down upon her devoted soil. However unequal and oppressive may be the contest, she can afford to lose no time, but must commence at once, whether aided or alone, to protect herself by outlets near the gulf, and by the most efficient levees near Red river; levees to prevent the deluge from sweeping over her surface, and outlets to vent the water more freely as it comes. Her fate is on this issue, and she is destined to bloom, the garden spot of this great valley, if her skill, finances and fortitude prevail, or to be known only as a desolate swamp if she falter and yield to the force of the flood. The question, whether she shall be allowed to stand alone, and protect herself unaided, from the difficulties forced upon her by the States above, or be sustained by that government which represents the power of all the States, is one of deep interest, which must be decided by the Justice and Humanity of the nation.

[The writer takes this occasion to acknowledge the valuable services rendered in this investigation, by his intelligent and careful principal assistant, Mr. J. Dickinson, who personally took, or superintended the taking of, nearly all the soundings and other measurements recorded in this paper.]

## NOTES.

## NOTE A.

It is not deemed necessary to burden this report with the details of the observations on the relative velocities of the currents at and beneath the surface. The results are correctly stated in the text, and show conclusively that no error of any practical value can be committed by computing the discharge of the Mississippi from the surface velocities; though great errors might be made by relying on the speed of the central currents.

The details of the observations upon which the writer's conclusions are founded, will be given in a supplemental report.

## NOTE B.

The statement here given of the discharge of the Mississippi at Memphis, as deduced from the observations of Mr. Marr, needs special explanation. The average daily discharge, as it is given in Mr. Marr's report, for nine days of extreme high water, was

74,530,955,174 cubic feet ;

or, at the rate of

862,626 cubic feet per second.

But, in the calculations from which this result is obtained, an allowance of a fraction over ten per cent. was made for an assumed retardation of the water beneath the surface.

The experiments of the writer not having authorized such an allowance, the ten per cent. so deducted has been restored, in order to obtain the result of the measurements at Memphis, when calculated in the mode adopted in this paper;—from the surface velocities.

Some of the observations of Mr. Marr show a discharge at Memphis in 1850 of 1,040,000 cubic feet per second, when no deduction is made on account of the supposed average retardation of the mass of water beneath the surface.

## NOTE C.

It was the intention of the writer to discuss this formula, in some detail, in a note to the text. But being under the necessity of submitting this report hastily, and wishing to test the formula on shallow mountain streams, he is compelled to reserve this discussion, which will form part of a supplemental paper.

## NOTE D.

The level of low water in the Ohio river, at Cincinnati, is 432 feet above tide. The surface of Lake Erie is 565 feet above tide.

By the recent survey of the Ohio and Mississippi railroad by Mr. E. Gest, civil engineer, the level of low water in the Mississippi at St. Louis is



ascertained to be  $146\frac{1}{2}$  feet below Lake Erie; Hence, low water in the Mississippi, at St. Louis, is  $418\frac{1}{2}$  feet above tide.

The level of low water in the Mississippi at the mouth of the Ohio, as ascertained by Mr. John Childs, engineer of the Mobile and Ohio railroad, is 275 feet above tide; whence the fall of the Mississippi, from St. Louis to the mouth of the Ohio, is  $143\frac{1}{2}$  feet, or, assuming the distance to be 200 miles, at the rate of  $8\frac{1}{2}$  inches per mile.

There is certainly no conclusive reason for questioning the correctness of this result. But the descent of the Mississippi above the mouth of the Ohio, which it exhibits, is so much greater than appears probable, that the writer is almost compelled to suspect some error in the determination of the height of low water at St. Louis.

#### NOTE E.

The following passage in the report already noticed, of passed midshipman Robt. A. Marr, deserves attention:

"It has been estimated that of the rain-water falling in the valley of the Mississippi, only  $\frac{1}{10}$  part reaches the gulf. What proportion is lost after once getting into the channel, is, I believe, not known. Between Memphis and Vidalia, there are immense tracts of overflowed land; and according to the above hypothesis, immense quantities of water may be taken up by evaporation and wafted by the winds, to swell the currents of far distant rivers; may disappear through the fissures in the bed of the Mississippi itself, or be absorbed and filter through the overflowed earth to fill the capacious chambers of subterranean reservoirs."

No authority is given in the report for this extraordinary estimate, which it is proper to say, is altogether erroneous. The discharge through the channel below Red river, *in a single day*, is about ten times as great as the above estimate for the whole year. The fraction  $\frac{1}{10}$  should have been about the  $\frac{1}{3}$ th: its *precise* value not having yet been ascertained.

#### NOTE F.

The following speculations concerning the future progress of the population of this continent, are found in the Encyclopædia Britannica—article "America:—"

"We know with certainty that a prosperous community, possessing abundance of unoccupied land, will double its numbers in 25 years, *without any aid from emigration*; and as the scale ascends in geometrical ratio, a short time necessarily produces a wonderful change. It is to be observed, however, that the whites, possessing the advantage of superior industry, order and forethought, naturally increase faster than the other classes. In the United States this part of the population increases at the rate of three per centum per annum."

In this article the white population of the American continent is assumed to have been 21,000,000 in 1830, and to increase at the rate of three per cent. per annum; from which data the following results are obtained:

Number of whites in 1830-----	21,000,000
" " 1855-----	42,000,000
" " 1880-----	84,000,000
" " 1905-----	168,000,000
" " 1930-----	336,000,000

These speculations are carried still further in the article quoted. But they do not include the great element of all such computations when applied to the United States—the accessions to the population of this country from foreign emigration.

The above results, however, are sufficient to lead the reflecting mind to a safe conclusion on the question, Whether the delta of the Mississippi is or is not to be wholly reclaimed and brought under cultivation?

#### NOTE G.

The following is the table computed by Professor Riddell, for the height to which given volumes of water admitted into the upper end of Lake Pontchartrain would raise the surface of the eastern part of the lake. [Report of Joint Committee on Levees.]

Cubic feet of water discharged per second.	Corresponding elevation of the lake in feet and decimals.
46,756	0.027
93,513	0.111
140,269	0.250
187,026	0.444
233,782	0.694
280,539	1.000
327,295	1.361
374,052	1.777
420,808	2.250
467,564	2.777
514,320	3.361
561,078	4.000
607,834	4.694

This table may be used as a numerical approximation to the law by which the height of the lake, above a stationary or tideless sea, must increase, in order to force given volumes of water through the passes; but not as any approximation to the practical effect which a given volume, admitted into the lake, would have in elevating its surface.

**DIAGRAM**  
*showing the relative heights*  
*of Floods in the*  
**MISSISSIPPI RIVER**  
*for seven years at several places.*

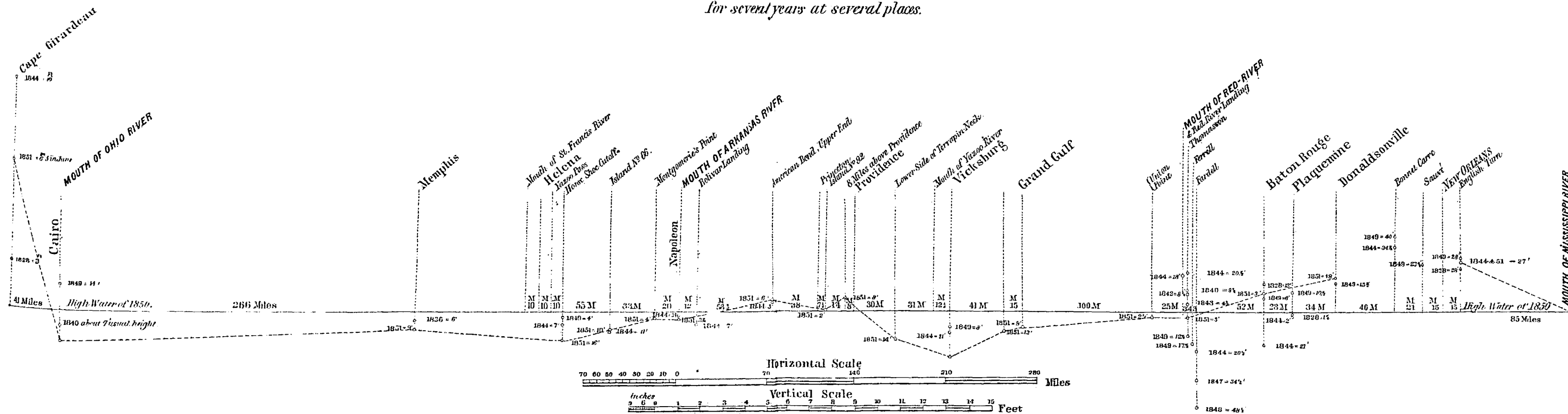


Fig. 6.

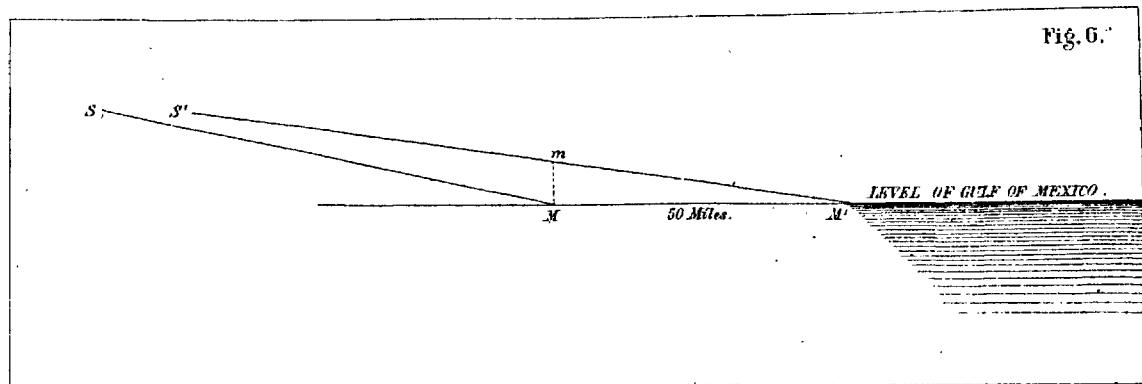
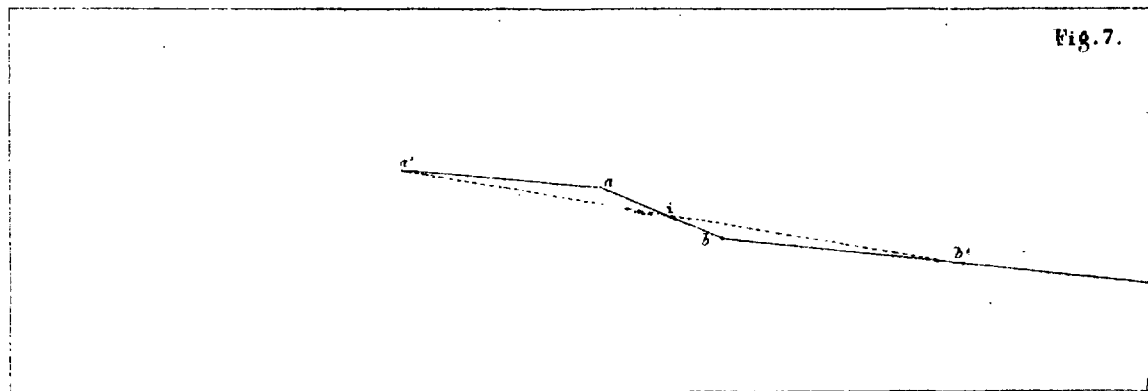


Fig. 7.



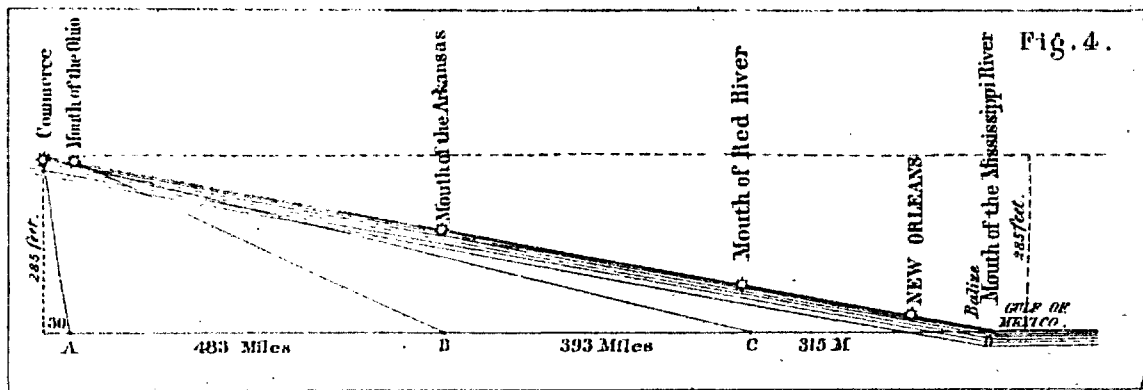
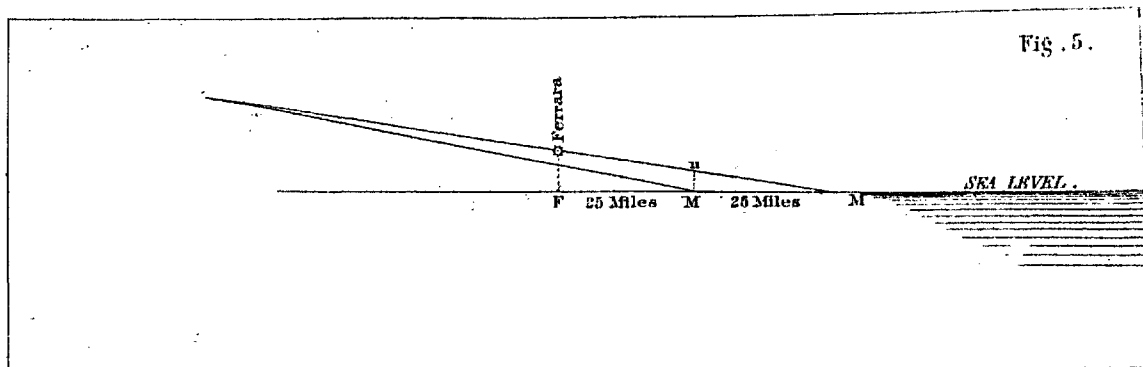
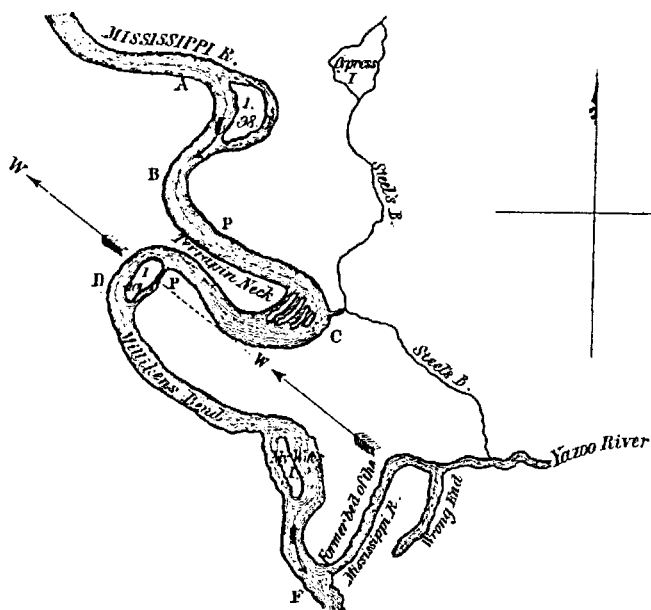


Fig.3.





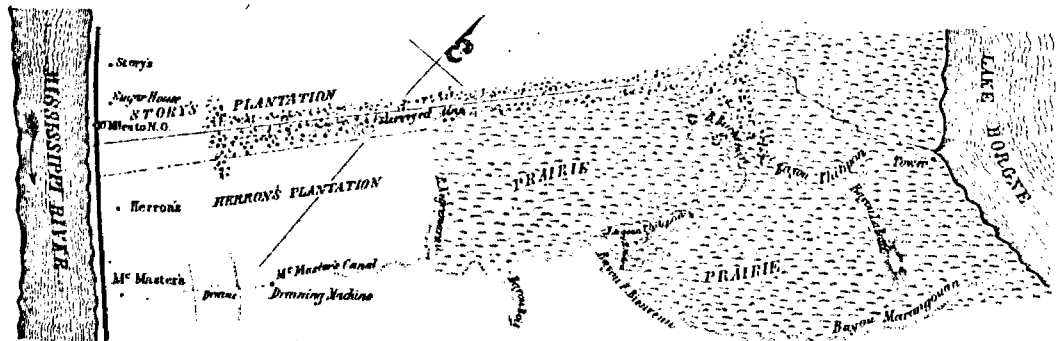


Fig. 9.

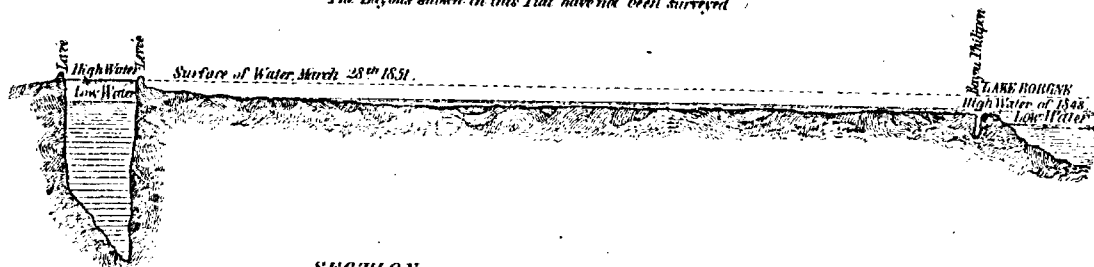


Fig. 10.



REPORT  
OF  
THE SECRETARY OF THE NAVY,

WITH

*The proceedings of a Court of Inquiry in the case of Wm. K. Latimer, a  
Captain in the navy.*

DECEMBER 27, 1851.

Read, and ordered to lie on the table.

JANUARY 10, 1852.

Referred to the Committee on Naval Affairs.

IN SENATE OF THE UNITED STATES,  
January 21, 1852.

*Resolved*, That the charges and specifications, and also the report and opinion of a court of inquiry, in the case of Wm. K. Latimer, and the letter of the Secretary of the Navy transmitting the same, and the general order in said case dated July 1, 1851, be printed for the use of the Senate.

ASBURY DICKINS,  
*Secretary.*

NAVY DEPARTMENT,  
December 26, 1851.

SIR: In compliance with a resolution of the Senate, adopted on 22d instant, I have the honor to transmit, herewith, the record of the proceedings of a court of inquiry, commenced November 20, 1850, on board the United States ship Cumberland, in the Bay of Naples, by order of Commodore Charles W. Morgan, commanding the United States squadron in the Mediterranean, for the purpose of investigating charges preferred against Captain William K. Latimer, of the navy; together with a copy of a general order issued by the head of this department, on the 1st of July last, after revising the proceedings of the said court.

As the original record of the proceedings of the court is transmitted, the department respectfully requests that it may be returned when the Senate shall have no further occasion for its use.

I have the honor to be, very respectfully, your obedient servant,  
WILLIAM A. GRAHAM.

Hon. WILLIAM R. KING,  
*President of the Senate.*

## UNITED STATES FRIGATE CUMBERLAND.

Spezzia, September 22, 1851.

SIR: I regret to have the disagreeable duty of reporting to you Captain W. K. Latimer, now commanding this ship; upon which report, I beg the department may take such action as it deems the case to merit. I cite the following, under their respective heads, as instances of gross offence against the laws and regulations of the Navy Department:

1st. *Illegal punishment.*—First, in this: That Captain Latimer has from time to time, between the 18th July, 1849, and the 22d day of September, 1850, been in the habit of illegally punishing a portion of the crew of this ship with an instrument known as the *coll*, in violation of law, viz: Jos. R. Watson, (boy,) with ninety lashes; Jno. Hamilton, (captain maintop,) twelve lashes; John Holland, (captain mizentop,) twelve lashes; Jno. Livingston, (captain foretop,) twelve lashes; Jos. Wilson, (captain maintop,) twelve lashes—and others, to the number of more than twenty in all, whose names are recorded on the log-book, besides others whose names are *not* recorded upon it.

Second, in this: That Captain Latimer has discharged from this ship, in the port of Mezzina, Wm. Reed, (seaman,) Jno. Scott, (orderly seaman,) Thos. Childs, (seaman,) and, at Trieste, Jas. H. Travannan, (orderly seaman,) as a punishment for offences committed by them which might have been legally punished according to the laws of the navy.

2d. *Disobedience of orders.*—First, in this: That Captain Latimer has knowingly and wilfully disobeyed the orders of the department relative to the logging of all punishments that take place on board the United States vessels of war: he having directed Lieutenant G. G. Williamson to order the officer of the deck *not* to record an instance of punishment with the *coll*, which took place in the presence of, and by the order of Captain Latimer, on the 13th day of August, 1849.

Second, in this: That Captain Latimer, between the 18th day of July, 1849, and the 15th of August, 1850, has been in the habit of punishing with the *coll* in private, in the cabin of this ship, Jos. R. Watson, (boy,) and sometimes twice in one day, in violation of an order of the department, directing that all punishments on board the United States vessels of war shall be in public, and in presence of the crew.

Third, in this: That Captain Latimer has, in disobedience of the orders of the Bureau of Construction, Equipment, &c., knowingly and wilfully caused a number of alterations to be made in this ship, viz: removing the horse-blocks from the ship's side; altering the gaffs; removing the signal-lockers from under the poop; removing the rail from the break of the poop; removing the boarding-pikes from around the masts, and making a new rack in the main-hatch; altering and enlarging the cabin pantry; making a new bulkhead, and *blocking up another* gun; putting up a bulkhead on the berth-deck for the forward officers; and many other alterations which are upon record.

3d. *Scandalous conduct.*—First, in this: That Captain Latimer while lying in the harbor of Mezzina, on or about the 25th day of January, 1850, after having flogged a number of men, caused the *cats*, or instrument of punishment, to be hung up publicly, at the *mainmast*, where they remained until he was prevailed upon to allow them to be taken down by representations made to him by the First Lieutenant, of the ill effect such

a thing, if reported, would have upon his character at home—thus bringing the navy and our country into disrepute with foreigners constantly visiting the ship, and degrading the crew to a level with galley-slaves.

Second, in this: That Captain Latimer did, on the 18th June, 1850, on board this ship, while lying in the harbor of Trieste, attack, and beat with his fists, and choke, Jas. H. Travannan, (orderly seaman,) belonging to said ship, whilst said Jas. H. Travannan was under charge of a sentry, and in a state of gross intoxication; and further, that Captain Latimer did attempt to draw a cutlass upon said James H. Travannan, for the purpose, as he publicly declared at the gangway, of running it through the body of said James H. Travannan; and further, that Captain Latimer did publicly express regret that he was prevented from running him through the body, by the scabbard adhering to the cutlass when he drew it from the rack; and further, that Captain Latimer did dismiss the said James H. Travannan from the United States frigate Cumberland, without bringing him to a court-martial, or punishing him according to law, after having publicly charged the said James H. Travannan with having laid his hands upon him; thereby evincing a desire to smother the affair of the 18th June, between himself and the said James H. Travannan.

Third, in this: That Captain Latimer has, by having exhibited on frequent occasions an unwillingness to promote worthy men as petty officers, on account of their being of foreign birth, and by discharging most ignominiously several men for declaring themselves, when in a state of intoxication, to be Englishmen, caused a hostile spirit to exist on board the ship under his command, between the native and adopted citizens of the United States; thereby violating the spirit of the laws of our country with regard to it adopted citizens, and also holding out an inducement to those who wished to leave the ship, to simply declare themselves to be of English birth, and thus achieve their purpose, thereby seriously impairing the discipline and efficiency of the ship.

Fourth, in this: That Captain Latimer, when called upon by Surgeon Barrington and Lieut. Steedman, on June 27, 1850, in relation to his having changed the ward-room dinner hour, was guilty of wilful falsehood, in stating to them that he had not interfered with the ward-room dinner hour, and had given no such order, when he well knew that he had but a few days before, while lying in the harbor of Trieste, given the following order to the first lieutenant, to wit: "When we go to sea again the ward-room officers must dine at 2 o'clock," or words to that effect; and also that he had reiterated that order at sea, on June 24, 1850. And also, in this: that Captain Latimer has been in the habit from time to time of making statements and assurances to officers on board this ship, in relation to affairs which immediately concerned their comforts and interests; and subsequently exhibited such an entire disregard for his word conveyed in those assurances as to destroy all confidence in his veracity.

4th. *Neglect of duty.*—First, in this: That Captain W. K. Latimer did not cause the crew of this ship, while under his command, to be exercised at the great guns at firing at a target until the 24th day of June, 1850, more than eleven months after the ship was put in commission, he having had abundant opportunity to cause the crew to be so exercised; and further, that the crew of said ship have not been drilled at loading and firing the muskets or carbines, with either ball or blank cartridge, up to this date, there having been abundant time and opportunity for so doing.

Second, in this: That Captain Latimer has been guilty of a most — neglect of duty in permitting the fall of the *life-buoys* of this ship to be obstructed by the cabin-ports; the existence of such obstruction having been reported to him from time to time by the first lieutenant.

Third, in this: That Captain Latimer permitted the ratlines of the — rigging of this ship to remain in wear, after the same had been frequently reported to him as unfit for use and dangerous to the crew: and further, that he did not cause new ratlines to be fitted until several of the men were hurt, one of them seriously injured by the breaking of the same.

5th. *Tyrannical and oppressive conduct.*—First, in this: That Captain Latimer did cause to be drawn from the gun-deckbeams of this ship, two hundred and fifty hammock-hooks, thereby forcing so many of the crew to sleep upon the berth or lower deck, as to seriously endanger the health of the ship, and to cause the remonstrance of the surgeon: and further, that Captain Latimer, after an interval of some weeks, did replace only a portion of said hooks, thereby still most uncomfortably crowding the men below, tending to the injury of the health of the crew, and also of the efficiency of the ship, in violation of the usages of the service and his duty as the commanding officer.

Second, in this: That Captain Latimer has issued, from time to time, a great number of oppressive and annoying orders, entirely unusual in the service, to wit: “Order.—*No person shall come up the starboard side of this ship from a shore boat, unless an officer in uniform, without permission of the captain or commanding officer.*”

“No person will be allowed to come on board the ship, except persons on official visits, the visitors of officers, or persons having business with the officers, without permission of the commanding officer.”

“If males or females, of *respectable appearance*, wish to come on board, the officer of the deck will inform the commanding officer.”

“The officer of the deck will pass this order: Consuls coming alongside in shore-boats, and shore-boats having colors flying, shall be permitted to come on the starboard side, by the officer of the deck.”

“NAPLES, May 1, 1850.—U. S. frigate Cumberland.”

Third, in ordering, on the 25th June, 1850, that the fire in the — galley range shall be extinguished at two hours fifteen minutes p. m. daily; thereby compelling the ward-room mess to dine at two p. m., when it had been the custom, since the ship was put in commission, for that mess to dine at three p. m., putting the ward-room officers to great inconvenience and annoyance by said order; and, further, that Captain Latimer, in giving this order, and assigning that his motive for so doing was to economize fuel, has exhibited an entire absence of consideration for the comfort of those under his command, as it can be fully proved that, during the months of December, 1849, and January, February, March, and April, 1850, more wood was expended for the use of the cabin daily, than was used daily during the same period at the galley for the purpose of cooking for the whole ward-room mess, then consisting of no less than *fourteen officers* and their attendants.

Fourth, in this: That it has been the habit of Captain Latimer during the time he has commanded this ship, after having flogged men at the gang-way, to order that they shall receive additional punishment, by having their names placed on the “black list,” and compelling them to work the

foul-air pumps, polish the bright work, and perform other odious duties for many days, during the working hours of the ship, thereby dispiriting the men by an exhibition of a vindictive and relentless disposition towards offenders, and depriving them of all hope from their amendment and future good conduct.

Fifth, in this: That Captain Latimer, during the time he has commanded this ship, exhibited towards many of the crew the greatest personal animosity, and, losing sight of his duty as the commander of the ship, punished offenders against himself, personally, with great severity, and entirely overlooked or slightly punished very grave official offences.

Sixth, in this: That Captain Latimer did, on the night of 26th September, 1849, punish with a *colt*, some seventeen of the men (who had been hauling on the main brace,) taken indiscriminately from the watch aft; thereby making no distinction between offenders and others; and after having so unjustly punished them, inflicted another and severe punishment by causing them to be kept on deck, hauling on the main brace, until nearly two o'clock a. m., or two hours after their watch had expired; thereby depriving them, most cruelly and unnecessarily, of their rest, punishing them twice for the same offence, and causing the better portion of the crew to be dissatisfied with the service, from this indiscriminate exercise of punishment.

Seventh, in this: That Captain Latimer, during the time that he has commanded this ship, has been in the habit of using rude, uncourteous and overbearing language to the officers under him, and also using the most abusive and violent language to the quartermasters; and farther, that he has, from time to time, issued orders calculated for no other purpose than to oppress and annoy, to wit: "An order prohibiting friends of the officers from coming up the starboard side, except in a ship's boat, without his permission. An order compelling the ward-room mess to dine at two o'clock. An order prohibiting the officers from wearing overcoats and sou'-westers, or wet-weather clothing, except when *he* chose to consider it bad weather. An order for all officers to have a copy of his internal rules and regulations—a book containing fifty written pages of foolscap paper."

8th. *Conduct unbecoming an officer and a gentleman.*—First, in this: That Captain Latimer did, on the 18th day of June, 1850, while in the harbor of Trieste, deliberately and wantonly commit an assault and battery upon the person of James H. Travannan, 'an ordinary seaman, then belonging to this ship, by seizing hold of him, attempting to throw him down, choking him, and beating him in the face with his fist, although, at the time, the said Travannan was under the charge of a sentry, and in a gross state of intoxication, and that Captain Latimer was surrounded by officers and men, some of whom were called upon by him to confine the man in a legal manner.

Second, in this: That Captain Latimer did, on or about the 4th day of September, 1850, assault his cabin steward, "Antonio Lambias," by striking him in the face with his fist, at the same time abusing him by calling him a d——d son of a bitch, and other opprobrious names.

Third, in this: That Captain Latimer has, during the time he has commanded this ship, been in the habit of issuing his orders to the officers of the watch from his "quarter gallery," or *privy* windows; when it is noto-

rious that he has rebuked his officers for the most trivial breaches of etiquette towards himself; thereby shielding himself behind his official position, for the purpose of exacting from others that treatment which he is not willing to accord to them.

Fourth, in this: That Captain Latimer did, while this ship was lying at Trieste, insult the United States consul residing there, by neglecting or declining to treat with said consul in the matter of making arrangements for the visit of the Arch Duke John, of Austria, to the ship, when said consul had been requested by authority, from said Arch Duke, to make such arrangement; thereby degrading the legal representative of our country, in the opinion of the people to whom he was accredited.

Fifth, in this: That Captain Latimer did further insult said consul, while at Trieste, by running into a boat, which had been sent to said consul for the purpose of bringing ladies to visit the ship; and, further, showing by his haughty and overbearing manner towards said *consul and the ladies*, at the time of running his boat into theirs, that he had no respect for said consul, nor regard for his position.

In this: That Captain Latimer did, while in command of this ship, during the early part of August, 1859, cause her to be detained at the port of Alexandria, in Egypt, from the 7th to the 12th of the same month, although he had been officially informed that the Asiatic cholera was then prevalent there; and further, that Captain Latimer did, unnecessarily, expose the men and officers under his command, by ordering this ship to be watered from a reservoir on shore at Alexandria, although advised by the surgeon of this ship *not* to communicate with the shore, and although there was, on the day of the arrival of this ship at Alexandria, thirty-four thousand gallons in the hold, being nearly seventy days' water for the whole crew at full allowance; and although this ship had been partially watered only a few weeks previously, at Beyrout, men and officers were sent ashore; thus showing a total disregard for the opinion of the surgeon of this ship, in his official capacity, the health of the crew, and the efficiency and security of the vessel under his command.

I also have to report Captain Latimer for wasteful expenditure of government property for his own personal use, and also for having frequently had the mechanics of this ship employed for his own private purposes, to the great neglect of the efficiency and appearance of the ship, and when, by his own order, the first lieutenant was prohibited from expending *any thing whatever from the store-room for the ship's use*.

I am, sir, very respectfully,

Your obedient servant,

H. C. FLAGG,  
*Lieutenant U. S. Navy.*

To the Hon. SECRETARY OF THE NAVY,  
*Navy Department, Washington, D. C.*

## REPORT AND OPINION.

The court of inquiry convened by order of Commodore Charles W. Morgan, commander-in-chief of the United States naval forces in the Mediterranean, (and in accordance with the request of Captain William K. Latimer, of the United States navy, commanding the United States frigate Cumberland,) on the twentieth day of November, eighteen hundred and fifty, on board of the United States frigate Cumberland, lying in the bay of Naples, and subsequently removed, by order of said commander-in-chief, under date of March twenty-first, eighteen hundred and fifty-one, to the United States steam-frigate Mississippi, lying in the said bay of Naples, for the purpose of inquiring into all matters connected with a certain report, bearing date September twenty-second, eighteen hundred and fifty, addressed to the honorable Secretary of the Navy by Lieutenant Henry C. Flagg, of the United States navy, serving on board of the said frigate Cumberland, and containing sundry charges and specifications of charges against the said Captain William K. Latimer; further directed to inquire into the matters of complaint set forth in a certain despatch, addressed to the Department of State, under date of June twenty-second, eighteen hundred and fifty, by Henry D. Maxwell, esq., United States consul at Trieste; and additionally ordered, by the said commander-in-chief, under date of January twenty-ninth, eighteen hundred and fifty-one, to inquire into the complaints alleged against the said Captain William K. Latimer, referred to in a second despatch, addressed by the said Henry D. Maxwell, esq., United States consul at Trieste, to the honorable Secretary of State of the United States, under date of October twenty-third, eighteen hundred and fifty—in reference to all of which, they have been ordered to report “*all the evidence connected with the subjects directed to be inquired into, with their opinion thereon,*”—present, after a patient and careful inquiry into all of the subjects referred to, and a due consideration of the testimony and evidence obtained in relation thereto, the following

*Report and opinion.*

First, with reference to the report of Lieutenant Henry C. Flagg, that, under the first specification of the first charge, it appears in evidence that Captain Latimer has from time to time, between the 18th day of July, 1849, and the 22d day of September, 1850, punished a portion of the crew of the United States frigate Cumberland, under his command, with an instrument known as the colt, with which, within the said period, Joseph R. Watson (boy) has been punished eleven times, the whole number of lashes he has received amounting to as many as ninety; and John Hamilton, (captain of the main-top,) John Holland, (captain of mizen-top,) John Livingston, (captain of the fore-top,) and Joseph Wilson, (captain of the main-top,) each with twelve lashes; and that others, to the number of more than twenty in all, whose names are recorded on the log-book, and others, to as great a number, whose names are not recorded upon it, have also within the said period been punished with the colt. And further, that the use of the colt has been customary in the service for many years past, and that it has been usual to apply it over the clothing, and not, as the cats, upon the bare back; wherefore it has been regarded as a milder form of punishment for minor offences. In reference to which the court remark,

that by the act of Congress for the better government of the navy, approved April 23d, 1800, a discretionary power is given to a captain to punish certain offences, either by confinement or flogging, and that the only article in which the instrument of punishment is named directs that no punishment shall be inflicted "beyond twelve lashes with a cat-of-nine-tails," and that no "wired or other than a plain cat-of-nine-tails" shall be used, which the court conceive to be prohibitory merely with reference to the infliction of any punishment, or the use of any instrument *exceeding in severity* that designated; and inasmuch as the character of neither the punishment nor the instrument, in the instances referred to in the specification, has exceeded the limit defined in the said act of Congress, but, on the contrary, as both have been of a *milder* nature, it is the opinion of the court, confirmed by the fact that the punishment with the colt has been long sanctioned by the "usage of the service," that Captain Latimer (although, in the omission to log a considerable number of the punishments referred to, responsible for a disobedience of the order of the Navy Department on that subject) is not, for the use of the said instrument, chargeable with a violation of law.

That under the second specification of the first charge, it appears in evidence, that Captain Latimer has discharged from the United States frigate Cumberland, under his command, in the port of Messina, William Ried, (seaman,) John Scott, (ordinary seaman) and Thomas Childs, (seaman,) and at Trieste, James H. Travannan, (ordinary seaman,) as a punishment for offences.

Respecting which, the court remark, that they are satisfied, from documentary evidence before them, that the three men first mentioned, viz: William Ried, (seaman,) John Scott, (ordinary seaman) and Thomas Childs, (seaman,) were discharged by authority from the commander-in-chief; and further, that James H. Travannan, (ordinary seaman,) was discharged by Captain Latimer without such authority.

That from a careful consideration of the testimony, they are satisfied that James H. Travannan had committed offences, touching which it was practicable to reserve the case for reference to the commander-in-chief, and a trial by court-martial, and that his punishment, under the circumstances, by discharge, was unauthorized by the act of Congress for the better government of the navy.

That under the first specification of the second charge, it appears in evidence, that Captain Latimer directed Lieutenant G. G. Williamson to order the officer of the deck not to record an instance of punishment with the colt, which took place in the presence and by the order of Captain Latimer on the 13th day of August, 1849.

In relation to which the court are of opinion that Captain Latimer, in giving the said order, disobeyed the general order of the Navy Department of May 29th, 1840.

That under the second specification of the second charge, it appears in evidence, that Captain Latimer, between the 18th day of July, 1849, and the 15th day of August, 1850, has upon various occasions punished with the colt, in private, in the cabin of the United States frigate Cumberland, under his command, Joseph R. Watson, (boy) his servant, and in one instance twice in one day, when he received six lashes each time.



Whereby, in the opinion of the court, Captain Latimer has further disobeyed the general order of the Navy Department of May 29th, 1840.

That under the third specification of the second charge, it appears in evidence, that Captain Latimer has caused a number of alterations to be made in the United States frigate Cumberland, under his command, viz: removing the horse-blocks from the ship's side; altering the gaffs; removing the signal lockers from under the poop; removing the rail from the break of the poop; removing the boarding-pikes from around the masts, and making a new rack in the main hatch; altering and enlarging the cabin pantry; making a new bulkhead, and enclosing a gun; putting up a bulkhead on the berth decks for the forward officers; and many other alterations which are upon record.

In all of which it is the opinion of the court, that Captain Latimer has disobeyed the order of the Bureau of Construction, Equipment, and Repairs of the 29th August, 1843; although they are satisfied that many of the said alterations have tended to the improvement of the efficiency and appearance of the ship.

That under the first specification of the third charge, it appears in evidence that Captain Latimer, while the Cumberland was lying in the harbor of Messina, on or about the 25th day of January, 1850, after having flogged a number of men, caused the instrument of punishment known as the "cats" to be hung up publicly in its bag, at the mainmast, where it remained for twenty-four hours or more, during which period one foreigner, who visited the ship, became acquainted with the fact.

In reference to which the court remark, that although the "cats" were thus hung up at the mainmast, inasmuch as they were in their bag, invisible, and as but one foreigner became acquainted with the contents of the said bag, there is no evidence that our country and the navy were thereby brought into disrepute; which they do not view, however, as in any respect relieving Captain Latimer from the responsibility of a course in their opinion well calculated to produce such a result.

That under the second specification of the third charge, it appears in evidence, that the facts in relation to the difficulty which occurred between Captain Latimer and James H. Travannan, the language subsequently addressed to him by Captain Latimer at the gangway, and his ultimate discharge from the ship, are substantially these:

That James H. Travannan (ordinary seaman) returned on board of the United States frigate Cumberland, then lying in the port of Trieste, on the 18th day of June, 1850, from liberty, in a state of intoxication. That shortly after his return he was heard to say, on the forecabin, that "he'd go in the brig too." And further, that "he was going down to the cabin; that he intended to leave the ship." Also, thereafter, about the galley, that "he'd go aft, and he'd drag old Lat, te-tat, tat, the damned old son of a bitch, out of the cabin, and break his other leg." And that he thereupon went aft towards the cabin door, at which moment Captain Latimer came out of the cabin, ordered him in between the guns, and directed the orderly to take charge of him. That Travannan said to Captain Latimer, "he'd be God damned if he'd go;" whereupon the captain went up to him

and again ordered him between the guns. Travannan again making the same reply, that Captain Latimer then took hold of him to put him in between the guns, and attempted to trip him up, when Travannan, falling back against one of the guns, caught the captain by the collar or the arm; that Captain Latimer then choked him, Travannan falling down upon the deck; after which, the captain tried to get a cutlass out of the rack, but that the sheath came with it, the cutlass being in the sheath, and that the captain then let go of him, and stepped back near the ward-room skylight. That Captain Latimer then ordered Travannan to keep silence, and that Travannan replied, "I will keep silence, Mr. Latimore." Whereupon the captain again caught him by the throat, choked him, and struck him with his fist in the face. That Travannan made no resistance, but said, "Oh! don't hit me, Latimer—Oh! don't hit me, Mr. Latimer." That at this period, Lieutenant Chapinan asked Captain Latimer if he wished the man confined in irons, and Captain Latimer answered, "Yes." Immediately after which, Travannan was confined in irons, gagged, and left under charge of the orderly at the cabin door. That while Travannan was being so confined, he made use of language to this effect: that "he was born under the flag;" and he said, "to hell with the flag and Captain Latimer, and I am an Englishman." Which language was thereafter, by Captain Latimer's order, reported to him in writing by the corporal of the guard. And that the fact of his damning the flag and declaring himself an Englishman was also reported in writing, under the same date of June 18th, to Captain Latimer, by the executive officer, Lieutenant Smith.

That subsequently, Travannan was brought up to the gangway, with other men who were to be punished, on which occasion Captain Latimer addressed him in language to the effect, that he might thank his God that the cutlass had hung in the sheath, as he should, otherwise, certainly have run him through, as he was the first damned rascal that had ever laid hands upon him since he had been in the service. That Captain Latimer then cursed and abused him, and further expressed *regret*, not "that he was prevented from running him through the body by the scabbard adhering to the cutlass when he drew it from the rack," but rather using the term "*regret*" in connexion with such an expression as that he should have felt *regret* had he run him through.

That Travannan was not then punished with the other men, but remanded into confinement, Captain Latimer stating that he had not yet determined what to do with him. That he was not thereafter brought to a court-martial, or punished otherwise than by confinement, and that he was ultimately discharged while the ship was under way, leaving the port of Trieste, on the morning of the 22d day of June, 1850.

In reference to all of which, although the court cannot excuse Captain Latimer for his course in the occurrences between himself and James H. Travannan, they entertain, as to a certain extent palliative, the opinion that from the period at which Travannan first refused to obey the order to go in between the guns, Captain Latimer acted under the influence of very great excitement, then produced by Travannan's insubordinate conduct and language, and naturally continued and increased by the progress of the circumstances; and further, that the discharge of Travannan, on the 22d day of June, was the result of the said previous occurrences on the 18th.

As Captain Latimer, however, in reporting this discharge under date of

September 7th, 1850, to the commander-in-chief, stated that he had discharged Travannan because he had declared himself an Englishman, and abused the flag of the United States, the court further remark:

That inasmuch as, at the time of uttering the language referred to, the said Travannan was in a state of intoxication; as it does not appear that Captain Latimer ever before, or at any time thereafter, previous to the period of his discharge, received any other report that he had used such language; and as his name appears on the "description list" furnished from the naval rendezvous in New York, as an American citizen and a native of that place, there appears to be no foundation for the assumption that James H. Travannan was not a citizen of the United States; wherefore, had Captain Latimer possessed any authority for discharging him upon such a ground, the evidence in the case does not establish the fact of its existence.

That under the third specification of the third charge it appears in evidence, that Captain Latimer has exhibited an unwillingness to promote foreigners to petty offices; but that many foreigners have nevertheless been promoted. That he has discharged men who had previously declared themselves, when in a state of intoxication, to be Englishmen. That a hostile spirit has existed to a slight extent on board of the ship under his command, between Americans and foreigners, and that men have said they would declare themselves to be Englishmen, when next on liberty, for the purpose of getting out of the ship.

The court are of opinion, however, that as many foreigners have been promoted to petty offices by Captain Latimer, the unwillingness which he has exhibited has merely resulted from a *preference* for Americans of equal qualifications, the exercise of which, confined within a reasonable limit, cannot be considered exceptionable. That the spirit of hostility referred to, as having existed, to a slight extent, on board of the Cumberland, cannot be considered as traceable to the said preferences of Captain Latimer; and further, and that although men, in a very limited number of instances, (but two being upon record) have been discharged, who had previously declared themselves, when in a state of intoxication, to be Englishmen, and others have subsequently been heard to say that they would, when next on liberty, pursue a similar course, for the purpose of getting out of the ship, inasmuch as the men referred to were of general bad character, and had committed various offences, it cannot be inferred (admitting that those remarks may have been the result of the previous discharges) that any inducement to such declaration was thereby held out. Nor do the court perceive that either the said preferences or discharges can have, in any respect, impaired the discipline and efficiency of the ship.

That under the fourth specification of the third charge, it appears in evidence:

*First*, in relation to the charge of "wilful falsehood," that Captain Latimer, while the United States frigate Cumberland, under his command, was lying in the harbor of Trieste, gave the following order to the first lieutenant, to wit: "When we go to sea again, the ward-room officers must dine at two o'clock," or words to that effect; and also, that he reiterated the said order at sea, on the 24th day of June, 1850, at which date he issued a written order, directing that "the fire in that part of the galley in which the cooking is done for the officers, must be extinguished at a quarter past two o'clock, p. m." That on June 25th, the caterer of the ward-room

mess addressed a letter to Captain Latimer, stating that the foregoing order had been received from the first lieutenant; that the change in the hour at which the officers had before dined, was extremely inconvenient; that they were satisfied there could be no economy of fuel from the enforcement of the order, and requesting to be allowed the use of fires as before; that on the same day, Captain Latimer addressed a communication to the caterer of the mess, acknowledging the receipt of the said letter, and stating that the order referred to was given with a view to a more economical expenditure of the fuel on board, and that he regretted to differ in opinion with the caterer and mess as to the economy which would result from an observance of the order; that on June 27th, Surgeon Barrington and Lieutenant Steedman, on behalf of the mess, called upon Captain Latimer, for the purpose of inducing him to permit them to dine again at their usual hour, upon which occasion he denied having given the order to dine at two o'clock, and, referring to his written order of June 24, stated to them that he had given no order to change the ward-room dinner hour; that after Surgeon Barrington and Lieutenant Steedman had left the cabin, Captain Latimer sent for Surgeon Barrington, and inquired more particularly the object of Lieutenant Steedman and himself in calling, and again said that he had not given such an order; and finally, that some hours thereafter he again sent for Surgeon Barrington, and stated that since he had left him, he had conversed with Lieutenant Smith upon the subject, who had called to his mind some circumstances which induced him to believe that he had given the order; and added, that he had sent for Surgeon Barrington to make that statement, that he might not be suspected of prevarication. And,

*Secondly*, in relation to the general charge, of the non-fulfilment of statements and assurances made in relation to affairs immediately concerning the comforts and interests of the officers:

That Captain Latimer has, from time to time, made statements and assurances to officers on board of the United States frigate Cumberland, under his command, in relation to affairs immediately concerning their comforts and interests; and that he has subsequently failed to fulfil them, which has with some impaired, and with others destroyed, their confidence in his veracity. That these statements and assurances appear to have been—first, with reference to visiting certain ports, viz: Madeira, Cadiz, Malaga, Marseilles, Leghorn, and Corfu; second, in relation to returning to certain ports, viz: Trieste and Ancona; and, third, respecting an allowance of time promised to the officers for having their clothing washed, upon the expiration of the quarantine at Gibraltar. In addition to which it may be remarked, that it also appears in evidence that Captain Latimer stated to First Lieutenant Smith that all orders should be passed through him, which he testified had not been done altogether; that he had also given orders to him, which he subsequently denied having given; and that he had made statements to Boatswain Munro, one in relation to shipping a man as an ordinary seaman, which he thereafter denied having made; and another a few days before the discharge of James H. Travannan, that he should discharge no more men; but as these cannot legitimately be considered as partaking of the *personal* character set forth in the specification, the court decline their consideration.

Additionally—that it also appears in evidence, that Captain Latimer solicited and received from the honorable Secretary of the Navy, before leaving the United States, *permission* to touch at Madeira; and that about

twelve days after the departure of the Cumberland from Alexandria, he informed the master that he should have to give up the idea of going back to Trieste, assigning as the reasons for such conclusions, "the lateness of the season, and adverse winds, and being short in some articles of provisions." That about the same time he informed the purser of this change of purpose; that the winds had been, and continued at that period to be, *adverse*, and that the ship was then distant from the entrance to the Adriatic more than three hundred miles.

In view of all of which, the court are of opinion—first, that Captain Latimer did give an order changing the ward-room dinner hour, and that he subsequently denied that he had given such an order; but inasmuch as some days elapsed between the date at which the order was given and the denial, as the attention of Captain Latimer during the conversation with Surgeon Barrington and Lieutenant Steedman, in making the said denial, *may* have been directed only to the written order, (which had been the subject of correspondence between himself and the ward-room mess,) respecting the putting out of the fire, and the economy of fuel, and which but changed the dinner hour *in effect*; and as he thereafter stated that a subsequent conversation with Lieutenant Smith induced him to believe that he had given the order, the court are unwilling, whatever other imputation, may attach to the character of Captain Latimer, in the matter, to admit that he was thereupon chargeable with "wilful falsehood." And,

*Secondly*, the court are further of opinion, that inasmuch as the captain of a ship-of-war cannot be considered responsible to the officers under his command, for the fulfilment of intentions expressed with reference to his visit, or return to, or his stay at certain ports, particularly when not commanding singly, and cannot be expected to explain to them circumstances which *may* operate to change his purposes, whatever the *facts* may be, with which they cannot become acquainted, such changes of purpose, however they may tend to impair, cannot be considered as furnishing good reason for the destruction of "all confidence in his veracity."

That under the first specification of the fourth charge, it appears in evidence, that Captain Latimer did not cause the crew of the United States frigate Cumberland, under his command, to be exercised at the great guns, at firing at a target, until the 24th day of June, 1850; and that the crew of said ship were not drilled at loading and firing the muskets or carbines, with either ball or blank cartridge, up to the 22d day of September, 1850, previous to which there was time and opportunity for so doing. That the men were regularly exercised, however, in the use of both the great guns and small-arms, *without powder*; and that when the target firing with the great guns did take place, the whole amount of powder and shot allowed by the regulation of the department for one year was expended.

Wherefore, it is the opinion of the court, that although Captain Latimer should have directed some practice at firing the small-arms, his course with reference to the target firing with the great guns was not exceptionable, inasmuch as the expenditure at one time of the whole yearly allowance of ammunition was calculated to be more beneficial than an occasional practice, which would necessarily be, in each instance, to a very limited extent.

That under the second specification of the fourth charge, it appears in evidence, that Captain Latimer has permitted the fall of the life-buoys of the United States frigate Cumberland, under his command, to be obstructed

by the cabin ports, after the existence of the said obstruction had been reported to him, from time to time, by the first lieutenant; and further, that the said life-buoys have never, by order of Captain Latimer, been let go.

The court, however, have, by experiment, satisfied themselves that the obstruction referred to was but partial, and that the life-buoys would ultimately fall into the water. But as the fact that their fall was at least so far obstructed was apparent, and was from time to time reported to Captain Latimer, and as it also appears in evidence that the extent of this obstruction was never examined into, by letting the buoys go, the court are of opinion that Captain Latimer was not excusable for permitting the position of the cabin ports to continue.

That under the third specification of the fourth charge, it appears in evidence, that at or about the period at which the United States frigate Cumberland left the bay of Naples for the Adriatic, (which, upon reference to the log-book, the court have ascertained was May 20, 1850,) the ratlines of the ship were worn out and unsafe for the men, and that they were reported by the first lieutenant to Captain Latimer; that they were thereafter, a second time reported, when Captain Latimer directed that some of them should be replaced. That subsequently, one man was seriously, and two or three slightly injured, by the breaking of the ratlines, and that the first lieutenant then made a third report to the captain, and informed him that they were "dangerous;" whereupon Captain Latimer directed that those which were defective should be replaced; and further, that after the 24th of May, and before the 1st of June, 1850, there was an expenditure of two hundred and ten fathoms of ratline stuff.

Respecting which, the court are of opinion, that as, upon the second report of the condition of the ratlines, by the first lieutenant, Captain Latimer directed him to replace some of them; and as, upon the third report, and the report of the injury of the men, he directed that those which were defective should be replaced, it does not appear that Captain Latimer permitted the ratlines to remain in wear after they had been "frequently reported to him as unfit for use, and dangerous to the crew."

That under the first specification of the fifth charge, it appears in evidence, that on the passage of the United States frigate Cumberland from New York to Gibraltar, Captain Latimer caused to be drawn from the gun-deck beams of the ship a large number, which has been stated to be between two hundred and two hundred and fifty hammock-hooks; (berthing from one hundred to one hundred and twenty-five men.) That so many of the crew were thereby required to sleep upon the berth or lower deck, as to crowd them very uncomfortably. That in the opinion of the surgeon, the health of the ship was thereby affected, of which opinion he made a report to Captain Latimer. That thereafter, a few days before the arrival of the ship in the bay of Naples, a portion of the said hooks were replaced, but that the men were still very much crowded upon the berth deck, which fact was also reported by the surgeon to Captain Latimer; and that thereafter, a portion of the said hooks were replaced upon the gun deck from time to time. It does not appear, however, that the hooks upon the berth deck were ever placed nearer together than is usual in other ships, or that the health of the ship was at any time *seriously* endangered; but nevertheless, the court are unable to find any reasonable cause for such a disposition of the berths, or to reconcile it with that care for the health and comfort of the crew which was, in their opinion, incumbent upon the commanding officer.

That under the second specification of the fifth charge it appears in evidence, that Captain Latimer has issued the following orders, to wit: "Order: No person shall come up the starboard side of this ship, from a shore boat, unless an officer in uniform, without permission of the captain or commanding officer." "No person will be allowed to come on board the ship except persons on official visits, the visitors of officers, or persons having business with the officers, without permission of the commanding officer." "If males, or females, of respectable appearance, wish to come on board, the officer of the deck will inform the commanding officer." "The officer of the deck will pass this order: Consuls coming alongside in shore boats, and shore boats having colors flying, shall be permitted to come on the starboard side, by the officer of the deck.—Naples, May 1, 1850, United States frigate Cumberland;"—and that the first of the said orders was considered oppressive and annoying.

In relation to which it is the opinion of the court, that although the first order specified was of an unusual character, and may have been in its results annoying, it could not with propriety be pronounced "oppressive;" and further, that there appears to be no evidence that "Captain Latimer has issued, from time to time, a *great number* of oppressive and annoying orders entirely unusual in the service."

That under the third specification of the fifth charge, it appears in evidence, that Captain Latimer ordered, under date of June 24, 1850, that "the fire in that part of the galley in which the cooking is done for the officers must be extinguished at quarter past two o'clock p. m.;" that the ward-room mess were thereupon required to dine at two o'clock p. m., when it had been the custom, since the ship was put in commission, for that mess to dine at three o'clock p. m.; that they dined at two o'clock p. m. for two days, and considered that the said order put them to great inconvenience and annoyance, and that Captain Latimer assigned that his motive for giving the order was to economize fuel; and further, that it also appears in evidence, that during the months of January and February, 1850, more wood was expended for the use of the cabin daily, than was used daily, during the same period, at the galley, for the purpose of cooking for the ward-room mess, then consisting of fourteen officers and their attendants; and that at the time first specified, (June 24, 1850,) there was a supply of fuel on board of the ship sufficient for an expenditure of four months, which fact was then reported to Captain Latimer. Wherefore, the court are unable to perceive that any necessity existed, under the circumstances, for the exercise of an economy which tended to conflict with the comforts of a large number of the officers.

That under the fourth specification of the fifth charge, it appears in evidence, that Captain Latimer has, during the time he has commanded the United States frigate Cumberland, after having had men flogged at the gangway, ordered that they should receive additional punishment, by having their names placed upon the "black list," and by requiring them to work the foul-air pumps, polish the bright work, and perform other duties during the working hours of the ship, and that men have been thereby dispirited. Respecting which, the court remark, that although it is a custom of the service to make use of the "black list," as a mild means of correction, and one generally approved, they cannot but regard its application for the purpose of inflicting *additional* punishment as an abuse of the practice, and

naturally productive of such results as those to which some of the witnesses have testified.

That under the fifth specification of the fifth charge, it appears in evidence, that Captain Latimer, during the time he has commanded the United States frigate *Cumberland*, has exhibited personal animosity towards some of the crew, and that he has punished men severely for offences against himself, and slightly for grave official offences.

From a careful consideration, however, of the instances upon which this testimony has been based, the court are satisfied that the exhibition of such animosity has been comparatively rare, and that the offences which are represented to have been committed against himself cannot be considered a strictly *personal*; but that, on the other hand, grave official offences have been committed, the punishment for which was comparatively slight.

That under the sixth specification of the fifth charge, it appears in evidence, that Captain Latimer did, on the night of the 26th of September, 1849, punish with the colt as many as seventeen of the men who had been hauling on the main brace; and after having so punished them, inflicted another punishment, by causing them to be kept on deck hauling on the main brace until about half an hour after twelve o'clock, (midnight.) or about half an hour after watch had expired.

It is not apparent, therefore, that the additional punishment referred to was protracted to the extent alleged in the specification, nor that the men were taken indiscriminately from the watch aft, neither that there was any such result as the dissatisfaction of the better portion of the crew with the service. But the court are nevertheless of the opinion that the said punishment evinced a severity, for the exercise of which there appears to have been, in the circumstances, no just cause.

That under the seventh specification of the fifth charge it appears in evidence, that Captain Latimer, during the time he has commanded the United States frigate *Cumberland*, has from time to time used rude, uncourteous, and overbearing language to the officers under him, and also abusive and violent language to the quartermasters; that he has from time to time issued the following orders, to wit: "An order in effect prohibiting friends of the officers from coming up the starboard side, except from a ship's boat, without his permission;" "an order requiring the ward-room mess to dine at two o'clock; an order prohibiting the officers from wearing overcoats, and sou'-westers, or wet-weather clothing, except in bad weather; and an order for all officers to have a copy of his internal rules and regulations;" and that the first of the said orders was considered by the officers oppressive and annoying, and the second as putting them to great inconvenience and annoyance.

In reference to which the court are of opinion—first, after a careful consideration of the several instances in which the language of Captain Latimer is stated to have been rude, uncourteous and overbearing to the officers, and abusive and violent to the quartermasters, that to the officers it was not so much the language itself, as the *manner* which accompanied it, that was thus offensive, and that to the quartermasters it was uttered in the course of reproof and reprimand, which the court are disposed to view as circumstances in a certain degree extenuative; and secondly, as it does not appear that the first order was issued with any special reference to the



friends of the officers, or that it had such reference save in its effect: that the second order was continued in force for more than a day or two after the remonstrance of the ward-room mess, or that there was any prohibition in relation to the use of wet-weather clothing, *in bad weather*, the court are of opinion that none of the orders specified (in relation to but two of which any exception seems to have been taken by the officers,) were of a character which could define them to be "calculated for no other purposes than to oppress and annoy."

For the evidence under the first specification of the sixth charge, the court refer to their report in reference to the second specification of charge third; that under the second specification of the sixth charge, it appears in evidence, that Captain Latimer did, on or about the 4th day of September, 1850, abuse his cabin steward, Antonio Lambias, by damning him, and calling him a son of a bitch, and that he at the same time struck him in the face with his fist: touching which, the court are unable to find any circumstances in extenuation.

That under the third specification of the sixth charge it appears in evidence, that Captain Latimer, during the time he has commanded the United States frigate Cumberland, has from time to time issued his orders to the officers of the watch from his quarter gallery windows, and that he has been very particular that no etiquette should be overlooked in official intercourse with himself.

It does not appear, however, that Captain Latimer has "rebuked his officers for the most trivial breaches of etiquette," and it is the opinion of the court that no exception can with propriety be taken in reference to the particular part of the ship from which a commanding officer may, from time to time, find it convenient to issue his orders.

That under the fourth specification of the sixth charge, it appears in evidence, that Captain Latimer did decline to treat with the United States consul residing at the port of Trieste, in the matter of making arrangements for the visit of the Arch Duke John of Austria to the frigate Cumberland, although informed by the said consul that he had received notice by authority from the said Arch Duke, of his wish to make the visit.

Respecting which, it is the opinion of the court, although it does not appear that the said consul was thereby degraded in the opinion of the people to whom he was accredited, that Captain Latimer failed to extend to him that courtesy which, under the circumstances, it was the privilege of the consul to claim, and his duty to accord.

That under the fifth specification of the sixth charge, it appears in evidence, that while the United States frigate Cumberland was lying in the harbor of Trieste, a slight collision took place between the gig of Captain Latimer and a boat which had been sent to the shore to bring off the United States consul residing there, and some ladies, to visit the ship. The court are of opinion, however, that the said collision was accidental, and that there is no evidence that Captain Latimer did thereby insult the said consul, or that his manner upon the occasion was either haughty or overbearing.

That under the additional specification, relating to the visit of the United States frigate Cumberland to Alexandria, Egypt; it appears in evidence, that Captain Latimer did, while in command of the United States frigate Cumberland, during the early part of August, 1850, remain with her at the port of Alexandria, in Egypt, from the seventh to the twelfth

of that month. That he had been officially informed, on his arrival there, that the cholera was prevalent at Alexandria, and was advised by the surgeon not to communicate with the shore. That the ship was watered by his order from a reservoir at the quarantine ground. That while there, one man of the watering party died of cholera. That there was, on the arrival of the ship at Alexandria, nearly thirty-four thousand gallons of water on board, and that she had been partially watered, a few weeks previously, at Beyrout.

Further, that the kedging or warping of the Cumberland out of the said port of Alexandria would have been "attended with a good deal of difficulty and some danger," and that the ship was taken out on the twelfth day of August by a steamer; and additionally, from documentary evidence, that the said date was the earliest period at which it was practicable to obtain such aid for facilitating her departure.

The court are therefore of opinion, that Captain Latimer is excusable for remaining at the port of Alexandria from the seventh to the twelfth of August; but, inasmuch as it appears that a large quantity of water was on board of the ship at the period of her arrival there, and as it was practicable to fill the tanks at sea with salt water, if deemed indispensable, (a practice not unusual in the service in long passages,) the court, although willing to believe it an error of judgment, cannot consider Captain Latimer excusable in neglecting the advice of the surgeon upon a subject so directly connected with the health of the ship under his command; and

That under the concluding paragraph of the report of Lieutenant Flagg, although it appears in the testimony of some of the witnesses that Captain Latimer has, to a very limited extent, expended Government property for his personal use, and frequently had the mechanics of the ship employed for his private purposes, and that the ship has thereby suffered in appearance, the court, from a careful examination into the particulars of these statements, are satisfied that both the expenditures and employment referred to have been appropriated to matters belonging to the ship, and that there has been no result affecting injuriously her appearance; and, further,

That although the First Lieutenant has testified that he was prohibited by Captain Latimer from expending articles from the store-room after the departure of the Cumberland from Messina, they are nevertheless of the opinion that such prohibition was clearly within the discretion of the commanding officer.

Before passing from the consideration of this report, however, the court would not feel that they had discharged their whole duty, were they to omit to notice a certain acrimony which pervades the entire document, by no means harmonizing with the expression of regret recorded at the commencement, in view of the necessity of its preparation; and, in the exercise of which, the writer has indulged in much severity of style, and so closely interwoven his own inferences with the various allegations, that in many cases it is extremely difficult to separate the one from the other.

They remark, further, a deficiency of candor in several points, apparent in the statement made in the first specification of the first charge, that "Captain Latimer has, from time to time, between the 18th of July, 1849, and the 22d day of September, 1850, been in the habit of illegally punishing a portion of the crew of this ship with an instrument known as the *coll*, in violation of law, viz: James R. Watson (boy) with ninety lashes, John Hamilton (captain of the maintop) twelve lashes," &c. The first impres-

sion made by which, (from the construction of the sentence) would naturally be, that James R. Watson (boy) had received *one punishment of ninety lashes*.

In the first specification of the third charge, where it is stated that "Captain Latimer, while lying in the harbor of Messina, on or about the 25th day of January, 1850, after having flogged a number of men, caused the *cats*, or instrument of punishment, to be hung up publicly at the *mainmast*," &c., while the facts that the instrument of punishment referred to was in a bag, and invisible, are omitted;

And also, in the seventh specification of the fifth charge, where one of the orders issued by Captain Latimer is stated to have been "an order prohibiting the officers from wearing overcoats and sou'-westers, or wet-weather clothing, except when *he* chose to consider it bad weather," which appears, from the testimony of the officers, to have been merely an order prohibiting the use of wet-weather clothing when the weather was not bad;

The court further observe, that a majority of the gravest allegations contained in the report are in relation to matters which occurred prior to the arrival of the Cumberland in the bay of Naples, in the spring of 1850, at which period she remained in the presence of the flag-ship for about two months; and as they were of so public a character that all must have been perfectly familiar with the facts in relation to them, it would seem that a conviction of duty might *then* have made them subjects of representation to the commander-in-chief, particularly as at that period the order of Captain Latimer in relation to "shore-boats," which was felt to be personally oppressive and annoying to the officers, was referred to Commodore Morgan in a complaint, to which one of the signatures was that of the author of this report.

That all of these offences, beginning at a date but a short time subsequent to that at which the Cumberland left New York, and extending through a period of nine months, before she left the bay of Naples for the Adriatic, should have remained unnoticed, and yet unforgotten, until the catalogue was increased by the occurrences of the last cruise, cannot, it is true, affect the responsibility of Captain Latimer; but is, nevertheless, very intimately connected with that of his accuser.

With reference to the complaints alleged against Captain Latimer in the two despatches addressed by Consul Maxwell to the honorable Secretary of State of the United States, the court proceed to report:

*First*, that most of the statements contained in the copy of the affidavit made by James H. Travannan are established by the testimony of the officers given in relation to the second specification of the third charge of Lieutenant Flagg's report, to which, with their opinion thereon, to avoid repetition, they would here refer;

With the additional remarks, that it also appeared in evidence that the sum of sixty-three dollars (being the amount due the said James H. Travannan at the time of his discharge) was paid to him at the time that he was put ashore; and further, that there is no evidence either that the United States consul at Trieste was consulted by Captain Latimer with reference to the discharge of Travannan, or that any funds were placed in the hands of the consul for his benefit.

*Second*, that in relation to the various complaints of the consul touching the general course and conduct of Captain Latimer, it appears—

That every official courtesy which could be reasonably expected from

him, was extended to the authorities at Trieste; that upon the arrival of the frigate Cumberland at that port, the Austrian flag and the flag of the Austrian admiral were both saluted, and that the governor and the admiral visited the ship, and were received with the salutes and attentions to which they were respectively entitled:

That the United States consul also visited the ship, and was received with the usual consular salute:

That there is no evidence of any want of civility on the part of Captain Latimer, in his general intercourse with the consul, or that he had been in the habit of treating other consuls of the United States, or strangers, or persons in official positions, with discourtesy, or that there was anything peculiar or extraordinary in his general conduct, calculated to prevent the good impressions and effects which it was desirable should result from the visit of the frigate Cumberland.

*Third*, that, in relation to the matters of complaint concerning the contemplated visit of his Imperial Highness, the Arch Duke John of Austria, to the United States frigate Cumberland, it appears from Captain Latimer's admission:

That he received notice, through our consul at Trieste, "that the Arch Duke John was desirous of visiting the Cumberland:"

"That such notice had been communicated to the consul by Count Karoli," and that "he, Captain Latimer, did state to the consul that he wished that Count Karoli would address him in writing, on the subject, and he would reply to it;" and further, from documentary and other evidence,

That on Monday, June 17, 1850, Count Karoli addressed a communication to Captain Latimer, stating that he had been commanded by his Imperial Highness, the Arch Duke John of Austria, to acquaint Captain Latimer that the Arch Duke wished to visit his frigate, and begging that Captain Latimer would have the kindness to let him know when it would be most convenient to him to receive his Imperial Highness on board:

That Captain Latimer, under the same date, (Monday, June 17th,) in reply, expressed his regret that he was not informed earlier of the wish of his Imperial Highness, and stated that he would sail on Thursday morning, (June 20,) and would receive his Highness on board of the Cumberland on Wednesday, (June 19th,) at 12 o'clock, noon:

That preparations were accordingly made on board of the ship, for the said reception:

That under date of Tuesday, June 18th, Count Karoli addressed a second communication to Captain Latimer, stating that his Imperial Highness, the Arch Duke John, would visit the Cumberland with great pleasure, but, being unable to come on board at the hour named, had commanded him to request Captain Latimer to postpone receiving him until one o'clock, or to fix upon any hour after one that would be most convenient to him:

That under date of Wednesday, June 19th, (the day appointed for the visit,) Captain Latimer wrote to Count Karoli, in reply, stating that it would be equally convenient to him to receive his Imperial Highness, the Arch Duke John, at one o'clock; and further, expressing his regret that the state of the weather was so unfavorable, and a hope that it would moderate, so as not to interfere with the visit:

That under the same date, (Wednesday, June 19th,) Count Karoli wrote to Captain Latimer, informing him that if the weather should moderate,

his Imperial Highness, the Arch Duke John, would most certainly visit the frigate; that in case the weather should not admit of his visit taking place that day, he would not fail to take the Arch Duke's orders for making the visit on (Thursday, June 20th) the day following, and expressing the hope that Captain Latimer would not put to sea as soon as he intended:

That under date of Friday, June 21st, at three o'clock p. m., Captain Latimer addressed another communication to Count Karoli, expressing regret that he had not the pleasure of seeing his Imperial Highness, the Arch Duke John, on board of the Cumberland on *that* day, at one o'clock, and stating that he was compelled, from the extent of his cruising instructions, to leave on the following morning, (Saturday, June 22d,) having already been detained several days beyond the time appointed for his departure, by bad weather, and which he apprehended would prevent the visit of his Highness on that day, but that he contemplated returning to Trieste in the Cumberland, when it would afford him great pleasure to receive his Highness, the Arch Duke John, on board: and,

That, under the same date, (Friday, June 21st,) Count Karoli wrote to Captain Latimer in reply, that he had just left his Imperial Highness, the Arch Duke John, who had ordered him to express his regrets that the bad state of the weather had prevented him from visiting the Cumberland; but that he wished Captain Latimer to be informed, that if the weather should be more favorable, he would feel great pleasure in visiting her at ten o'clock on (Saturday, June 22d) the day following. To which Count Karoli added, that as Captain Latimer intended sailing early the next morning, the Arch Duke would not be able to make the visit for the present; but that he thought himself allowed to say, that his Imperial Highness would do so with very great pleasure upon the return of the frigate to Trieste:

That on Wednesday, June 19th, (the day appointed for the visit) it was blowing fresh gales from the eastward, with occasional rain; that on Thursday, June 20th, the weather was of a similar character; that on Friday, June 21st, the weather was variable and unsettled; and that on Saturday, June 22d, the Cumberland sailed at daylight.

There is no evidence, however, that Captain Latimer made any public statement upon his arrival at Trieste, as to the time at which he expected to leave. But the court find the *special instructions* which were given by the commander-in-chief to Captain Latimer, under date of May 17, 1850, with reference to his cruise in the Adriatic, to contain the following order:

"Upon the fulfilment of the object of your cruise in the Adriatic, should the tranquillity of the countries bordering thereon continue undisturbed, you will sail about the last of June, or the first of July, for Beyrout, and Jappa, in Syria, and as far south as Alexandria, in Egypt."

It is therefore apparent, that the necessity for the departure of the Cumberland on the 22d day of June, alleged by Captain Latimer in his note to Count Karoli, under date of the 21st, *did not exist*; and it is the opinion of the court, that the said departure of the ship evinced, under the circumstances, a want of courtesy with reference to his Imperial Highness, the Arch Duke John of Austria, for which there was no excuse. And, further, (as the court have already stated, in their opinion under the fourth specification of the sixth charge of the report of Lieutenant Flagg,) that Captain Latimer, in declining to receive the request of the Arch Duke,

through the United States consul at Trieste, failed in courtesy, likewise, to the said consul; and that he cannot be considered therefor the less culpable, because, in the opinion of the consul, his position and influence were not thereby affected. And,

*Fourth*, that respecting the complaint in relation to the departure of the frigate Cumberland from Ancona, it appears in evidence, that Captain Latimer arrived at that port on the second day of June, eighteen hundred and fifty, at about ten o'clock a. m., and sailed at four o'clock a. m. on the following day: that the vessel lay in an open roadstead, and that the weather, which upon her arrival was pleasant, changed during the night. It further appears in evidence, in relation to this matter, that a few stores had been purchased for the ward-room mess, which did not reach the ship; and that some loss was consequently incurred by the contractor, which was subsequently reimbursed. The court are of opinion, however, that the character of the weather rendered it prudent for Captain Latimer to put to sea; and as it appears that the Roman flag was saluted upon his arrival, and there is no evidence that he then made any statement as to the length of his stay, or that he received any official notice from the governor of a desire to visit the vessel, that there was nothing exceptionable in the matter of Captain Latimer's departure from Ancona.

All of which is respectfully submitted.

W. JAMESSON,

*Captain, and President of the Court.*

Attest:

FRANCIS DE HAES JANVIER,  
*Judge Advocate.*

APRIL 7, 1851.

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#### GENERAL ORDER.

NAVY DEPARTMENT,

*July 1, 1851.*

The head of the department has examined the record and report of the court of inquiry held by order of Commodore Charles W. Morgan, commanding the United States squadron in the Mediterranean, on certain charges and specifications of charges preferred against Captain William K. Latimer, commanding the frigate Cumberland, of the said squadron, by Lieutenant Henry C. Flagg, of the same ship; and also on certain allegations contained in two official despatches addressed to the Department of State, by Henry D. Maxwell esq., consul of the United States at the port of Trieste, touching the official conduct of Captain Latimer, in certain particulars therein mentioned; together with the report and opinion of said court, on the aforesaid several charges, specifications and allegations; and concurs generally in the inferences and opinions expressed by the said court, except in the following particulars, and with the following remarks, namely:

On charge I, specification 2.

The department agrees with the court, that the discharge of the seaman Travannan was against law; but under the circumstances of the case, the alternatives being between a summary discharge and the confinement of a

drunken insubordinate man during the ship's cruise, until she should rejoin the squadron, when only he could be brought to trial before a court-martial for an offence which must have brought upon him exemplary punishment—he being paid, before his discharge, all his wages then due—the course pursued was not oppressive to him, and is regarded as pardonable.

Charge III, specification 2.

Nor does the department, in any view of the conduct of Captain Latimer, as presented by the evidence, on the occasion of the altercation with Travannan, deem it of a nature to be visited with punishment. A seaman, drunk or sober, who goes to the quarters of the first officer of the ship, without provocation, uttering curses and threats of personal violence against that officer, and, in further defiance of authority, refuses to go away when ordered, places himself in such a state of insubordination, that the efforts of the officer to rid himself of the nuisance, or to assert his rightful authority, will not be nicely measured, with a view to censure; but he will, in such case, be held amenable only for excess of force, on his part savoring of revenge and cruelty.

Charge IV, specification 3.

The conduct of Captain Latimer respecting the ratlines did not amount to gross and culpable negligence, in the exercise of discretionary authority, for which only he is liable to punishment.

Charge V, specification 1.

The arrangement of the hammock-hooks on the berth and gun-decks, was within his discretionary authority; and so long as they were not placed closer together than usual, and did not affect the health of the crew, he was the proper judge of the number to be placed on each deck; he being responsible, on the one hand, for the preparedness of the guns for action in any emergency, as well as for proper arrangements for the health and comfort of the crew on the other.

Specification 3. The time of dining, whether an hour sooner or later, he had a right to regulate, and the complaint on this point is not of sufficient importance to occupy the attention of a court of any kind.

Specifications 4 and 6. After punishing to the full extent of the law, in one form, it is not lawful to punish the same offence in another. But partial punishment in two forms is allowable, and it is only in the instances where this rule was violated that the conduct embraced in these charges was criminal.

Specification 7. The order herein complained of was not only lawful, but in the opinion of the department judicious, if the commanding officer had a proper pride for the order and appearance of his ship. The complainant seems to have mistaken indulgence in this particular for a right.

Charge VI, specification 4.

The department does not concur in the opinion of the court that Captain Latimer was guilty of disrespect to the consul at Trieste, or to the Arch Duke John of Austria. After salutes had been exchanged between the ship and the military posts on shore, and relations of intercourse had been established between the military officers of the two countries, it was no longer necessary that the consul should intervene, as the bearer of the wishes of the Arch Duke John, who was a high military officer, to visit the frigate Cumberland. Although such messages may be, and often are transmitted through the consul at the port where the request is made, even

after the preliminaries above stated, it is perhaps more proper, where it can be conveniently done, that such a communication from a military officer of high rank should be transmitted, through one of his subordinates, directly to the commander of the vessel. It was, therefore, no discourtesy to the consul, on the part of Captain Latimer, to say to him, when he made the application, that he preferred that the Count Karoli, the military officer who had made known the Arch Duke's desire to the consul, should address him (Captain Latimer) on the subject. That neither the Count nor the Arch Duke esteemed this course objectionable, there is the most irrefragable evidence in the fact that the Count forthwith opened a correspondence with Captain Latimer, which was conducted in the politest manner on both sides; by means of which three several occasions were appointed for the visit of the Arch Duke to the ship, on all of which he was frustrated by the unfavorable state of the weather. And although a fourth day was proposed in a note from the Count, which Captain Latimer excused himself from assenting to, on the ground that it was necessary that he should proceed on his cruise, the whole affair terminated in mutual expressions of respect and kindness, and of an expectation that the Cumberland would, at no distant day, revisit Trieste, and be favored with a visit from his Imperial Highness the Arch Duke.

Nor does the department concur in the opinion, that the departure of Captain Latimer from Trieste on the 22d of June, 1850, was "without excuse," or that the reason assigned for it to the Count Karoli, to wit: that his cruising instructions rendered it necessary, was uncandid or disreputable. His instructions required him to leave the Adriatic "*about*" the last of June or first of July, allowing a large margin for his own discretion. Necessities admit of comparison, and may be more or less imperative. His own interpretation of his instructions, in other words his discretion—"the countries bordering on the Adriatic continuing undisturbed,"—was to determine in what part of the latter end of June, or first of July, it was necessary to depart.

Additional specification, respecting the detention of the ship at Alexandria, and sending men on shore for water during the prevalence of the cholera:

The captain of the ship is to judge of the propriety of having intercourse with the shore, availing himself of all proper sources to enlighten his judgment. But after all, he must decide. If he erred in this instance, (of which the department is not satisfied,) it was an error of judgment merely.

For his failure to record the punishments inflicted by his order, as stated in the report of the court, in contravention of the standing order of the department; for his illegal order not to record certain punishments; for his punishing the boy Watson in private; for striking and abusing his cabin steward, and other abuses of his authority in punishing the men of the ship, Captain William K. Latimer receives the censure of the department, and, as a mark of its displeasure, is detached from the command of the frigate Cumberland, and placed on furlough for the term of twelve months.

The department would be disposed to view his conduct, in the particulars just mentioned, with more severity, but for the fact, which is perfectly evident from the minute and multifarious nature of the charges and specifications preferred against him, and the frivolous nature of many of them,



as well as the delay to make report of the matters complained against him, on the first opportunity after their occurrence, that the author of these charges, Lieutenant Henry C. Flagg, in concert with other persons on board the said frigate Cumberland, unconsciously to Captain Latimer, subjected his deportment, as the commander of the said vessel, to the most rigid scrutiny, with a view to censure; and that the court, by an obvious mistake on a question of law, denied him the opportunity of showing the nature and extent of the combination against him, in refusing him his right to require each of these witnesses to state what, if any thing, had passed between him and the prosecutor, or any other witness, in the preparation or prosecution of the charges. The question was asked of Purser Bryan, and overruled. Such an examination is one of the most common and competent modes of testing the credibility of witnesses, by showing bias from feeling or interest, and exposing as parties those who claim to be witnesses merely. The denial of it to him was manifestly erroneous, and may have been highly prejudicial to him.

Lieutenant Flagg appearing before the department as the sole author of the charges and specifications, must be considered as solely responsible for them. Some of them are so palpably untrue, that the most careless inquiry would have satisfied any one of the fact. Others pertain to matters so trivial, when tested by the evidence, as to come within the useful maxim of the common law, *non curat de minimis*. Others, again, when stripped of the coloring given to them in the specifications, and seen in their true light, appear to be quite venial. Yet they are all arrayed as accusations so grave as to be unsuited to the jurisdiction of the commander of the squadron, but are sent home for the cognizance of the department. The consequence has been, that the cruising for which a squadron is kept in the Mediterranean has been interrupted, for the space of more than two months, to constitute a court for the investigation of these charges, in a foreign port, to the detriment of the American commerce in the Mediterranean, and to the discredit and scandal of the naval service, abroad as well as at home.

For trifling with the department, in thus gravely preferring accusations of the description last above mentioned, Lieutenant Henry C. Flagg receives its censure; and, as a further token of its displeasure, will be detached from the frigate Cumberland, and placed on furlough for the term of twelve months.

The department cannot close these remarks without stating its impression, derived from the charges and specifications aforesaid, and the evidence adduced before the court, that several of the officers of the Cumberland, besides Lieutenant Flagg, seem to have regarded their cruise in the Mediterranean rather in the light of a voyage of personal gratification and convenience, than a military expedition for the protection of the commerce and interests of their country, and that their being thwarted in this expectation has occasioned much of the unhappy controversy which has arisen on board that vessel.

The Cumberland is therefore withdrawn from the Mediterranean squadron. Her officers will be detached, and the crew discharged.

WILL. A. GRAHAM,  
Secretary of the Navy.



REPORT

OF

THE SECRETARY OF THE TREASURY,

COMMUNICATING

*A statement of the Marine Hospital Fund, for the year ending June 30, 1851.*

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JANUARY 27, 1852.

Ordered to lie on the table, and be printed.

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TREASURY DEPARTMENT,  
January 26, 1852.

SIR: I have the honor to transmit herewith, a statement of the Marine Hospital Fund for the fiscal year ending 30th June, 1851.

Very respectfully, your obedient servant,

THO. CORWIN,  
*Secretary of the Treasury.*

Hon. W. R. KING,  
*President pro tempore of the Senate.*

*Recapitulation by States of the receipts and classification of expenditures*

States.	Seamen admitted.	Seamen relieved.	Board and nursing.	Medical services.	Medicine.	Travelling expenses.
Maine .....	455	480	\$5,018 02	\$1,505 63	\$151 60	.....
New Hampshire .....	87	72	634 15	142 00	71 50	\$27 35
Vermont .....	3	3	30 20	6 00	.....	.....
Massachusetts .....	851	1,029	13,554 18	1,270 20	1,135 95	40 00
Rhode Island .....	158	185	2,203 14	470 20	221 95	.....
Connecticut .....	217	227	2,003 69	278 00	.....	4 00
New York .....	1,607	1,779	18,080 08	1,468 90	20 14	5 00
New Jersey .....	12	12	141 00	97 10	4 85	.....
Pennsylvania .....	406	447	7,923 84	439 84	23 10	40 72
Delaware .....	.....	.....	6 00	1 40	.....	.....
Maryland .....	192	238	4,419 01	10 00	6 50	.....
District of Columbia .....	13	13	322 30	.....	.....	.....
Virginia .....	254	274	2,136 82	1,161 85	152 29	11 00
North Carolina .....	242	268	2,853 64	1,361 65	480 00	28 00
South Carolina .....	456	528	6,501 81	117 25	58 61	71 00
Georgia .....	407	440	3,245 03	1,087 16	569 34	99 75
Florida .....	276	282	3,863 93	528 69	61 99	25 00
Alabama .....	515	527	6,871 91	750 00	413 94	.....
Mississippi .....	.....	.....	.....	.....	.....	.....
Louisiana .....	1,116	1,252	19,404 42	1,545 00	1,061 32	11 00
Texas .....	53	56	535 21	217 25	125 06	.....
Tennessee .....	.....	.....	.....	.....	.....	.....
Kentucky .....	141	171	1,380 00	.....	.....	.....
Ohio .....	308	294	4,377 06	323 65	.....	.....
Michigan .....	118	128	560 15	246 40	.....	.....
Illinois .....	120	135	646 76	240 30	.....	.....
Missouri .....	323	322	2,385 42	.....	.....	.....
Wisconsin .....	7	7	71 00	.....	.....	.....
California .....	284	230	27,744 76	186 00	23 50	48 55
Oregon .....	.....	.....	.....	.....	.....	.....
Total .....	8,600	9,299	136,913 22	13,445 53	4,631 73	411 37

N. SARGENT, Register.

of the marine hospital fund for the fiscal year ending June 30, 1851.

Clothing.	Other charges.	Funeral expendi- tures.	Deaths.	Total expenditures.	Hospital money col- lected.	Remarks.
\$2 80	\$100 12	\$160 00	27	\$6,938 17	\$6,872 02	
41 00	9 22	6 00	1	931 22	192 59	
.....	37	.....	.....	36 68	204 33	
.....	351 82	6 00	37	16,358 15	14,800 04	
.....	31 34	36 00	6	2,962 63	1,108 97	
.....	23 04	24 00	4	2,332 73	2,620 63	
.....	272 54	192 00	117	20,038 66	32,316 37	
.....	2 42	.....	.....	245 37	3,834 97	
511 12	115 85	181 00	40	9,226 47	7,380 42	
.....	6	.....	.....	6 46	868 34	
.....	45 00	65 00	14	4,545 51	5,679 84	
.....	3 35	12 00	2	337 65	209 01	
8 70	617 76	33 00	8	4,121 42	4,143 71	
5 25	46 34	54 00	8	4,778 97	1,853 50	
.....	69 09	62 00	14	6,879 76	1,279 39	
.....	51 24½	122 50	31	5,175 63	964 55	
.....	71 64	59 00	11	4,610 25	1,529 26	
.....	210 74	90 00	22	8,336 59	2,258 72	
.....	.....	.....	.....	.....	1,235 49	No return of expenditures.
.....	223 31	204 00	34	22,449 11	8,365 57	
.....	8 96	18 00	3	904 48	390 41	
.....	.....	.....	.....	.....	229 40	No return of expenditures.
.....	.....	.....	.....	1,380 00	1,719 60	
.....	48 10	102 00	26	4,850 81	5,105 41	
.....	8 12	6 00	1	820 67	1,455 15	
.....	8 92	6 00	1	901 98	776 75	
.....	25 00	114 00	19	2,524 42	2,268 77	
.....	71	.....	.....	71 71	206 67	
.....	287 38	735 00	21	29,025 19	23,700 17	
.....	.....	.....	.....	.....	148 67	No return of expenditures.
568 87	2,632 44½	2,287 50	447	160 790 67	139,727 72	

TREASURY DEPARTMENT, Register's Office, January 24, 1852.



REPORT  
OF THE  
SECRETARY OF THE INTERIOR,  
COMMUNICATING,

*In compliance with a resolution of the Senate, information in relation to  
the plan adopted in preparing the census returns.*

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JANUARY 29, 1852.

Ordered to lie on the table, and be printed.

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DEPARTMENT OF THE INTERIOR,  
*Washington, January 28, 1852.*

SIR: In obedience to a resolution of the Senate of the 21st instant, directing "that the Secretary of the Interior be requested to furnish the Senate with an estimate of the number of pages which the census returns will contain, if the same shall be completed on the plan now pursued by the Census Bureau," and "also, what part of the same will be composed of statistical tables, and what part of other matter, and whether there are any tables accompanying the same, not designated by law," I have the honor to enclose, herewith, a copy of the report of the superintendent of the seventh census, to whom the resolution was referred.

I am, sir, with much respect, your obedient servant,  
ALEX. H. H. STUART, *Secretary.*

Hon. WM. R. KING,  
*President of the Senate.*

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CENSUS OFFICE, *January 26, 1852.*

I have the honor to acknowledge your letter, conveying a resolution of the Senate of the United States of the 21st January, 1852, in the following words, viz: "That the Secretary of the Interior be requested to furnish the Senate with an estimate of the number of pages which the census returns will contain, if the same shall be completed on the plan now pursued by the Census Bureau. Also, what part of the same will be composed of statistical tables, and what part of other matter, and whether there are any tables accompanying the same, not designated by law."

I have the honor to state, with reference to the first proposition, that it is impossible to determine in advance, with accuracy, the quantity of space which tabular manuscripts will occupy when thrown into printed form.

If the statistical matter authorized by the act of Congress to be collected is to be arranged as the returns of the last census were classified, it is believed

it would comprise at least eight folio volumes of two thousand pages each. It is confidently believed, however, that all the statistical information obtained will be included in one folio volume, of less than one thousand pages, or within the limits of one volume of the American Archives, "on the plan now pursued by the Census Bureau," for the compilation of the entire work.

If the plan proposed in the work I have prepared to report to you for the examination of Congress, and which is carried out for the State of Maryland alone, and deemed worthy of imitation for our entire country, should be adopted, the work will be extended proportionately, as the quantity of what might be deemed extrinsic matter in that volume shall be found to compare with the purely statistical portion—say, within the dimensions of *two volumes, of one-quarter less size than those of the Archives*. Each volume, however, to be perfect in itself, (unless Congress should recommend otherwise,) and no delay occur in the preparation of the statistical volume.

As the law has "designated" no tables for publication, it follows, as a matter of course, that not one of the statistical tables in the work is "designated" by law. The only tables designated in the law are those prepared under the direction of the census board, to print which, with their contents, would occupy more than one million of pages.

To condense facts and arrange them for use in properly combined groups, requires much experience, and the exercise of great discrimination. To prescribe, in advance, particular rules, would be attended with difficulty; for, unless considerable discretion is granted, there is great danger of unnecessarily enlarging, or injuriously limiting, the publications. A single written line will sometimes express more than if the facts were thrown into a page of tabular matter; whereas, under other circumstances, a tabular page will express more than if the substance were stated in a volume.

The statistical matter contemplated in the act of Congress need not *necessarily* be all tabular matter; and where tables of figures can advantageously be interspersed or expressed with statistical details, in an equally simple, but more agreeable and popular form, such as is now generally adopted in Europe, it seems to me advisable to pursue such an arrangement.

It is to be presumed, however, that Congress will most carefully analyze the Maryland work, which will be printed during the present week, and be able readily to determine how far the model therein presented shall be followed for the general work.

The arrangement of the tables seems most perfect and condensed; and it is for Congress to judge how far the commentary harmonizes with the tables, and how far the one may be abridged without injuring the value of the other.

I have the honor to be, sir, your obedient servant,

JOS. C. G. KENNEDY,

*Superintendent of the Seventh Census.*



# REPORT OF THE SECRETARY OF WAR,

IN RELATION TO

*The claims of the Territory of Iowa, for the expenses of a portion of the militia of that Territory called into service during the autumn of 1839.*

JANUARY 21, 1852.

Referred to the Committee on Military Affairs, and ordered to be printed.

WAR DEPARTMENT,  
February 10, 1841.

SIR: In compliance with the resolution of the House of Representatives, annexed to a report of the Committee on Military Affairs, dated the 25th day of May, 1840, directing the Secretary of War to receive and cause to be examined the muster-rolls, and other evidences of the claims of the Territory of Iowa, for the expenses of a portion of the militia of said Territory called into service during the autumn of 1839, and to report the same to Congress, I have the honor to transmit herewith, the reports of the Paymaster General, Adjutant General, Commissary General of Subsistence, and the Quartermaster General, together with the documents they refer to.

I think it my duty to express the hope that the irregularities in the muster of the militia of Wisconsin and Iowa, noticed in the report of the Adjutant General, will not be sanctioned by Congress. The governors of these Territories were informed that the appointments of brigadier generals would not be authorized until their militia was organized, in order to ascertain what number of brigadiers were required for their command, and those of major generals were not known in the Territories of the United States. The expediency of such a decision is rendered apparent; for, upon the first call made for the militia, two major generals, two brigadier generals, and nine general staff officers, are brought into the field to command eleven hundred men.

This force ought, in the opinion of the department, to be organized in conformity with the laws of the United States, and be paid accordingly.

J. R. POINSETT,  
Secretary of War.

Hon. R. M. T. HUNTER,  
Speaker of the House of Representatives.

ADJUTANT GENERAL'S OFFICE,  
Washington, January 25, 1841.

SIR: Pursuant to your instructions endorsed on the resolution of the House of Representatives, of May 23, 1840, relative to the mustering of certain militia of the Territory of Iowa, said to have been called out in the autumn of 1839, orders and instructions were despatched on the 22d of June (see enclosure marked A) to Brevet Brig. Gen. Brooke, commanding at Fort Crawford, to detail an experienced officer from his command, with instructions to muster the militia referred to in the report and resolution of the 23d of May above mentioned, and to wait on the governor of the Territory for his authority and aid in executing the duty with which he was charged.

The report of the officer assigned to this duty (Lieut. D. Ruggles, 5th infantry,) dated the 30th December, 1840, with the muster-rolls of the militia mustered by him, and the claims for the expenses of this militia force, were received the 23d inst., and are herewith respectfully submitted.

According to the rolls, three skeleton divisions of militia were mustered, consisting of 4 general officers, 9 general staff officers, 40 field-officers, 83 company officers, and only 1,100 non-commissioned officers, musicians and privates, the number of companies being 32. It will be seen, therefore, that the rank and file does not much exceed the organization of a single regiment.

These troops were called out, it appears, in 1839, (not by the authority of the United States,) and under the then existing law, if mustered into the service of the United States, they must take the organization of the regular army, in conformity with the 8th section of the act entitled "An act giving to the President of the United States additional powers for the defence of the United States, in certain cases, against invasion, and for other purposes," approved March 3, 1839.

The instructions to Gen. Brooke, a copy of which, it appears, was furnished to Lieut. Ruggles, specially direct that the mustering of these troops (with a view to payment by the United States) must be executed agreeably to the act of 1839, which instructions were not regarded; but, on the contrary, the officer has, as he states, mustered the militia according to the territorial law of Wisconsin of January 17, 1838, and that of Iowa of January 4, 1839. Had the muster been made according to the law of the United States which was in force at the time, this militia force could not have exceeded thirteen companies, and would have furnished an organization of one regiment, and a small battalion.

Two major generals, two brigadier generals, and nine general staff officers, are reported on the return forwarded by Lieut. Ruggles; but the records of this office do not show that any description of *general officers* have been appointed by the President of the United States, for the Territory of Iowa, with whom, it is believed, the power of making such militia appointments in the Territory rests. The record of all appointments made by the President has been kept in this office.

I respectfully refer you to the 7th section of the act entitled "An act establishing the Territorial Government of Wisconsin," approved the 20th April, 1836, and the 7th section of the act entitled "An act to divide the Territory of Wisconsin, and to establish the Territorial Government of Iowa," approved June 12, 1838, which excludes the appointment of officers of the staff by the governor and Legislative Council.

In 1838, Governor Dodge recommended the commissioning of one major general and two brigadier generals for the militia of the Territory of Wisconsin; but the President did not concur, probably for the reasons set forth in my report to you of June 19, 1838; and that the grade of major general had never been made in the Territorial militia.

I know of no application having been received for the appointment of general officers for the Territory of Iowa; and the records show that the annual returns of the militia required to be furnished for Congress by the act of March 2, 1803, have never been received from Iowa, while the archives of the War Department furnish no evidence now of the organization of a single regiment or company, except the rolls just forwarded by Lieut. Ruggles.

Respectfully submitted:

R. JONES,  
*Adjutant General.*

The Hon. J. R. POINSETT,  
*Secretary of War.*



REPORT  
OF  
THE SECRETARY OF WAR,

WITH

*An abstract of the returns of the militia of the United States, and of their  
arms, accoutrements, and ammunition.*

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FEBRUARY 3, 1852.

Referred to the Committee on the Militia, and ordered to be printed.

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WAR DEPARTMENT,  
Washington, February 2, 1852.

SIR: In compliance with an act more effectually to provide for the national defence, by establishing a uniform militia throughout the United States, approved March 2, 1803, I have the honor to lay before Congress a report of the Adjutant General, with an "abstract of the returns of the militia of all the States and Territories, with their arms, accoutrements, and ammunition," taken from the latest returns received by this department.

Very respectfully, your obedient servant,

C. M. CONRAD,  
*Secretary of War.*

Hon. WM. R. KING,  
*President of the Senate.*

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ADJUTANT GENERAL'S OFFICE,  
Washington, January 31, 1852.

SIR: I respectfully submit herewith the annual general return of the militia of the United States, and of arms, accoutrements, and ammunition, in duplicate, for the year 1851, required to be laid before Congress the first Monday in February, by the act of March 2, 1803, "to provide for the national defence, by establishing a uniform militia."

The general return is compiled from the several returns of the latest date received at the Adjutant General's office.

I am, sir, very respectfully, your obedient servant,

R. JONES,  
*Adjutant General.*

Hon. C. M. CONRAD,  
*Secretary of War.*

*Abstract of the general annual return of the militia of the United States, by States and Territories, according to the act of March, 1803, for the year 1851.*

States and Territories.	RETURNS.		INFANTRY.							
	For what year received.	Date.	Number of divisions.	Number of brigades.	Number of regiments.	Number of battalions.	Number of companies.	Commissioned officers, including general division, brigade, &c.	Non-commissioned officers, musicians, privates, &c.	Total.
Maine .....	1851	Jan. 1, 1852	9	18	1	.....	4	55	60,378	60,433
New Hampshire .....	1851	July 22, 1851	1	8	41	.....	892	1,348	27,751	29,099
Massachusetts .....	1851	Nov. 24, 1851	3	6	10	.....	59	379	117,628	118,007
Vermont .....	1843	Jan. 1, 1844	3	9	28	.....	264	885	19,269	20,154
Rhode Island .....	1851	Dec. 22, 1851	1	5	2	3	7	49	13,988	14,037
Connecticut .....	1851	Dec. 30, 1851	1	2	8	.....	43	252	49,839	50,091
New York .....	1851	Jan. 1, 1852	8	32	69	1	578	6,217	233,684	239,901
New Jersey .....	1829	Dec. 2, 1829	4	13	49	105	437	1,681	31,983	33,664
Pennsylvania .....	1847	Nov. 26, 1847	17	39	174	393	1,638	6,378	248,734	255,112
Delaware .....	1827	.....	1	2	10	.....	.....	871	7,861	8,232
Maryland .....	1838	Jan. 15, 1839	5	16	50	106	480	1,915	40,037	41,952
Virginia * .....	1851	Oct. 31, 1851	5	27	185	.....	1,361	5,823	109,818	115,641
North Carolina .....	1845	Feb. 13, 1846	9	19	95	147	812	4,080	72,863	76,943
South Carolina .....	1848	Feb. 3, 1849	5	10	46	93	417	2,116	47,371	49,487
Georgia .....	1839	Feb. 15, 1840	12	24	96	210	987	3,036	53,390	56,426
Florida .....	1845	Oct. 10, 1845	.....	2	13	26	104	528	10,349	10,877
Alabama .....	1851	Nov. 4, 1851	10	22	100	200	600	2,749	72,600	75,349
Louisiana .....	1847	Jan. 24, 1848	3	12	47	58	444	1,262	39,572	40,834
Mississippi .....	1838	June 6, 1838	5	10	56	112	.....	810	.....	810

Tennessee .....	1840	Feb. 13, 1841	4	22	152			3,607	67,645	71,252
Kentucky .....	1851	Dec. 24, 1851	14	29	148	286	1,109	4,673	74,680	79,253
Ohio .....	1845	Jan. 26, 1846	28	70	7	10	104	707	153,416	154,123
Michigan .....	1851	Dec. 31, 1851	9	21	48	3	520	2,659	69,298	61,857
Indiana .....	1832	Jan. 4, 1833	9	22	79	158	734	2,673	46,159	48,732
Illinois † .....	1851	Dec. 29, 1851	6	24	100	266	1,064	4,618	165,741	170,359
Wisconsin .....	1848	Feb. 13, 1849	3	6	25		496	1,794	30,312	32,106
Iowa † .....										
Missouri .....	1844	Jan. 7, 1845	15	30	100	200	960	3,819	55,181	59,000
Arkansas .....	1843	Jan. 15, 1844	2	8	45	90	250	1,097	15,922	17,019
Texas .....	1847	Nov. 22, 1847	5	10	40	92	812	1,244	18,452	19,696
California † .....										
Minnesota Territory .....	1851	Aug. 16, 1851	1	1				7	1,996	2,003
Oregon Territory † .....										
Territory of Utah .....	1851	Oct. 30, 1851	1	1	2		8	58	519	577
Territory of New Mexico † .....										
District of Columbia .....	1832	Nov. 20, 1833		1	3	6	22	90	1,098	1,118
Grand aggregate .....			197	522	1,724	2,565	14,209	66,780	1,947,434	2,014,214

\* Riflemen included in the infantry.

† Separate arms of service not reported.

‡ No returns.

States and Territories.	RETURNS.		CAVALRY.							
	For what year received.	Date.	Number of divisions.	Number of brigades.	Number of regiments.	Number of battalions.	Number of companies.	Commissioned officers.	Non-commissioned officers, musicians, privates, &c.	Total.
Maine .....	1851	Jan. 1, 1852	.....	.....	.....	.....	.....	.....	.....	.....
New Hampshire .....	1851	July 22, 1851	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts .....	1851	Nov. 21, 1851	.....	.....	.....	.....	.....	.....	267	267
Vermont .....	1843	Jan. 1, 1844	.....	.....	.....	.....	2	10	146	156
Rhode Island .....	1851	Dec. 22, 1851	.....	.....	.....	.....	.....	46	545	590
Connecticut .....	1851	Dec. 30, 1851	.....	.....	.....	.....	.....	5	86	91
New York .....	1851	Jan. 1, 1852	.....	.....	.....	.....	8	28	211	239
New Jersey .....	1829	Dec. 2, 1829	.....	.....	4	8	33	476	6,357	6,833
Pennsylvania .....	1817	Nov. 26, 1817	.....	.....	.....	.....	.....	137	1,617	1,754
Delaware .....	1827	.....	.....	.....	.....	.....	117	351	4,039	4,390
Maryland .....	1838	Jan. 15, 1839	.....	14	.....	28	60	32	234	266
Virginia * .....	1851	Oct. 31, 1851	.....	.....	5	.....	92	328	2,266	2,594
North Carolina .....	1845	Feb. 13, 1846	.....	.....	5	.....	12	435	5,910	6,345
South Carolina .....	1818	Feb. 8, 1819	.....	4	8	.....	.....	63	748	811
Georgia .....	1839	Feb. 15, 1840	.....	.....	.....	.....	.....	299	2,050	2,349
Florida .....	1845	Oct. 10, 1845	.....	.....	.....	.....	14	56	830	886
Alabama .....	1851	Nov. 4, 1851	.....	.....	.....	.....	10	40	500	540
Louisiana .....	1847	Jan. 24, 1848	.....	.....	1	2	88	60	1,120	1,200
Mississippi .....	1838	June 6, 1838	.....	.....	.....	.....	.....	18	511	529
								15	.....	15



Tennessee .....	1840	Feb. 13, 1841							
Kentucky .....	1851	Dec. 24, 1851				11	41	814	858
Ohio .....	1845	Jan. 26, 1846		3	24	86	441	4,886	4,827
Michigan .....	1851	Dec. 31, 1851				13	58	697	755
Indiana .....	1832	Jan. 4, 1833					106	1,681	1,787
Illinois† .....	1851	Dec. 29, 1851							
Wisconsin .....	1818	Feb. 13, 1819					10	87	97
Iowa † .....									
Missouri .....	1844	Jan. 7, 1845				20	80	1,420	1,500
Arkansas .....	1843	Jan. 15, 1844				3	9	49	58
Texas .....	1847	Nov. 22, 1847				1	4	66	70
California † .....									
Minnesota Territory .....	1851	Aug. 16, 1851							
Oregon Territory † .....									
Territory of Utah .....	1851	Oct. 30, 1851	1	1	5	21	107	1,149	1,256
Territory of New Mexico † .....									
District of Columbia .....	1832	Nov. 20, 1833							
Grand aggregate .....			19	27	67	511	3,277	38,422	41,699

\* Riflemen included in the infantry.

† Separate arms of service not reported.

‡ No returns.

States and Territories.	RETURNS.		ARTILLERY.							
	For what year received.	Date.	Number of divisions.	Number of brigades.	Number of regiments.	Number of battalions.	Number of companies.	Commissioned officers.	Non-commissioned officers, musicians, privates, &c.	Total.
Maine .....	1851	Jan. 1, 1852				1	12	47	575	822
New Hampshire.....	1851	July 22, 1851							1,703	1,703
Massachusetts .....	1851	Nov. 21, 1851			4	1	21	142	1,167	1,299
Vermont.....	1848	Jan. 1, 1844						83	773	826
Rhode Island.....	1851	Dec. 22, 1851						21	121	146
Connecticut.....	1851	Dec. 30, 1851					20	90	634	724
New York.....	1851	Jan. 1, 1852						737	12,640	13,377
New Jersey.....	1829	Dec. 2, 1829					32	89	1,836	1,925
Pennsylvania.....	1847	Nov. 26, 1847					65	195	3,342	3,537
Delaware.....	1827							12	176	188
Maryland.....	1838	Jan. 15, 1839		1	2	3	33	104	1,536	1,640
Virginia.....	1851	Oct. 31, 1851			5		20	236	2,876	3,112
North Carolina.....	1845	Feb. 13, 1846								
South Carolina.....	1848	Feb. 3, 1849			1	2	17	76	991	1,067
Georgia.....	1839	Feb. 15, 1840								
Florida.....	1845	Oct. 10, 1845					3	12	153	165
Alabama.....	1851	Nov. 4, 1851						8	110	113
Louisiana.....	1847	Jan. 24, 1848			1	2	22	25	723	748
Mississippi.....	1838	June 6, 1838								

### States and Territories.

### RETURNS.

## ARTILLERY.

**For what year received.**

**Date.**

Number of divisions.

Number of brigades.

Number of regiments.

Number of battalions.

Number of companies.

**Commissioned officers.**

**Non-commissioned officers,  
musicians, privates, &c.**

**Total.**

Maine	1851	Jan.	1, 1852			1	12	47	575	822
New Hampshire	1851	July	22, 1851						1,703	1,703
Massachusetts	1851	Nov.	24, 1851		4	1	21	142	1,167	1,299
Vermont	1848	Jan.	1, 1844					83	773	826
Rhode Island	1851	Dec.	22, 1851					21	121	146
Connecticut	1851	Dec.	30, 1851				29	90	634	724
New York	1851	Jan.	1, 1852					787	12,640	13,377
New Jersey	1829	Dec.	2, 1829				32	89	1,836	1,925
Pennsylvania	1847	Nov.	26, 1847				65	195	3,842	3,637
Delaware	1827							12	176	188
Maryland	1838	Jan.	15, 1839	1	2	3	33	104	1,536	1,640
Virginia*	1851	Oct.	31, 1851		5		20	236	2,876	3,112
North Carolina	1845	Feb.	13, 1846							
South Carolina	1848	Feb.	3, 1849		1	2	17	76	991	1,067
Georgia	1839	Feb.	15, 1840							
Florida	1845	Oct.	10, 1845				3	12	153	165
Alabama	1851	Nov.	4, 1851					8	110	113
Louisiana	1847	Jan.	24, 1848		1	2	22	25	723	748
Mississippi	1838	June	6, 1838							

Tennessee.....	1840	Feb. 13, 1841	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky.....	1851	Dec. 24, 1851	.....	.....	.....	.....	.....	.....	.....	.....
Ohio.....	1845	Jan. 26, 1846	.....	1	8	13	52	975	1,027	.....
Michigan.....	1851	Dec. 31, 1851	.....	.....	.....	88	121	1,946	2,067	.....
Indiana.....	1832	Jan. 4, 1833	.....	.....	.....	11	44	550	594	.....
Illinois †.....	1851	Dec. 29, 1851	.....	.....	.....	.....	60	620	680	.....
Wisconsin.....	1848	Feb. 13, 1849	.....	.....	.....	.....	.....	.....	.....	.....
Iowa †.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	1844	Jan. 7, 1845	.....	.....	.....	5	20	480	500	.....
Arkansas.....	1843	Jan. 15, 1844	.....	.....	.....	.....	.....	.....	.....	.....
Texas.....	1847	Nov. 22, 1847	.....	.....	.....	.....	.....	.....	.....	.....
California †.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minnesota Territory.....	1851	Aug. 16, 1851	.....	.....	.....	.....	.....	.....	.....	.....
Oregon Territory †.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Territory of Utah.....	1851	Oct. 30, 1851	.....	.....	.....	1	4	61	65	.....
Territory of New Mexico †.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia.....	1832	Nov. 20, 1833	.....	.....	.....	.....	2	28	25	.....
Grand aggregate.....	.....	.....	.....	1	14	12	322	2,148	34,001	30,149

\* Riflemen included in the infantry.

† Separate arms of service not reported.

‡ No returns.





*Abstract of the annual returns of arms, accoutrements, and ammunition of the militia of the United States, for the year 1851.*

[ 25 ]

States and Territories.	ORDNANCE.																							
	Brass.											Iron.												
	32-pounders.	24-pounders.	12-pounders.	9-pounders.	6-pounders.	4-pounders.	3-pounders.	2-pounders.	Howitzers.	Epiouvettes.	Cannon.	42-pounders.	32-pounders.	24-pounders.	18-pounders.	12-pounders.	9-pounders.	6-pounders.	4-pounders.	3-pounders.	Pounders.	Swivels.	Howitzers.	Cannon and mortars.
Maine.....			2		40	3	4					1	4	13	7	9		12	6	1			1	
New Hampshire.....					20	21							11	3				11						
Massachusetts.....					42																			
Vermont.....																								
Rhode Island.....					12	4													2			13		
Connecticut.....					40	5	12									5	2	29						
New York.....		2	10	6	25	109	12	10	57		12				2	4	6	24					24	
New Jersey.....						4												23	6	1		8	12	
Pennsylvania.....					66	5												35						
Delaware.....																			1					
Maryland*.....																								
Virginia.....	6				35	1				11	12			5		36		139	43					
North Carolina.....					9											6								
South Carolina*.....																								
Georgia.....					2																			
Florida*.....																								
Alabama.....																								
Louisiana*.....																								
Mississippi*.....																								
Tennessee.....																		1						
Kentucky.....					3													6						



# ABSTRACT—Continued.

[ 25 ]

States and Territories.	ORDNANCE STORES.														
	Sponges and rammers.	Ladles and worms.	Ballscrews and worms.	Bricoles and drag-ropes.	Trail handspikes.	Lead aprons.	Ammunition boxes.	Tumbrils or powder carts.	Sets of harness.	Rounds of shot and shells.	Pounds of cannon powder.	Gun carriages.	Caissons.	Tube boxes.	Linstocks.
Maine .....	248	172	.....	462	125	19	35	15	32	15,240	.....	.....	.....	.....	.....
New Hampshire .....	56	50	.....	96	49	44	82	.....	62	.....	.....	.....	.....	42	41
Massachusetts .....	65	37	.....	178	79	39	35	20	62	.....	.....	.....	.....	.....	.....
Vermont .....	18	18	.....	6	14	3	20	12	7	.....	.....	.....	.....	.....	.....
Rhode Island .....	20	10	.....	47	21	12	15	5	10	40	.....	.....	.....	.....	.....
Connecticut .....	57	43	.....	41	78	48	31	.....	16	7,367	.....	.....	.....	.....	.....
New York .....	182	29	.....	158	321	.....	.....	.....	557	10,002	.....	.....	.....	.....	.....
New Jersey .....	33	.....	.....	59	22	.....	.....	24	.....	.....	.....	.....	.....	.....	.....
Pennsylvania .....	.....	.....	.....	.....	.....	.....	.....	.....	21	.....	.....	.....	.....	.....	.....
Delaware .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia .....	30	15	679	30	22	10	9	.....	22	.....	.....	31	6	.....	28
North Carolina .....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Florida* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alabama .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Louisiana* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mississippi* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky .....	9	9	.....	18	18	9	9	.....	9	.....	.....	.....	.....	.....	.....



Ohio.....	80	80	.....	69	51	16	32	3	5	.....	3	.....	.....	.....	.....
Michigan.....	46	23	.....	28	46	28	28	.....	8	.....	.....	.....	12	.....	.....
Indiana.....	8	.....	.....	18	10	4	6	.....	3	.....	.....	.....	.....	.....	.....
Illinois*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iowa*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	12	6	.....	.....	12	.....	6	.....	12	.....	.....	.....	.....	.....	.....
Arkansas.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Texas*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
California*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minnesota Territory*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oregon Territory*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Territory of Utah.....	2	.....	.....	.....	.....	.....	2	2	1	.....	.....	.....	.....	.....	.....
Territory of New Mexico*.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aggregate.....	820	437	679	1,205	868	227	305	71	807	32,655	5	34	18	42	60

\* No returns of arms, &c., from these States and Territories.

States and Territories.	Muskets.	Bayonets.	Cartridge boxes and belts.	Bayonet scabbards and belts.	Brushes and picks.	Spare flints.	Ball cartridges.	Carbines.	Rifles.
Maine.....	10,888	10,861	2,804	2,675	1,764	12,271	200		8,421
New Hampshire.....	9,825	9,407	2,391	2,387	4,650	5,803			8,081
Massachusetts.....	4,566	4,566	5,401	4,248	2,790		10,854		214
Vermont.....	9,553	9,882	9,138	8,972	8,794	16,889			174
Rhode Island.....	617	617	672	661	555	745	2,848		
Connecticut.....	5,762	5,762	3,098	827	1,297	8,300	8,780		1,488
New York.....	40,629	40,659	33,040	11,371	3,160	51,900	247,878		2,738
New Jersey.....	12,986	2,932	1,060	2,932					764
Pennsylvania.....	17,739	15,185	13,200	12,423					6,832
Delaware.....	840	818	384						70
Maryland.....									
Virginia.....	60,393	60,319	5,403	2,104	429			744	5,217
North Carolina.....	9,902	6,892	5,045	3,700	2,151				16,072
South Carolina.....									
Georgia.....		246	246	210	211				
Florida.....									
Alabama.....	30,000								20,000
Louisiana.....									
Mississippi.....									
Tennessee.....	9,822	1,622	1,691	1,712	1,966	5,000	135		118,065
Kentucky.....	4,766	4,766	4,766	4,766		2,221			2,077

Ohio .....	6,851	6,462	4,467	3,882	682	260	70	4,040
Michigan .....	2,019	613	1,715	1,414	1,051	30,260		290
Indiana .....	577	232	189	15		10,000		8,200
Illinois* .....								
Wisconsin .....	167	167	167	167	167			
Iowa* .....								
Missouri .....	965	965	965	965	965			5,025
Arkansas .....								500
Texas* .....								
California* .....								
Minnesota Territory* .....								
Oregon Territory* .....								
Territory of Utah .....								
Territory of New Mexico* .....								
District of Columbia .....	144	144	144	144				60
Aggregate .....	287,503	182,087	96,939	65,595	30,655	143,669	274,130	98,746

\* No returns of arms, &c., from these States and Territories..

† Kegs.

‡ Fusees included.

States and Territories.	Powder-horns.	Pouches.	Bullet-moulds.	Screw-drivers and wipers.	Loose balls.	Pounds of rifle powder.	Swords.	Sword scabbards and belts.	Cavalry and artillery swords.
Maine.....	2,500	1,515	.....	.....	91,800	.....	1,012	1,268	.....
New Hampshire.....	352	861	.....	.....	.....	.....	1,185	1,197	.....
Massachusetts.....	.....	.....	.....	.....	2,800	54	932	982	.....
Vermont.....	1,768	1,595	.....	.....	.....	.....	771	771	.....
Rhode Island.....	.....	.....	.....	.....	.....	.....	75	135	60
Connecticut.....	85	.....	.....	.....	802,050	.....	1,916	1,916	.....
New York.....	.....	.....	.....	.....	.....	.....	.....	.....	2,567
New Jersey.....	117	94	.....	.....	.....	.....	2,339	2,339	.....
Pennsylvania.....	2,518	2,201	.....	.....	.....	.....	1,810	12,428	.....
Delaware.....	.....	.....	.....	.....	.....	.....	374	.....	.....
Maryland.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia.....	507	.....	497	7,884	.....	.....	.....	1,760	4,460
North Carolina.....	.....	.....	.....	.....	.....	.....	2,940	2,500	.....
South Carolina.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	.....	.....	.....	950	950	.....
Florida.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alabama.....	.....	.....	.....	.....	.....	.....	100	.....	.....
Louisiana.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mississippi.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee.....	14,715	.....	.....	.....	.....	1208	1,731	1,788	.....
Kentucky.....	1,727	1,786	.....	.....	6,058	237	788	788	.....

Ohio .....	1,381	1,381			2,719	59	2,698	2,275	
Michigan.....	290	290					40	838	891
Indiana.....	6,500				48,000	1,200	780	780	
Illinois*.....									
Wisconsin.....							45	45	
Iowa*.....									
Missouri .....	3,561	3,561					510	222	
Arkansas.....	400						50	50	
Texas*.....									
California*.....									
Minnesota Territory*.....									
Oregon Territory*.....									
Territory of Utah.....									
Territory of New Mexico*.....									
District of Columbia.....							18		
Aggregate.....	86,381	12,791	497	7,384	454,027	1,550	20,558	32,967	7,984

\* No returns of arms, &c., from these States and Territories.

† Flasks.

States and Territories.	Horsemen's pistols.	Holsters.	Knapsacks.	Haversacks.	Canteens.	Drums.	Fifes.	Bugles and trumpets.	Colors.
Maine .....	330			61		84	30	4	
New Hampshire .....	210		8,039			470	482		
Massachusetts .....	320		1,253	73		74	44	21	
Vermont .....	447		8,877						
Rhode Island .....	169			14		2	2	1	
Connecticut .....	986		286			164	41	6	
New York .....	2,291		2,410			21	119	80	
New Jersey .....	1,808					887	849	61	
Pennsylvania .....	6,156		615	2		861	600	71	
Delaware .....	164								
Maryland .....									
Virginia .....	2,709	1,703				82	82	84	78
North Carolina .....	2,751					840	760	62	
South Carolina .....									
Georgia .....						98	89		
Florida .....									
Alabama .....						100	100		
Louisiana .....									
Mississippi .....									
Tennessee .....	1,068					456	279		
Kentucky .....	1,428					47	43		

Ohio .....	3,692	.....	250	51	.....	142	84	27	.....
Michigan .....	657	.....	.....	.....	.....	.....	.....	.....	.....
Indiana .....	350	.....	.....	.....	.....	288	400	20	.....
Illinois* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin .....	45	.....	.....	.....	.....	.....	.....	.....	.....
Iowa* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri .....	890	.....	.....	12	.....	53	51	.....	.....
Arkansas .....	.....	.....	.....	.....	.....	6	6	8	.....
Texas* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
California* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minnesota Territory* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oregon Territory* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Territory of Utah .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Territory of New Mexico* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
District of Columbia .....	.....	.....	76	.....	.....	.....	.....	.....	.....
Aggregate .....	25,923	1,703	17,655	218	.....	4,064	3,411	880	73

\* No returns of arms, &c., from these States and Territories.

NOTE.—This return of arms, &c., is taken from the returns corresponding in date with those which furnish the strength of the militia.

WAR DEPARTMENT, Adjutant General's Office, Washington, January 31, 1852.

R. JONES, Adjutant General United States Army.





REPORT  
OF  
THE SECRETARY OF THE INTERIOR,

COMMUNICATING

*A copy of the instructions given to the commissioners appointed under the act to ascertain and settle the private land claims in California.*

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FEBRUARY 3, 1852.

Read, referred to the Committee on Public Lands, and ordered to be printed.

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DEPARTMENT OF THE INTERIOR,  
*Washington, January 31, 1852.*

SIR: In obedience to the resolution of the Senate of the 26th instant, I have the honor to communicate, herewith, a copy of the instructions given by the department to the commissioners appointed pursuant to the act of Congress approved 3d of March, 1851, entitled "An act to ascertain and settle the private land claims in the State of California," and also a copy of the instructions which have been transmitted to the surveyor general of California in connexion with the subject.

I am, sir, with great respect, your obedient servant,  
ALEX H. H. STUART, *Secretary.*

HON. WILLIAM R. KING,  
*Senate of the United States.*

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GENERAL LAND OFFICE,  
*January 30, 1852.*

SIR: Pursuant to the resolution of the Senate, adopted on the 26th inst., and referred by you to this office, I have the honor to transmit herewith a copy of the instructions, bearing date September 11, 1851, from the department to the commissioners who have been appointed pursuant to the act of Congress, approved 3d March, 1851, entitled "An act to ascertain and settle the private land claims in the State of California," and also a copy of the instructions which have been transmitted to the surveyor general of California in connexion with the subject.

With great respect, your obedient servant,  
J. BUTTERFIELD, *Commissioner.*

HON. A. H. H. STUART,  
*Secretary of the Interior.*

GENERAL LAND OFFICE,  
September 11, 1851.

GENTLEMEN: You have been appointed commissioners to discharge the important and responsible duties prescribed by the act of Congress, approved 3d March, 1851, entitled "An act to ascertain and settle the private land claims in the State of California," which authorizes the continuance of the commission for three years from the date of the law, unless sooner terminated by the President of the United States. The act charges you with the appointment of "a secretary skilled in the Spanish and English languages," to "act as interpreter, and to keep a record of the proceedings of the board in a bound book, to be filed in the office of the Secretary of the Interior on the termination of the commission," and provides for the employment by you, not to exceed five, of such a number of clerks "as may be necessary." It further authorizes the appointment by the President (which will be duly made) of a law agent skilled in both the languages mentioned, "whose special duty it shall be to superintend the interests of the United States in the premises." This law has made ample provision for the accomplishment of the great object of the government, which is to ascertain, settle, and recognise all bona fide valid titles derived from the former sovereignties of the country, and to detect, and forever put to rest, all fabricated, fraudulent, or simulated grants. The growth and prosperity of California materially depends upon a speedy and just settlement of the claims to lands within her limits, and the separation of all private property from the public domain, so that the public lands in that State may be disposed of as Congress may hereafter direct, without danger of conflict in title, or interference with the rights of individuals.

You are, therefore, directed to proceed at once to San Francisco, in California.

Immediately upon your arrival, you will hold your first session at that place, agreeably to the orders of the President, giving due and public notice of the fact as required by law.

You will give timely advice to the department of such other places as you would recommend that your subsequent sessions should be held.

The eighth section of the said act of 3d March, 1851, declares as follows:

"That each and every person claiming lands in California by virtue of any right or title derived from the Spanish or Mexican government, shall present the same to the said commissioners when sitting as a board, together with such documentary evidence and testimony of witnesses as the said claimant relies upon in support of such claims; and it shall be the duty of the commissioners, when the case is ready for hearing, to proceed promptly to examine the same upon such evidence, and upon the evidence produced in behalf of the United States, and to decide upon the validity of the said claim; and within thirty days after such decision is rendered, to certify the same, with the reasons on which it is founded, to the district attorney of the United States in and for the district in which such decision shall be rendered."

This, in connexion with the fourteenth section, which relates to property under *corporate grants*, shows the classes of titles in which the claimants have authority for bringing their claims before the commissioners for adjudication; and in which, after obtaining a decision, both the claimants and the United States have a right, on petition, to have such decision reviewed

by the United States courts, with a right of appeal to the Supreme Court of the United States.

The eleventh section of the act points to the *data* which shall control in the adjudications, by direction as follows:

"That the commissioners herein provided for, and the district and supreme courts, in deciding on the validity of any claim brought before them under the provisions of this act, shall be governed by the treaty of Guadalupe Hidalgo, the law of nations, the laws, usages, and customs of the government from which the claim is derived, the principles of equity, and the decisions of the Supreme Court of the United States, so far as they are applicable."

The treaty of *Guadalupe Hidalgo*, concluded at that city on the 2d of February, 1848, the ratifications of which were exchanged on the 30th of May, 1848, expressly stipulates, in the eighth and ninth articles, for the security and protection of the property of individuals, and in this respect not only employs, in substance, the language that is used in the treaty of 1803, by which the former province of Louisiana was ceded to the United States by the French republic, but conforms to the universally acknowledged principles of the law of nations, which interdict interference to the prejudice of private property upon a change of sovereignty. By the act of Congress, approved 26th May, 1824, (United States Statutes at Large, volume 4, page 52, chapter 173,) entitled "An act enabling the claimants to lands within the limits of the State of Missouri and Territory of Arkansas to institute proceedings to try the validity of their claims," the courts were opened for the adjudication of any title of a certain class in Missouri and Arkansas, which was claimed to be "protected or secured" by the treaty of 1803 with the French republic; "and which might have been perfected into a complete title under and in conformity to the laws, usages, and customs of the government under which the same originated, had not the sovereignty of the country been transferred to the United States." This act of 1824, with certain modifications, was extended to Florida by the act of Congress, approved 23d May, 1828, entitled "An act supplementary to the several acts providing for the settlement and confirmation of private land claims in Florida." (United States Statutes at Large, vol. 4, page 284, chap. 70.)

Numerous cases on appeal under these laws, and other cases on writ of error, in which actions in the courts below had been instituted in the nature of ejectments, have been brought before the Supreme Court of the United States, where the rights of property under inchoate titles derived from the Spanish authorities have been examined, the principles of the laws of nations and the principles of equity under our own legislation have been asserted, expounded and applied to the species of property in question, and the whole subject most elaborately and ably discussed by that high tribunal, the most of the decisions of which, in land causes, will be found in Peters's and Howard's Reports of the Decisions of the Supreme Court of the United States. Besides the treaty of 1848 with Mexico, as found in the ninth volume of the United States Statutes at Large, the law of nations and the principles of equity as contained in works of authority, from which your own judgment will enable you to make a proper selection, and the aforesaid Decisions of the Supreme Court, in Peters's and Howard's Reports, in which the principles of public law and of equity are developed, the aforesaid 11th section of the act of 3d March, 1851, requires that in adjudicating, you

shall be governed "by the laws, usages, and customs of the government from which the claim is derived." There are claims in California derived from the authorities of Old Spain as well as from Mexico, and it will therefore be necessary for you to refer to, and consult the laws of Spain, the royal ordinances, the decrees and regulations, which may be found in White's New Recopilacion, in two volumes, relative to the disposal of the royal domain, in order to form a just idea of the policy and general principles which obtained and controlled in her land system. I refer you also to the report, dated March 1, 1849, of the Secretary of State for the Territory of California:

1. "On the laws and regulations governing grants or sales of public lands in California," not only during the government of Old Spain, but subsequently during the continuance of the Mexican power, and up to the period when the United States succeeded to the sovereignty.

2. "On the laws and regulations respecting the lands and other property belonging to the Missions of California."

3. "On the titles of land in California which may be required for fortifications, arsenals, or other military structures, for the use of the general government of the United States."

This report, with the accompanying appendix, 1 to 33, is printed in Executive document No. 17, House of Representatives, first session thirty-first Congress, pages 119 to 182, inclusive.

You are requested to obtain, for the use of the "commission," authentic copies, in the *original*, of the laws, regulations, &c., which are referred to in said report; also, a copy of the work therein mentioned, entitled "Ordenanzas de Tierras y aguas," by "Marianas Galuan, edition of 1844;" with such other official documents or papers as may have a material and useful bearing upon the matters which are to engage your attention in the duties devolved upon you by law—all of which, and such other books as you may require, you will have properly bound and labelled with the name of the "*Commission*," and as the "*property of the United States*."

You will find in Senate report committee No. 75, first session thirtieth Congress, testimony taken before a Committee of the Senate, touching grants in California illegally made and without the usual formalities, to which I would invite your careful consideration.

The United States surveyor general for California, whose office is at San Francisco, has obtained possession of the archives of the former sovereignties of California, and has engaged a competent person to arrange, classify, and index them in such a manner, as to be available in the examination of titles.

This work of arrangement, if not already finished, will be completed by the time you will be able to reach the country.

The surveyor general will be instructed to lay open to you those archives during your session at San Francisco, and to have prepared either a complete synopsis or summary of the contents of each of the archives, or fac simile copies of the whole, whichever you may prefer, so as to be in readiness for delivery to you when you shall find it necessary to leave that place to visit other points. With such materials to guide the commission you will enter upon the business of adjudication.

You will require the claimant, in every case, to file a written notice, setting forth the name of "present claimant;" name of "original claimant;" nature of claim; its date: from whom the original title was derived, with

a reference to the evidence of the power and authority under which the granting officer may have acted; quantity claimed; locality; nature and extent of conflicting claim, if any; with a reference to the documentary evidence and testimony relied upon to establish the claim, and to show a transfer of right from the "original grantee" to "present claimant."

You will also require the claimant, in all cases, to file a duly authenticated plat of survey exhibiting the tract claimed, and showing the nature and extent of any claim interfering therewith.

This is deemed indispensable in order by such initiatory survey to fix, with precision and certainty, the limits of every tract claimed, thereby avoiding, in regard to location, all doubt or controversy hereafter, in case of confirmation, and furnishing at the same time to the commission, and to the courts, evidence of the existence and nature of conflicting claims.

There are, it is believed, no Spanish or Mexican plats of survey extant for lands in California, no actual surveys, so far as this office is advised, having been executed during the sovereignty over the country, of either Spain or Mexico.

The surveys, therefore, of all claims which may be brought before the commissioners, should be required to be executed at the *expense of the parties*, in accordance with such orders as you may deem necessary and proper in each case, and to be made *under the superintendence of the United States surveyor general*, by whom the surveys, and any interference which may exist, should be examined and certified.

The effect of this will be not only to save claimants from embarrassments and difficulties, inseparable from the presentation and adjudication of claims with indefinite limits, but it will promote the welfare of the country generally, by furnishing the surveyor general with evidence of what is claimed as private property, thus enabling him to ascertain what is undisputed public land, and to proceed with the public surveys accordingly, without awaiting the final action of the different tribunals upon private titles.

The papers, in every case, should be regularly numbered, and entered in the order of presentation, in a docket of the form herewith.

Your journal, to consist of a substantially bound volume, or volumes, and prefaced by a record of your commissions and oaths of office, should contain a full record of the notice and evidence in support of each claim, and of your decision, setting forth, as succinctly and concisely as possible, all the leading facts, particulars, and the principles applicable to the case, and upon which such decision may be founded.

As a case may be acted upon by you at different periods, before being finally decided, the connexion of your proceedings may be kept up by page references both in the journal and on the docket. All the original papers should of course be carefully numbered, filed and preserved, and should have an endorsement upon each of them of the volume and page of the record in which they may be entered.

The 8th section of the act, as hereinbefore indicated, requires you, "within thirty days after such decision is rendered, to certify the same, with the reasons on which it is founded, to the district attorney of the United States in and for the district in which such decision shall be rendered." This requirement will of course be strictly and uniformly observed by you, and the necessary entries of your action in the premises made in your record.

It will be observed that the 12th section of the act declares, "that to

entitle either party to a review of the proceedings and decision of the commissioners, notice of the intention of such party to file a petition, to the district court, shall be entered on the journal or record of proceedings of the commissioners within sixty days after their decision on the claim has been made and notified to the parties, and such petition shall be filed in the district court within six months after such decision has been rendered." This provision of law renders it necessary that you shall regularly notify the claimants, also, of your decision, and this should always be done promptly; and in any case in which the requisite notice of the intention to file a petition in court shall not be given to you within sixty days from the time you may notify the parties of your decision, such decision will *ipso facto* become final and conclusive, and you will of course report any such case to the surveyor general, and to the department.

It is a matter of high public concern, and of the deepest interest to California, that the business of the commission should be pressed forward with all convenient despatch, and as much so as is compatible with the grave interest involved; and when your labors in regard to the classes of titles contemplated in the foregoing shall have terminated, you will give due notice of the fact to this office, and will turn over the records and papers to the surveyor general, subject to the orders of the department.

Besides the duties hereinbefore adverted to, the act of 3d March, 1851, requires, in its 16th section, that the commissioners shall "ascertain and report to the Secretary of the Interior the tenure by which the Mission lands are held, and those held by civilized Indians, and those who are engaged in agriculture or labor of any kind, and also those which are occupied and cultivated by Pueblos or Rancheros Indians."

You are directed to make a separate and full report on the several subjects specified in this section of the act, at as early a period as may be consistent with your other duties under the law.

Your salaries, as stipulated in the 17th section of the act, will "commence from the day of the notification" by you "of the first meeting of the board."

Very respectfully, your obedient servant,

J. BUTTERFIELD,

Commissioner.

MESSRS. HILAND HALL,  
HARRY J. THORNTON,  
JAMES WILSON,

United States Commissioners for the  
adjudication of California land claims.

The foregoing instructions are approved:

ALEX. H. H. STUART,  
Secretary.

DEPARTMENT OF THE INTERIOR,  
September 11, 1851.

GENERAL LAND OFFICE,  
September 11, 1851.

SIR: By a letter of the 30th of June last you informed me of the course you proposed to pursue in regard to the ARCHIVES of the former governments of California, which you had not then obtained, but soon expected; and under date the 13th of August last I advised you of the approval of your suggestions, and requested you to cause an *abstract* of them, in duplicate, to be prepared, duly verified, one for your office and one to be sent here.

Since then I have received your communication of the 14th July last, informing me that the archives have been delivered over, and are in your office.

You further state that you have employed a competent person to arrange, classify, and index them, so as to render the archives available in the examination of titles, and at the same time suggest that they be kept "in *tin* boxes or trunks of convenient size, having a lock and key to each, and painted and numbered," stating that "by this plan they can be kept perfectly secure from accident or improper handling, and at the same time be always in that condition in which they can be most conveniently kept in the vault or removed therefrom, as circumstances would render necessary."

I approve of what you have done, and what you propose in the matter, both as to the employment of an individual for the purpose referred to, and as to the manner of securing and preserving the archives.

The arrangement and indexing of the papers, it is presumed, has been completed, and will render it easy for you to have the abstract of them prepared in duplicate as requested. It would be quite important, in fact, for the *department* to have a complete fac simile copy of all of the archives duly verified, and I request that you will report to me the probable cost of preparing such a transcript.

Herewith I enclose for your information a copy of the instructions, dated 11th September, 1851, from this office to the commissioners, appointed pursuant to the act of Congress, approved 3d March, 1851, entitled "An act to ascertain and settle the private land claims in the State of California." You will see that the first session of the commissioners is to be held at St. Francisco, on the 8th December, 1851.

During their session at that place you will lay open to them the archives, and will have prepared and in readiness for them, by the time they leave St. Francisco to visit other points, either a complete synopsis or summary of the contents of those archives, or, if deemed by them indispensable in the discharge of their duties, a fac simile copy of the whole of them must be furnished, and in either case the service must be paid for out of "the commission" fund.

Whilst it is not desired to avoid any legitimate expense necessary to a proper and faithful discharge of duty, it is important that economy should be observed; and if the *synopsis* alluded to will answer every purpose for examination, and be a readier means of bringing titles to a test, why then the synopsis should be preferred; and should any special case of doubt arise, the commissioners can defer final action upon it until either a personal inspection can be made by them of the archives on their return to St. Francisco, or such examination may be made by the surveyor general, and the result officially reported to them by him upon their written request.

You will find from these instructions that the claimants will be required,

under the orders of the commissioners, to have *initiatory surveys* made under your superintendence, to be examined and certified by you.

You will not fail to appreciate the responsibility of seeing that these surveys are made in strict accordance with the plain intent of each grant, both as to locality and area, in order to fulfil in this particular the precise purpose of the granting power by fixing and limiting the location to the specific tract or parcel of land designed to be conceded by the proper authority, and separated from the national domain.

Returns of survey must exhibit the nature and extent of interference, if any such exist, and should be so made as will readily enable you to connect the same with the lines of the public surveys.

It is a matter of the highest concern, and demanded by the interests of the people of California, that the surveying of the public lands shall not be delayed until all these private land titles shall have been finally adjudicated. These "*initiatory*" surveys will avoid the necessity of such delay; and when all of them shall have been filed, it will enable the surveying department to push forward its business and run the lines of the public surveys just as well and as effectually, as if every private land title in California had in the first instance been finally adjudicated.

Besides this desideratum, private claimants by this measure will be saved from the difficulties incident to the adjudication of claims with indefinite and uncertain boundaries, and relieved from the danger of disputes and conflicts in location in the event of the final confirmation of their titles.

In any case in which a private title may be finally adjudged to be invalid, the surveyor general can hereafter easily represent the same as public land by the extension over the same of the lines of the public surveys. You are requested to acknowledge the receipt of this communication, and if any thing in addition to the enclosed instructions should occur to you as material to be communicated to the commissioners in order to facilitate their operations, I request that you will suggest it.

Very respectfully, your obedient servant,

J. BUTTERFIELD, *Commissioner.*

SAML. D. KING, Esq.,

*Surveyor General, San Francisco, California.*



REPORT  
OF  
THE SECRETARY OF WAR,

IN RELATION TO

*The execution of the act to found a Military Asylum for the relief and support of invalid and disabled soldiers of the U. S. Army.*

FEBRUARY 5, 1852.

Referred to the Committee on Military Affairs, and ordered to be printed.

WAR DEPARTMENT,  
Washington, February 3, 1852.

SIR: The 9th section of the act entitled "An act to found a Military Asylum for the relief and support of invalid and disabled soldiers of the army of the United States," declares "that the commissioners, with the approval of the Secretary of War, prepare the necessary rules and regulations for the government of said institution, and cause the same to be fitted and furnished for the immediate reception of those person provided for in this act, and that the Secretary of War report upon the execution of this duty at the next session of Congress."

It is not very clear what is the precise duty which it was designed by this section to impose on the Secretary of War; but I presume it was intended that he should report what had been done, in pursuance of the act.

This duty I now proceed to perform. The reports of the president and of the treasurer of the institution are herewith submitted. From these documents it will be seen that the board of commissioners was organized, agreeably to the provisions of the act, and entered immediately upon the discharge of their duties.

They adopted a series of regulations for the government of the institution, which were approved by me, a copy whereof is herewith submitted.

The board determined to establish the principal asylum within the District of Columbia, and for that purpose purchased from Mr. George W. Riggs a tract of land, situated about two miles from this city, containing about two hundred and sixty acres, for which, with the valuable improvements thereon, they agreed to pay \$57,500, which purchase has been duly approved by the President.

The board have not yet decided whether or not they will establish branches of the institution at other points.

With a view to carry out the benevolent designs of Congress as promptly

as possible, by affording immediate relief to the objects of their bounty, the board have provided places for the temporary reception and accommodation of those persons entitled to the benefit of the act, to wit: one in the vicinity of this city, and one near New Orleans, both of which are now in operation.

By the report of the treasurer it appears that the funds received by the institution, up to the 31st of December last, amounted to \$138,554 14, whereof there has been expended \$19,814 70; and that of the balance of \$118,736 44 remaining on hand, \$118,098 33 has been invested in stock in the State of Virginia, bearing 6 per cent. interest, leaving in the hands of the treasurer the sum of \$641 11.

Very respectfully, your obedient servant,

C. M. CONRAD,

*Secretary of War.*

Hon. WM. R. KING,

*President of the Senate.*

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WASHINGTON, D. C., December 31, 1851.

SIR: The board of commissioners of the Military Asylum, as constituted section 2d of an act entitled "An act to found a Military Asylum for the relief and support of invalid and disabled soldiers of the army of the United States," approved March 3, 1851, having organized March 12, 1851, proceeded to the discharge of the duties devolved upon it by that act.

The board has the honor to report, that it has adopted a system of "rules and regulations for the general and internal direction" of the institution, a printed copy of which, as approved June 16, 1851, is herewith submitted—A.

And that a temporary place of reception for invalid and disabled soldiers has been opened at the United States barracks below New Orleans, Louisiana, at which a small number of them have been provided for, since May 15, 1851.

A site for a Military Asylum in the District of Columbia has been selected by the board, approved by the President of the United States, and purchased.

The officers for this site have been designated, and have been engaged preparing a temporary place of reception in this vicinity, similar to that established at New Orleans, which is now in operation.

The following officers have been appointed by the board of commissioners, and approved by yourself, viz:

Colonel J. B. Crane, 1st artillery, governor of Washington site.

Brevet Major Larkin Smith, 8th infantry, deputy governor, Washington site.

Brevet Major W. W. Mackall, assistant adjutant general, secretary and treasurer of the Washington Asylum.

Lieut. Colonel W. R. Jouett, governor of temporary place of reception at New Orleans barracks.

Brevet Major Earl Van Dorn, secretary and treasurer of the temporary place of reception at New Orleans barracks.

Brevet Lieut. Colonel H. L. Scott, aid-de-camp to the general-in-chief, secretary of the board of commissioners, resigned.

Brevet Captain Schuyler Hamilton, aid-de-camp to the general-in-chief, now secretary to the board of commissioners; and Assistant Surgeon Benjamin King, United States army, treasurer of the board of commissioners.

Appended is the treasurer's report of the funds received and disbursed on account of the Military Asylum, to December 31, 1851—B.

I have the honor to be, with high respect, your most obedient servant,  
**WINFIELD SCOTT,**  
*Major General, and President of the Board.*

Hon. C. M. CONRAD,  
*Secretary of War.*

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A.

*Rules and regulations for the "general and internal direction" of the Military Asylum instituted by act of Congress, approved March 3, 1851.*

ART. 1. The general direction of the Asylum is with the board of commissioners, constituted by section 2 of the act of Congress creating the institution, who will regularly meet, for the transaction of business, on the first Monday of February, June, and November, of each year, and as much oftener as may be necessary; and at their meeting in November, make an annual report of their proceedings to the Secretary of War, for the information of Congress.

ART. 2. To facilitate the general direction of the Asylum, there shall be appointed, from time to time, by the board, from its members, an executive committee of three commissioners, any two of whom may constitute a quorum for the transaction of business, and also appoint a secretary and a treasurer.

ART. 3. The executive committee shall counsel and direct the treasurer in the management of the property and funds of the Asylum, when without special directions from the board of commissioners. They shall examine and audit the treasurer's accounts, and also have power, when in their judgment it may be necessary, to call a special meeting of the board of commissioners, or make a partial appropriation of money to meet any extraordinary contingency, but in all such cases they will make a report of such transactions at the next meeting of the board.

ART. 4. The secretary, who shall also be register, shall countersign all checks of the treasurer, to the order of the person who is to receive the money. He shall record the name, description, and military history of every pensioner of the institution. He shall be the channel of communication of the board of commissioners, and transmit all orders and regulations of the board relative to the several sites of the Asylum, receive all applications for admission to its benefits, and forward persons entitled thereto to one of the sites of the Asylum. He shall also take the necessary measures to carry into effect the resolutions and directions of the board, by correspondence with the agents of the institution or otherwise. He shall be present at every meeting of the board, and, besides keeping exact minutes of their proceedings, lay before them the books and correspondence which belong to his duties.

ART. 5. The treasurer shall give bonds in the sum of twenty thousand dollars, to be approved by the executive committee, for the faithful performance of his duties. He shall collect all dues owing or payable to the board of commissioners. He shall keep a regular set of books, in which shall be entered all payments by, or to, the commissioners. He shall invest or deposit all moneys belonging to the Asylum, in such manner as the board of commissioners shall direct, and no part thereof shall be drawn unless by appropriation previously made, and then only on the check of the treasurer, countersigned by the secretary, naming the party to receive.

It shall be the duty of the treasurer to exhibit to the executive committee of the board, once a month, and oftener if required, a statement of the cash account, showing the balance in deposit, the sums to be received during the month, and the appropriations for the same period. He shall also report the state of the cash account at each stated meeting of the board, the probable moneys to come into the treasury before the next meeting, and an estimate of the funds which may be required to meet the demands, in order that necessary appropriations may be made by the board. He shall also render such other returns as may be required by the board.

ART. 6. Under the direction of the board of commissioners, the governor, deputy governor, and secretary and treasurer, for each separate site of the Asylum, provided by section three of the act creating the Asylum, are charged with its internal management.

ART. 7. The governor, as commanding officer, will administer the affairs of his site of the Asylum, make the required returns to the board of commissioners, through the secretary of the board; submit annual estimates for the probable wants of the institution for each fiscal year, commencing on the 1st of July, and transmit the same, so as to reach the board on or before the 1st of October.

ART. 8. The deputy governor shall, in the absence of the governor, perform his duties, and at other times perform such ministerial functions, as the governor may require.

ART. 9. The secretary and treasurer shall keep a register of the inmates of the Asylum, stating the time of entrance, their names, places of birth, time of service, infirmity, and if married, what family they have, and the place of residence of the latter. He shall receive and keep an exact account of all supplies for the inmates, and of all moneys received from their labor, as well as such amount as may be received for expenditures of the Asylum. He shall make all disbursements under the direction of the governor, by whom the returns required will be countersigned and forwarded.

ART. 10. The governor of each separate site of the Asylum will organize its inmates into veteran companies, with a military organization, and appoint from among their non-commissioned officers, as a reward for meritorious conduct, who shall receive such pecuniary allowance as the board of commissioners may determine, and be subject to removal at the discretion of the governor, who is also authorized to stop the pocket money allowed other inmates, to confine them, and, with the approval of the executive committee, to eject them from the Asylum in cases of misconduct.

ART. 11. At each separate site of the Asylum, workshops will be pro-

vided, so that the inmates may labor at their trades, and perform any other work which the governor may require, and which they may be able to perform.

ART. 12. The Ordnance department and the Quartermaster's department will purchase such articles, made at the Asylum, as may be obtained at as little cost as elsewhere, and which may be required for the military service.

ART. 13. Chaplains, surgeons, and all necessary agents for the general and internal administration of the Asylum, excepting officers of the army, appointed from time to time, may be allowed such compensation for their services as the board of commissioners shall direct.

ART. 14. Invalid soldiers entitled to admission, who may be permitted by the commissioners, for special reasons, to reside out of the Asylum, may be allowed not to exceed twenty cents per day.

I certify that the foregoing articles for the general and internal direction of the Military Asylum were adopted at meetings of the board of commissioners, March 27 and May 30, 1851.

H. L. SCOTT,  
*Brevet Lieut. Colonel, U. S. A.,*  
*Secretary to Board of Commissioners.*

Approved June 16, 1851.

C. M. CONRAD,  
*Secretary of War.*

Official :

SCHUYLER HAMILTON,  
*Capt. by Brevet, U. S. A., Sec. of Board of Com.*

*Statement of funds of Military Asylum received and expended by Assistant Surgeon Benjamin King, United States army, treasurer, to include the 31st of December, 1851.*

1851.			1851.		
July 5	Received from treasury, being military contributions in Mexico, appropriated by the act of Congress of March 3, 1851 .....	\$118,791 19	July 5	Paid for \$118,000* Virginia coupon bonds, (6 per cent.) .....	\$118,098 32
Sept. 17 & Oct. 11.	Received from post fund, as appropriated by the act of March 3, 1851 .....	422 98	Oct. 20	Paid to Assistant Surgeon Charles McCormick, for expenditures on account of site of military asylum near New Orleans .....	3,000 00
Oct. 31	Received from Assistant Surgeon C. McCormick, of the appropriation of March 2, 1847, "for the benefit of discharged soldiers disabled by wounds," as provided for in the act of March 3, 1851....	15,797 52	Dec. 13	Paid to G. W. Riggs, jr., on account of farm purchased for site of military asylum, in District of Columbia .....	10,000 00
Oct. 27 to Dec. 22.	Received on account of pay, &c., due to the estates of deceased soldiers, as provided for by the act of March 3, 1851 .....	3,252 34	16	Paid to Major W. W. Mackall, secretary and treasurer, for expenditures on account of site of military asylum, in District of Columbia .....	600 00
Aug. 30	Received on account of pay, &c., due to the estates of deceased soldiers, as provided for by the act of March 3, 1851 .....	290 11	Apr. 1 to Dec. 22.	Paid for expenses incurred in examining sites, and for other contingencies .....	214 70
			Dec. 31	Balance in hands of treasurer. ....	641 11
		138,554 14			138,554 14

\* This sum invested and held for the use and benefit of Military Asylum.

BENJAMIN KING, *Assistant Surgeon, Treasurer Military Asylum.*