

*Schedule of papers accompanying the report of the Secretary of the Navy to the President of the United States.*

- No. 1. Estimate for the office of the Secretary of the Navy and the Bureau of the Navy Department.
2. Estimate for the expenses of the southwest executive building.
3. General estimate for the Navy.  
Detailed estimate: A 3. Report and estimate of the Bureau of Navy Yards and Docks.  
B 3. Report and estimate of the Bureau of Ordnance and Hydrography.  
C 3. Report and estimate of the Bureau of Construction, Equipment, and Repairs.  
D 3. Report and estimate of the Bureau of Provisions and Clothing.  
E 3. Report and estimate of the Bureau of Medicine and Surgery.  
F 3. Pay of officers waiting orders.
4. Estimate for the Marine Corps.
5. List of vessels in commission, their commanders and stations.
6. List of deaths in the Navy.
7. List of dismissions from the Navy.
8. List of resignations from the Navy.
9. Report of the Commissioner of Pensions.
10. Fourth Auditor's statement of the receipts and expenditures on account of the navy pension fund, from October 1, 1841, to September 30, 1842.
11. Professor Johnson's report of experiments on copper.
12. Expenditure of appropriation for the suppression of the slave-trade.



Bureau of Provisions and Clothing :			
For blank books, stationery, and binding	-	-	\$300
For miscellaneous items	-	-	150
			<u>450</u>
Bureau of Medicine and Surgery :			
For blank books, binding, and stationery	-	-	\$300
For miscellaneous items	-	-	150
			<u>450</u>

## RECAPITULATION.

Secretary's office	-	-	\$3,700
Bureau of Navy-yards and Docks	-	-	250
Bureau of Ordnance and Hydrography	-	-	250
Bureau of Construction, &c.	-	-	250
Bureau of Provisions and Clothing	-	-	450
Bureau of Medicine and Surgery	-	-	450
			<u>5,350</u>

Submitted : For arrearages of clerks' salary in the office of the late navy board - \$456 24

Estimate of the sums required for the support of the office of the Secretary of the Navy and the bureaux of the Navy Department, for the year ending 30th June, 1844 :

Secretary of the Navy	-	-	\$6,000
Clerks and messengers	-	-	13,350
Bureau of Navy-yards and Docks :			
Chief of bureau	-	-	3,500
Clerks, draughtsman, and messenger	-	-	4,900
Bureau of Ordnance and Hydrography :			
Chief of bureau	-	-	3,500
Clerks, draughtsmen, and messenger	-	-	5,900
Bureau of Construction, Equipment, and Repairs :			
Chief of bureau	-	-	3,000
Clerks, assistant constructor, &c., and messenger	-	-	6,100
Bureau of Provisions and Clothing :			
Chief of bureau	-	-	3,000
Clerks and messenger	-	-	4,100
Bureau of Medicine and Surgery :			
Chief of bureau	-	-	2,500
Clerks and messenger	-	-	2,700
			<u>58,550</u>

For contingent expenses of the office of the Secretary of the Navy and the  
bureaux of the Navy Department, viz.:

Secretary's office:

For blank books, binding, and stationery	-	-	-	-	\$500
For extra clerk-hire	-	-	-	-	4,000
For printing	-	-	-	-	300
For labor	-	-	-	-	350
For miscellaneous items	-	-	-	-	350
For newspapers and periodicals	-	-	-	-	200

6,000

Bureau of Navy-yards and Docks:

For contingent expenses	-	-	-	-	\$500
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Bureau of Ordnance and Hydrography:

For contingent expenses	-	-	-	-	\$500
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Bureau of Construction, &c.:

For blank books, stationery, &c.	-	-	-	-	\$200
For miscellaneous items	-	-	-	-	180
For labor	-	-	-	-	120

500

Bureau of Provisions and Clothing:

For blank books, stationery, and binding	-	-	-	-	\$400
For miscellaneous items	-	-	-	-	200

600

Bureau of Medicine and Surgery:

For blank books, binding, and stationery	-	-	-	-	\$400
For miscellaneous items	-	-	-	-	200

600

RECAPITULATION.

Secretary's office	-	-	-	-	\$6,000
Bureau of Navy-yards and Docks	-	-	-	-	500
Bureau of Ordnance and Hydrography	-	-	-	-	500
Bureau of Construction, &c.	-	-	-	-	500
Bureau of Provisions and Clothing	-	-	-	-	600
Bureau of Medicine and Surgery	-	-	-	-	600

8,700



## No. 2.

Estimate of sums required for the expenses of the southwest executive building, for the half year ending on the 30th June, 1843.

Superintendent -	-	-	-	-	-	-	\$125 00
Three watchmen, at \$365 per annum	-	-	-	-	-	-	543 00
Labor -	-	-	-	-	-	-	162 50
Fuel and light -	-	-	-	-	-	-	675 00
Miscellaneous items	-	-	-	-	-	-	575 00
							<u>2,080 50</u>

NOTE.—An additional sum of \$100, each, for the watchmen, for the half year is submitted, in consideration of their being required to watch day and night, to wit: from 3 o'clock, P. M., till relieved by the messengers of the Department, about 8 o'clock, A. M. When their salaries were formerly fixed at \$500, they were required to watch only from sunset till sunrise.

Estimate of sums required for the expenses of the southwest executive building, for the fiscal year ending on the 30th June, 1844.

Superintendent -	-	-	-	-	-	-	\$250
Three watchmen	-	-	-	-	-	-	1,095
Labor -	-	-	-	-	-	-	325
Fuel and Light	-	-	-	-	-	-	1,350
Miscellaneous items	-	-	-	-	-	-	1,150
							<u>4,170</u>

NOTE.—An additional sum of \$200, each, is submitted for the watchmen, in consideration of their being required to watch day and night, to wit: from 3 o'clock, P. M., till relieved by the messengers of the Department, about 8 o'clock, A. M. When their salaries were formerly fixed at \$500, they were required to watch only from sunset to sunrise.

## GENERAL ESTIMATES.

There will be required for the general service of the navy during the half year ending June 30, 1843, exclusive of the amount required for the marine corps, the sum of \$3,673,667 07, in addition to any balance that may remain in the Treasury on January 1, 1843.

	For the half year ending June 30, 1843.
1. For the pay of commission, warrant, petty officers, and seamen	\$1,476,569 50
2. For pay of superintendents, naval constructors, and all the civil establishments at the several yards	36,860 00
3. For provisions	553,769 50
4. For medicines and surgical instruments, hospital stores, and other expenses on account of the sick	57,030 00
5. For the increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission	950,000 00
6. For the improvement and necessary repairs of navy-yards, viz:	
Portsmouth, N. H.	15,510 40
Charlestown, Mass.	33,992 70
Brooklyn, N. Y.	40,000 00
Philadelphia, Pa.	9,950 00
Washington, D. C.	17,335 00
Gosport, Va.	34,200 00
Pensacola, Flo.	28,800 00
7. For hospital buildings and their dependancies, viz:	
Charlestown	1,500 00
Brooklyn	8,832 00
Norfolk	2,000 00
Pensacola	1,500 00
Philadelphia naval asylum	945 00
8. For magazines at—	
Charlestown	500 00
Brooklyn	350 00
Washington	250 00
Norfolk	350 00
9. For ordnance and ordnance stores	48,422 97
10. For contingent expenses that may accrue for the following purposes, viz: For the freight and transportation of materials and stores of every description; for wharfage and dockage, storage and rent, travelling expenses of officers and transportation of seamen; for house-rent to pursers, when duly authorized; for funeral expenses; for commissions, clerk-	

## No. 3—Continued.

	For the half year ending June 1843.
hire, office-rent, stationery and fuel to navy agents; for premiums and incidental expenses for recruiting; for apprehending deserters; for compensation to judges advocate; for per diem allowance to persons attending courts martial and courts of inquiry, or other services as authorized by law; for printing and stationery of every description, and for working the lithographic press; for books, maps, charts, mathematical and nautical instruments, chronometers, models, and drawings; for the purchase and repair of fire-engines and machinery; for the repair of steam-engines in navy-yards; for the purchase and maintenance of oxen and horses, and for carts, timber-wheels, and workmen's tools of every description; for postage of letters on public service; for pilotage, and towing ships of war; for taxes and assessments on public property; for assistance rendered to vessels in distress; for incidental expenses at navy-yards, not applicable to any other appropriation; for coal and other fuel, and for candles and oil for the use of navy-yards and shore stations; and for no other object or purpose whatever -	\$330,000 00
IV For contingent expenses for objects not herein before enumerated	25,000 00
	3,673,667 07

No. 3—Continued.

## GENERAL ESTIMATES.

There will be required for the general service of the navy during the year ending June 30, 1844, exclusive of the amount required for the marine corps, the sum of \$6,983,245 64, in addition to any balance that may remain in the Treasury on July 1, 1843.

	For the year ending June 30, 1844.	Appropriated for 1842.
1. For the pay of commission, warrant, petty officers, and seamen	\$2,953,139 00	\$2,335,000 00
2. For pay of superintendents, naval constructors, and all the civil establishments at the several yards	73,720 00	78,420 00
3. For provisions	1,104,539 00	720,000 00
4. For medicines and surgical instruments, hospital stores, and other expenses on account of the sick	43,967 00	30,000 00
5. For the increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission	1,900,000 00	2,000,000 00
6. For the improvement and necessary repairs of navy yards, viz:		
Portsmouth, N. H.	24,900 76	47,425 00
Charlestown, Mass.	71,909 70	29,000 00
Brooklyn, N. Y.	60,000 00	129,100 00
Philadelphia, Pa.	18,070 00	1,600 00
Washington, D. C.	26,597 00	15,300 00
Gosport, Va.	70,310 00	56,800 00
Pensacola, Flo.	63,091 00	35,300 00
7. For hospital buildings and their dependencies, viz:		
Charlestown, Mass.	1,300 00	3,960 00
Brooklyn, N. Y.	15,000 00	1,500 00
Norfolk, Va.	2,000 00	13,750 00
Pensacola, Flo.	2,448 25	2,000 00
Philadelphia naval asylum, Pa.	366 00	1,300 00
8. For magazines at—		
Charlestown, Mass.	1,000 00	
Brooklyn, N. Y.	350 00	
Washington, D. C.	250 00	
Norfolk, Va.	350 00	
9. For ordnance and ordnance stores	96,847 93	
10. For contingent expenses that may accrue for the following purposes, viz: For the freight and transportation of materials and stores of		

## No. 3—Continued.

	For the year ending June 30, 1844.	Appropriated for 1842.
every description; for wharfage and dockage, storage and rent, travelling expenses of officers, and transportation of seamen; for house-rent to pursers, when duly authorized; for funeral expenses; for commissions, clerk-hire, office-rent, stationery and fuel to navy agents; for premiums and incidental expenses for recruiting; for apprehending deserters; for compensation to judges advocate; for per diem allowance to persons attending courts martial and courts of inquiry, or other services as authorized by law; for printing and stationery of every description, and for working the lithographic press; for books, maps, charts, mathematical and nautical instruments, chronometers, models, and drawings; for the purchase and repair of fire-engines and machinery; for the repair of steam-engines in navy-yards; for the purchase and maintenance of oxen and horses, and for carts, timber-wheels, and workmen's tools of every description; for postage of letters on public service; for pilotage and towing ships of war; for taxes and assessments on public property; for assistance rendered to vessels in distress; for incidental expenses at navy-yards, not applicable to any other appropriation; for coal and other fuel, and for candles and oil for the use of navy-yards and shore stations; and for no other object or purpose whatever -	\$450,000 00	\$450,000 00
11. For contingent expenses for objects not hereinbefore enumerated -	3,000 00	3,000 00
	6,983,245 64	

A No. 3.

BUREAU OF YARDS AND DOCKS,  
*November 25, 1842.*

SIR: I have the honor to present to you, in conformity to the directions contained in your letter of the 28th ultimo, the estimates for the improvements of the navy-yards; for the repairs of all the buildings which may require them; for the prosecution of the work on the new dock at New York, if it should be deemed proper to recommence it; and for the support of their establishments, including all the civil officers attached to each. The estimates for the support of the navy hospitals, for the preservation of the magazines, and for the ordinary of the various yards, are also included.

The sums estimated for the yards for the first half of the ensuing year, and for the year beginning on the 1st July, 1843, and ending on the 30th June, 1844, are nearly in the same proportion as those for the present year, making an allowance for the additional period for which they are required.

The number of officers for duty in the yards, has been increased in order to insure a proper supervision of their duties; to secure a diligent and continual attention to the work to be performed, and to keep a careful watch by day and by night. To maintain, as far as practicable, their security, and to prevent theft and plunder, is another object of this increase, and a very important one. There is not now a sufficient force stationed at any of the yards for this purpose; and a police establishment for each, is much wanted; of what this police guard shall consist, may be a question for consideration.

At present, there is neither a sufficiency of watchmen or of marines; and the demand for the latter on board ship prevents the expectation of our receiving from that source an increase. The watchmen, as at present furnished, are the principal reliances, and their organization, if the establishment may be so termed, is defective and requires amendment. The number should be increased, and they should be called upon to serve, for a certain period of time, under such regulations and written agreements as would be binding on them for their whole time and services; if it should be your intention to continue them.

For the whole of the yards, the sum asked for the ensuing eighteen months is \$514,756 56. The amount asked for the present year, was \$504,428, making an excess of the former over the latter of only \$10,328 56; although the period for which the first named sum is required, is greater than that for the last named by one half. Of the above amount of \$514,756 56 for the period stated, the sum of \$50,000 is intended to be applied to the construction of the dock, which being so costly and so important a work, as to form a specific object of appropriation, and a subject of distinct expenditure, does not, therefore, fall under the regular head of improvements of navy-yards, for which estimates are annually made.

Beginning with the northernmost establishment, that of Portsmouth, New Hampshire, I proceed to state my views of each in general terms. The amount asked for it will be profitably laid out in the permanent improvements necessary to bring it up to a scale somewhat commensurate with the others, and to prepare it for carrying on expeditiously such work as may, from time to time, be deemed requisite. To do this the expenditures, after making provision for the repairs of all buildings and other works, are to be directed to a permanent quay-wall, a new wharf for the accommodation of vessels principally,

and to some smaller works, which will add to the convenience and despatch of business.

At Boston, the continuance of the boundary wall for the security of the yard, has become an object of importance, to preserve it from depredation, and to render it less accessible. The remaining objects to be commenced and accomplished, under this estimate, are also very requisite; and being in accordance with the approved plan, will do much to ensure expedition, economy, and safety, in the operations of the yard, and the preservation of materials.

For New York, it has been considered proper to preserve all the different buildings in repair, and to estimate for the erection or building of such works only, as are requisite for the current or daily duties of the yard. The want of a proper and approved plan, by which all the future improvements of this yard may be regulated, prevents the call for a greater expenditure. When that is authorized, which it is supposed will be ere long, in a future estimate, such works will be embraced as will be calculated to bring it up to an equality of accommodation with the other dock yards. The uncertainty of a permanent location, within the waters of New York harbor, has hitherto prevented this point from being settled. It is, however, presumed this will not much longer be a matter of doubt.

At Philadelphia, the principal object to be undertaken, is the extension and filling-in of the two principal wharves, which is rendered a work of indispensable necessity, by the accumulation of mud at their extremities, and the gradual shoaling of the water in their fronts, by the annual deposits of silt. These deposits are the consequence of the greater projection into the river, of the city wharves above or to the north of the navy-yard. The remaining expenditure will be confined to the preservation and repair of those objects which are in a state to require them.

For the Washington yard, it is proposed to erect an iron foundry, in which may be combined all the conveniences for castings and the making of steam engines, water tanks, chain cables, &c. This building, therefore, is of considerable importance, in point of economy and despatch. The present one is a mere temporary affair, by no means sufficient to the increased work; and is also most inconveniently situated. It was built, or converted to its present use, at a time when the demand for its services was by no means equal to the present exigencies. The wharf is also much needed; and experience shows that stone is a much cheaper material for its construction than wood; as the repairs, in a few years, would make it nearly equal in expense to that of the former material. The estimates for the other objects will be found, on reflection, to be equally necessary, including that for repairs, which last is much wanted at several points and parts of the yard.

At Norfolk the improvements are to consist of a continuation of the timber dock, which is not only intended for the deposit and soaking of timber, but for the admission of vessels of light draught of water, loaded with stores of the various kinds, intended for the preparation and equipment of vessels, as well as the different species of timber which are required. In connexion with this large work, is the very useful one of a stone wharf or quay-wall, to the eastern or water front of the yard, a portion of which, from the north building slip to the south end or corner of building slip and house B, has been finished, and includes three permanent launching slips. These having been solidly constructed on piles, and with great care, may last for centuries. To continue this wall from the north building slip, as far as the north corner, or

boundary, of the yard on that side, is a part of the work to be done under this item, as well as its continuance (on the south part of that which has, as before-mentioned, been finished) to the north side of timber dock. When this work is complete, to which it is expected the sum now asked will greatly contribute, there will then be an uninterrupted quay, extending from north to south of more than 900 feet. The erection of a new house, and the completion of a second, which are to be timber sheds and storehouses, form all the new works at present to be undertaken, with the exception of two small houses for the watchmen. The repairs of all the buildings, including painting, and the repairs which may be necessary for the dock, with the purchase and setting of some machinery for house number 36, in which the sawing, turning, and boring, are to be done for the whole establishment, comprise the remaining objects in this yard, for which an appropriation is asked for the ensuing prescribed periods.

For Pensacola, as that yard is less advanced in conveniencies than the others; it has been considered proper, to ask for more than has lately been required for it. The necessity for a large and commodious wharf at this place, is so great, that in addition to the sum allotted to that object, out of the fund this year provided for improvements, it has seemed to be essential that a considerable addition should be made for this item. What is now asked for will, it is presumed, be sufficient. The houses for officers, now asked for in addition, are also much wanted for the accommodation of those who are required to do daily, and even night duty, without the means of procuring comfortable lodgings, if indeed any can be procured at all.

The carrying of good wholesome water into the yard, for the use of our public vessels and for its inmates, will be attended with great advantages. Upon this, a subject of such obvious importance, it is unnecessary to enlarge. It has been hitherto, and is yet, a great desideratum at that establishment, and felt very much by the crews of all the cruisers resorting to it for a supply, as it is difficult to procure it good, and then not without much labor. The other objects, although requiring much smaller sums to complete or accomplish them, are yet very necessary.

Before closing this report, it may be proper to state, that the items for the repair of the different hospitals, have been made with a due regard to the urgency of the wants of those establishments; and the propriety of retaining them in a state capable of accommodating, in security and comfort, those who may need their services.

For the magazines, of which there is one at each of the Boston, New York, Washington, and Norfolk yards, a small sum has been required, sufficient for the purpose of keeping them in repair, improving their arrangement, and providing for unlooked-for damage by storms or other accidents, &c., &c.

In making provision for the proposed improvements, care has been taken to preserve inviolate, the arrangements made by the officers of the commission of 1827 and 1828, for the examination and digestion of a suitable plan for each yard, according to which, all the buildings, slips, walls, quays, and docks, are to be erected or constructed. Such plans were formally approved by the President, in November, 1828, and have been implicitly followed since, with one or two slight variations, which it was found necessary to make to suit situations and circumstances, as experience and more particular information rendered them necessary. A revision of those will be made in the course of the winter and spring, by which you will be enabled to ascer-



tain if any further change should be requisite, and see at one glance all that has been done, and all that is to be done to complete them. It is believed that little change, if any, will be necessary, as everything was settled, after great deliberation, consideration, and personal observation. The exception to this, is the New York yard, of which a plan was made by the late able civil engineer, L. Baldwin, Esquire, without having been submitted, however, to the commissioners, who determined the other plans, as it was not then known what spot might be ultimately fixed on as its site.

The question of further improving and increasing this yard, and to what extent, will be a subject for your decision, after all the requisite information shall have been obtained and laid before you. To enable you to do this with certainty, it is my intention in a short time to have a map on a large scale made, designating all the existing, as well as the proposed works, and laying down conspicuously its boundaries. The present limits, when those parts now marshy or overflowed are converted into solid ground, will, it is believed, be sufficiently large, at least for many years.

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

L. WARRINGTON,

*Chief of Bureau.*

Hon. A. P. UPSHUR,  
*Secretary of the Navy.*

BUREAU OF YARDS AND DOCKS,  
November 25, 1842.

SIR: I have the honor to submit, on a separate sheet, the estimate of the amount necessary to the support of this bureau for the ensuing eighteen months, made for the periods of the first half of the next year, and for the twelve months following, as directed.

I beg leave to call your attention to the salary of the chief clerk of this bureau, which has been the *only* salary of the clerks of the late Navy Board that is reduced by the act for the reorganization of the Navy Department. Under the late law it was \$1,600; and I understand it was the intention of the committee which reported the bill to continue it as it was originally; but by an error or misapprehension in copying the bill for its engrossment, it was put down at the present rate.

If it can be now remedied, and it is presumed it can be, it will be but an act of justice to one whose labors are certainly increased, although his income is curtailed.

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

L. WARRINGTON,

*Chief of Bureau.*

Hon. A. P. UPSHUR,  
*Secretary of the Navy,*

Estimate of the sums required for the support of the Bureau of Yards and Docks for the half year ending June 30, 1843, and for the year beginning July 1, 1843, and ending June 30, 1844, under act of Congress, approved August 31, 1842.

Commodore L. Warrington, chief of bureau, at \$3,500 per annum,	\$1,750
W. P. S. Sanger, civil engineer,	2,000 " 1,000
Geo. de La Roche, draughtsman,	1,000 " 500
William. G. Ridgely, chief clerk,	1,400 " 700
Stephen Gough, clerk,	1,000 " 500
D. H. Haskell, clerk,	800 " 400
S. A. Hutchins, messenger,	700 " 350
Contingent expenses	250
	5,450
The amount that will be required for this bureau, as above organized, for the year commencing July 1, 1843, and ending June 30, 1844, will be	\$10,900

BUREAU OF YARDS AND DOCKS, Nov. 25, 1842.

L. WARRINGTON,  
*Chief of Bureau.*

Schedule of the papers accompanying the report of the Chief of the Bureau of Yards and Docks to the Secretary of the Navy, November 25, 1842:

- Y. & D. A.—General estimate, showing the amount required for the half year ending June 30, 1843.
- Y. & D. B.—General estimate, showing the amount required for the year ending June 30, 1844.
- Y. & D. No. 1.—Receiving vessels in detail, being part of the 1st item in the general estimates, showing the amount required for the half year ending June 30, 1843, and that for the whole year ending June 30, 1844.
- Y. & D. No. 2.—Recruiting stations in detail, being a part of the 1st item in the general estimate, showing the amount required for the half year ending June 30, 1843, and that for the year ending June 30, 1844.
- Y. & D. No. 3.—Officers and others at yards and stations in detail for the year ending June 30, 1844; note A, at the end of this estimate, being a part of the 1st item in the general estimate; and note B, showing the amount of the 2d item in the general estimate.
- Y. & D. No. 4.—Officers and others at yards and stations for the half year ending June 30, 1843.—See Y. & D. No. 3, for detail.
- Y. & D. No. 5.—Improvements and repairs of navy-yards: Column A, showing the amount required for the half year ending June 30, 1843; and column B, that required for the year ending June 30, 1844.
- Y. & D. No. 6.—Improvements and repairs of hospitals and magazines: Column A, showing the amount required for the half year ending June 30, 1843; and column B, that required for the year ending June 30, 1844.
- Y. & D. No. 7.—Statement showing the sums which make up the 1st and 2d items in the general estimate marked Y. & D. A.
- Y. & D. No. 8.—Statement showing the sums which make up the 1st and 2d items in the general estimate marked Y. & D. B.

## Y. &amp; D.—A.

## GENERAL ESTIMATE.

*Estimated amounts that will be required for the naval service, for the half year ending 30th June, 1843, so far as coming under the cognizance of the Bureau of Yards and Docks.*

1st. For the pay of commission, warrant, and petty officers and seamen—[See paper marked Y. & D., No. 7]	-	\$266,998 00
2d. For pay of superintendents, naval constructors, and all the civil establishments at the several yards and stations—[See paper marked Y. & D., No. 7]	-	36,860 00
3d. For the improvements and necessary repairs of navy yards, viz—[See Y. & D., No. 5, column A]:		
Portsmouth, N. H.	\$15,510 40	
Charlestown, Mass.	33,992 70	
Brooklyn, N. Y.	40,000 00	
Philadelphia	9,950 00	
Washington	17,335 00	
Gosport, Va.	34,200 00	
Pensacola	28,800 00	
		179,788 10
4th. For hospital buildings and their dependencies, viz—[See Y. & D., No. 6, column A]:		
Charlestown, Mass.	1,500 00	
Brooklyn, N. Y.	8,832 00	
Norfolk, Va.	2,000 00	
Pensacola	1,500 00	
Philadelphia asylum	945 00	
		14,777 00
5th. [See Y. & D., No. 6, column A.] For magazines at—		
Charlestown, Mass.	500 00	
Brooklyn	350 00	
Washington	250 00	
Norfolk	350 00	
		1,450 00
6th. For contingent expenses that may accrue for the following purposes, viz: For the freight and transportation of materials and stores for yards and docks; for printing and stationery; for books, maps, models, and drawings; for the purchase and repair of fire-engines, and for machinery of every description; for the re-		

## Y. &amp; D.—A—Continued.

pair of steam-engines in yards; for the purchase and maintenance of oxen and horses; for carts, timber wheels, and workmen's tools of every description; for postage of letters on public service; for coals and other fuel; and for candles and oil, for the use of navy-yards and shore stations, and for furniture; for incidental labor at navy-yards, not applicable to any other appropriation, and for no other object or purpose whatever	-	\$45,000 00
		544,873 10

BUREAU OF YARDS AND DOCKS,  
November 25, 1842.

L. WARRINGTON,  
Chief of Bureau.

## Y. &amp; D.—B.

## GENERAL ESTIMATE.

*Estimated amounts that will be required for the naval service, for the year ending 30th June, 1844, so far as coming under the cognizance of the Bureau of Yards and Docks.*

1st. For the pay of commission, warrant, and petty officers and seamen—[See paper marked Y. & D.—No. 8]	-	\$533,996 00
2d. For pay of superintendents, naval constructors, and all the civil establishments at the several yards and stations—[See paper marked Y. & D.—No. 8]	-	73,720 00
3d. For the improvements and necessary repairs of navy-yards, viz—[See Y. & D.—No. 5, column B]:		
Portsmouth, N. H.	-	\$24,900 76
Charlestown, Mass.	-	71,999 70
Brooklyn, N. Y.	-	60,000 00
Philadelphia	-	18,070 00
Washington	-	26,597 00
Gosport, Va.	-	70,310 00
Pensacola	-	63,091 00
		334,968 46

## Y. &amp; D.—B—Continued.

4th. For hospital buildings and their dependancies, viz—[See Y. & D.—No. 6, column B]:		
Charlestown - - -	\$1,300 00	
Brooklyn - - -	15,000 00	
Norfolk - - -	2,000 00	
Pensacola - - -	2,448 25	
Philadelphia asylum - -	366 00	
		\$21,114 25
5th. [See Y. & D.—No. 6, column B.]		
For magazines at—		
Charlestown - - -	1,000 00	
Brooklyn - - -	350 00	
Washington - - -	250 00	
Norfolk - - -	350 00	
		1,950 00
6th. For contingent expenses that may accrue for the following purposes, viz: For the freight and transportation of materials and stores for yards and docks; for printing and stationery; for books, maps, models, and drawings; for the purchase and repair of fire-engines and machinery of every description; for the repair of steam-engines in yards; for the purchase and maintenance of oxen and horses; for carts, timber wheels, and workmen's tools of every description; for postage of letters on public service; for coals and other fuel; and for candles and oil for the use of navy-yards and shore stations, and for furniture; for incidental labor at navy-yards, not applicable to any other appropriation, and for no other object or purpose whatever		
		90,000 00
		1,055,748 71

BUREAU OF YARDS AND DOCKS,  
November 25, 1842.

L. WARRINGTON,  
Chief of Bureau.

## Y. &amp; D.—No. 1.

## RECEIVING VESSELS.

*Estimate of the number and pay of officers and others required for seven receiving vessels for the half-year ending 30th June, 1843, with an additional estimate for the year commencing on the 1st July, 1843, and ending 30th June, 1844, if no alteration is made in the number of vessels, or in their respective complements.*

	Boston.	New York.	Philadelphia.	Baltimore.	Norfolk.	New Orleans.	Charleston.	Total.	Aggregate amount.
Captains.....	1	1	.....	.....	1	.....	.....	3	\$5,250
Commanders.....	1	1	1	1	1	1	1	7	7,350
Lieutenants.....	4	4	2	2	4	2	2	20	15,000
Masters.....	1	1	1	1	1	1	1	7	3,500
Pursers.....	1	1	.....	.....	1	.....	.....	3	3,750
Surgeons.....	1	1	.....	.....	1	.....	.....	3	3,600
Assistant surgeons.....	1	1	.....	.....	1	.....	.....	3	1,800
Chaplain.....	1	1	.....	.....	1	.....	.....	3	1,800
Passed midshipmen.....	3	3	.....	.....	3	.....	.....	9	3,375
Midshipmen.....	6	6	3	3	6	3	3	30	5,250
Clerks.....	1	1	.....	.....	1	.....	.....	3	750
Boatswains.....	1	1	.....	.....	1	.....	.....	3	1,200
Gunners.....	1	1	.....	.....	1	.....	.....	3	1,200
Carpenters.....	1	1	.....	.....	1	.....	.....	3	1,200
Sailmakers.....	1	1	.....	.....	1	.....	.....	3	1,200
Yeomen.....	1	1	.....	.....	1	.....	.....	3	720
Boatswain's mates.....	2	2	1	1	2	1	1	10	1,140
Gunner's mates.....	1	1	.....	.....	1	.....	.....	3	342
Carpenter's mates.....	1	1	1	1	1	1	1	7	798
Quartermasters.....	3	3	.....	.....	3	.....	.....	9	972
Masters-at-arms.....	1	1	.....	.....	1	.....	.....	3	324
Ship's corporal.....	1	1	.....	.....	1	.....	.....	3	270
Ship's stewards.....	1	1	1	1	1	1	1	7	864
Officers' steward.....	2	2	1	1	2	1	1	10	1,080
Surgeon's steward.....	1	1	.....	.....	1	.....	.....	3	324
Ship's cooks.....	1	1	1	1	1	1	1	7	756
Officers' cooks.....	2	2	1	1	2	1	1	10	900
Captains of hold.....	1	1	.....	.....	1	.....	.....	3	270
Seamen.....	30	30	2	2	30	4	2	100	7,200
Ordinary seamen.....	70	70	4	4	90	9	4	231	13,860
Landsmen and apprentices.....	100	100	.....	.....	100	4	.....	304	12,768
Total.....	243	243	19	19	243	30	19	816	98,813

Additional estimate for the year commencing on the 1st July, 1843, and ending on the 30th June, 1844, if no alteration is made in the number of vessels, or in the number and grade of officers and others attached to each, as above, \$197,626.

BUREAU OF YARDS AND DOCKS,  
November 25, 1842.

L. WARRINGTON,  
Chief of Bureau.

## Y. &amp; D.—No. 2.

## RECRUITING STATIONS.

*Estimate for the pay of officers attached to recruiting stations for the half-year ending 30th June next, with an additional estimate for the year commencing 1st July, 1843, ending 30th June, 1844, if no alteration is made in the number of stations.*

	Boston.	New York.	Philadelphia.	Baltimore.	Norfolk.	New Orleans.	Charleston.	Total.	Amount.
Commandants .....	1	1	1	1	1	1	1	7	\$7,350
Lieutenants .....	2	2	2	2	2	2	2	14	10,500
Surgeons .....	1	1	1	1	1	1	1	7	6,125
Midshipmen .....	2	2	2	2	2	2	2	14	2,450
Total .....	6	6	6	6	6	6	6	42	26,425.

Additional estimate for the year ending 30th June, 1844, if no alteration is made in the number of stations or number of officers attached to each station, as above, \$52,850.

BUREAU OF YARDS AND DOCKS,  
November 25, 1842.

L. WARRINGTON,  
Chief of Bureau.

## Y. &amp; D.—No. 3.

*Estimate of the pay of officers and others at navy yards and stations for the year commencing 1st July, 1843, and ending 30th June, 1844.*

PORTSMOUTH, N. H.	Pay.	Aggregate.
<i>Naval.</i>		
1 captain	\$3,500	
1 commander	2,100	
1 lieutenant	1,500	
1 master	1,000	
3 passed midshipmen, at \$750 each	2,250	
3 midshipmen, at \$350 each	1,050	
1 surgeon	1,800	
1 boatswain	700	
1 gunner	700	

## Y. &amp; D.—No. 3—Continued.

PORTSMOUTH, N. H.—Continued.	Pay.	Aggregate.
1 carpenter . . . . .	\$700	
1 sailmaker . . . . .	700	
1 purser . . . . .	2,000	
1 steward, assistant to purser . . . . .	360	
		\$18,360
<i>Ordinary.</i>		
1 lieutenant . . . . .	1,500	
1 carpenter's mate . . . . .	228	
6 seamen, at \$144 each . . . . .	864	
12 ordinary seamen, at \$120 . . . . .	1,440	
		4,032
<i>Civil.</i>		
1 storekeeper . . . . .	1,400	
1 naval constructor . . . . .	2,300	
1 foreman and inspector of timber . . . . .	700	
1 clerk to the yard . . . . .	900	
1 clerk to the commandant . . . . .	900	
1 clerk to the storekeeper . . . . .	750	
1 clerk to the master builder . . . . .	400	
1 porter . . . . .	300	
		7,650
Total . . . . .	—	30,048
BOSTON.		
<i>Naval.</i>		
1 captain . . . . .	\$3,500	
1 commander . . . . .	2,100	
4 lieutenants, at \$1,500 each . . . . .	6,000	
2 masters, at \$1,000 each . . . . .	2,000	
1 surgeon . . . . .	1,800	
1 assistant surgeon . . . . .	950	
1 chaplain . . . . .	1,200	
1 professor . . . . .	1,200	
4 passed midshipmen, at \$750 each . . . . .	3,000	
3 midshipmen, at \$350 each . . . . .	1,050	
1 boatswain . . . . .	700	
1 gunner . . . . .	700	
1 carpenter . . . . .	700	
1 sailmaker . . . . .	700	
1 purser . . . . .	2,500	
1 steward . . . . .	216	
1 steward, assistant to purser . . . . .	360	
		\$28,676



## Y. &amp; D.—No. 3—Continued.

BOSTON—Continued.	Pay.	Aggregate.
<i>Ordinary.</i>		
2 lieutenants, at \$1,500 each	\$3,000	
1 master	1,000	
3 midshipmen, at \$350 each	1,050	
1 boatswain	700	
1 gunner	700	
1 carpenter	700	
4 carpenter's mates (3 as calkers) at \$228 each	912	
2 boatswain's mates, at \$228 each	456	
14 seamen, at \$144 each	2,016	
36 ordinary seamen, at \$120 each	4,320	
		\$14,654
<i>Hospital.</i>		
1 surgeon	1,750	
2 assistant surgeons	1,900	
1 steward	360	
2 nurses, at \$120 each } when the number of sick	240	
2 washers, at \$96 each } shall require them	192	
1 cook	144	
		4,566
<i>Civil.</i>		
1 storekeeper	1,700	
1 naval constructor	2,300	
1 measurer and inspector of timber	1,050	
1 clerk to the yard	900	
1 clerk to the commandant	900	
1 clerk (2d) to the commandant	750	
1 clerk to the storekeeper	900	
1 clerk (2d) to the storekeeper	450	
1 clerk to the naval constructor	650	
1 keeper of magazine	480	
1 porter	300	
		10,380
<b>Total</b>		<b>59,496</b>

NOTE.—The surgeon and assistant surgeon of the yard are to be required to attend to the marines also.

## Y. &amp; D.—No. 3—Continued.

	NEW YORK.	Pay.	Aggregate.
<i>Naval.</i>			
1 captain	- - - - -	\$3,500	
1 commander	- - - - -	2,100	
4 lieutenants, at \$1,500 each	- - - - -	6,000	
2 masters, at \$1,000 each	- - - - -	2,000	
1 surgeon	- - - - -	1,800	
1 assistant surgeon	- - - - -	950	
1 chaplain	- - - - -	1,200	
1 professor	- - - - -	1,200	
4 passed midshipmen, at \$750 each	- - - - -	3,000	
3 midshipmen, at \$350 each	- - - - -	1,050	
1 boatswain	- - - - -	700	
1 gunner	- - - - -	700	
1 carpenter	- - - - -	700	
1 sailmaker	- - - - -	700	
1 purser	- - - - -	2,500	
1 steward	- - - - -	216	
1 steward, assistant to purser	- - - - -	360	
			\$28,676
<i>Ordinary.</i>			
2 lieutenants, at \$1,500 each	- - - - -	3,000	
1 master	- - - - -	1,000	
3 midshipmen, at \$350 each	- - - - -	1,050	
1 boatswain	- - - - -	700	
1 gunner	- - - - -	700	
1 carpenter	- - - - -	700	
4 carpenter's mates (3 as calkers) at \$228 each	- - - - -	912	
2 boatswain's mates, at \$228 each	- - - - -	456	
14 seamen, at \$144 each	- - - - -	2,016	
36 ordinary seamen, at \$120 each	- - - - -	4,320	
			14,864
<i>Hospital.</i>			
1 surgeon	- - - - -	1,750	
2 assistant surgeons, at \$950 each	- - - - -	1,900	
1 steward	- - - - -	360	
2 nurses, at \$120 each } when the number of sick {	- - - - -	240	
2 washers, at \$96 each } shall require them {	- - - - -	192	
1 cook	- - - - -	144	
			4,586
<i>Civil.</i>			
1 storekeeper	- - - - -	1,700	
1 naval constructor	- - - - -	2,300	

## Y. &amp; D.—No. 3—Continued.

NEW YORK—Continued.	Pay.	Aggregate.
1 measurer and inspector of timber - - -	\$1,050	
1 clerk to the yard - - -	900	
1 clerk to the commandant - - -	900	
1 clerk (2d) to the commandant - - -	750	
1 clerk to the storekeeper - - -	900	
1 clerk (2d) to the storekeeper - - -	450	
1 clerk to the naval constructor - - -	650	
1 keeper of magazine - - -	480	
1 porter - - -	300	
		\$10,380
Total - - -	-	58,496

NOTE.—The surgeon and assistant surgeon of the yard are also to be required to attend to the marines.

PHILADELPHIA.	Pay.	Aggregate.
<i>Naval.</i>		
1 captain - - -	\$3,500	
1 commander - - -	2,100	
2 lieutenants - - -	3,000	
1 master - - -	1,000	
1 surgeon - - -	1,800	
1 assistant surgeon - - -	950	
3 passed midshipmen, at \$750 each - - -	2,250	
2 midshipmen, at \$350 each - - -	700	
1 chaplain - - -	1,200	
1 boatswain - - -	700	
1 gunner - - -	700	
1 carpenter - - -	700	
1 purser - - -	2,000	
1 steward - - -	216	
		\$20,816
<i>Ordinary.</i>		
1 lieutenant - - -	1,500	
1 boatswain's mate - - -	228	
4 seamen, at \$144 each - - -	576	
12 ordinary seamen, at \$120 each - - -	1,440	
		3,744

## Y. &amp; D.—No. 3—Continued.

PHILADELPHIA—Continued.		Pay.	Aggregate.
<i>Naval Asylum and Hospital.</i>			
1 captain	- - - - -	\$3,500	\$9,536
1 lieutenant	- - - - -	1,500	
1 secretary	- - - - -	900	
1 surgeon	- - - - -	1,750	
1 assistant surgeon	- - - - -	950	
1 steward	- - - - -	360	
2 nurses, at \$120 each	} To attend to the hospital also, if required -	240	
2 washers, at \$96 each		192	
1 cook		144	
<i>Civil.</i>			
1 storekeeper	- - - - -	1,250	7,700
1 naval constructor	- - - - -	2,300	
1 inspector and measurer of timber	- - - - -	900	
1 clerk to the yard	- - - - -	900	
1 clerk to the commandant	- - - - -	900	
1 clerk to the storekeeper	- - - - -	750	
1 clerk to the naval constructor	- - - - -	400	
1 porter	- - - - -	300	
Total			41,796

NOTE.—The surgeon and assistant surgeon of the yard are also required to attend to the receiving vessel and to the marines.

WASHINGTON.		Pay.	Aggregate.
<i>Naval.</i>			
1 captain	- - - - -	\$3,500	
1 commander	- - - - -	2,100	
2 lieutenants, at \$1,500 each	- - - - -	3,000	
1 master	- - - - -	1,000	
1 surgeon	- - - - -	1,800	
1 assistant surgeon	- - - - -	950	
3 passed midshipmen, at \$750 each	- - - - -	2,250	
2 midshipmen, at \$350 each	- - - - -	700	
1 chaplain	- - - - -	1,200	

## Y. &amp; D.—No. 3—Continued.

WASHINGTON—Continued.	Pay.	Aggregate.
1 boatswain - - - - -	\$700	\$21,536
1 gunner - - - - -	700	
1 carpenter - - - - -	700	
1 purser - - - - -	2,000	
1 steward - - - - -	216	
1 steward, assistant to purser - - - - -	360	
1 steward to hospital - - - - -	360	
<i>Ordinary.</i>		
1 lieutenant - - - - -	1,500	4,500*
1 boatswain's mate - - - - -	228	
1 carpenter's mate - - - - -	228	
6 seamen, at \$144 each - - - - -	864	
14 ordinary seamen, at \$120 each - - - - -	1,680	
<i>Civil.</i>		
1 storekeeper - - - - -	1,700	9,180
1 inspector and measurer of timber - - - - -	900	
1 clerk to the yard - - - - -	900	
1 clerk to the commandant - - - - -	900	
1 clerk (2d) to the commandant - - - - -	750	
1 clerk to the storekeeper - - - - -	750	
1 master camboose maker and plumber - - - - -	1,250	
1 chain cable and anchor maker - - - - -	1,250	
1 keeper of magazine - - - - -	480	
1 porter - - - - -	300	
Total - - - - -	-	35,216

NOTE.—The surgeon and assistant surgeon of the yard are also required to attend to the hospital when necessary.

NORFOLK.	Pay.	Aggregate.
<i>Naval.</i>		
1 captain - - - - -	\$3,500	
1 commander - - - - -	2,100	
4 lieutenants, at \$1,500 each - - - - -	6,000	
2 masters, at \$1,000 each - - - - -	2,000	

Y. & D.—No. 3—Continued.

NORFOLK—Continued.	Pay.	Aggregate.	
1 surgeon - - - - -	\$1,800		
1 assistant surgeon - - - - -	950		
1 chaplain - - - - -	1,200		
1 professor - - - - -	1,200		
4 passed midshipmen, at \$750 each - - - - -	3,000		
3 midshipmen, at \$350 each - - - - -	1,050		
1 boatswain - - - - -	700		
1 gunner - - - - -	700		
1 carpenter - - - - -	700		
1 sailmaker - - - - -	700		
1 purser - - - - -	2,500		
1 steward - - - - -	216		
1 steward, assistant to purser - - - - -	360		
<i>Ordinary.</i>			\$28,676
2 lieutenants, at \$1,500 each - - - - -	3,000		
1 master - - - - -	1,000		
3 midshipmen, at \$350 each - - - - -	1,050		
1 boatswain - - - - -	700		
1 gunner - - - - -	700		
1 carpenter - - - - -	700		
4 carpenter's mates (3 as calkers) at \$228 each - - - - -	912		
2 boatswain's mates, at \$228 each - - - - -	456		
14 seamen, at \$144 each - - - - -	2,016		
36 ordinary seamen, at \$120 each - - - - -	4,320		
<i>Hospital.</i>		14,854	
1 lieutenant - - - - -	1,800		
1 surgeon - - - - -	1,750		
2 assistant surgeons, at \$950 each - - - - -	1,900		
1 steward - - - - -	360		
2 nurses, at \$120 each } when number of sick } 2 washers, at \$96 each } shall require them }	240		
	192		
1 cook - - - - -	144		
<i>Civil.</i>		6,386	
1 storekeeper - - - - -	1,700		
1 naval constructor - - - - -	2,300		
1 inspector and measurer of timber - - - - -	1,050		
1 clerk to the yard - - - - -	900		
1 clerk to the commandant - - - - -	900		
1 clerk (2d) to the commandant - - - - -	750		
1 clerk to the storekeeper - - - - -	900		

## Y. &amp; D.—No. 3—Continued.

NORFOLK—Continued.	Pay.	Aggregate.
1 clerk (2d) to the storekeeper - - -	\$450	
1 clerk to the naval constructor - - -	650	
1 keeper of magazine - - - - -	480	
1 porter - - - - -	300	
		\$10,380
Total - - - - -	-	60,296

NOTE.—The surgeon and assistant surgeon of the yard are also to be required to attend to the marines.

PENSACOLA.	Pay.	Aggregate.
<i>Naval.</i>		
1 captain - - - - -	\$3,500	
1 commander - - - - -	2,100	
3 lieutenants, at \$1,500 each - - -	4,500	
1 master - - - - -	1,000	
1 surgeon - - - - -	1,800	
1 assistant surgeon - - - - -	950	
1 chaplain - - - - -	1,200	
3 passed midshipmen, at \$750 each - -	2,250	
3 midshipmen, at \$350 each - - - -	1,050	
1 boatswain - - - - -	700	
1 gunner - - - - -	700	
1 carpenter - - - - -	700	
1 sailmaker - - - - -	700	
1 purser - - - - -	2,500	
1 steward - - - - -	216	
		\$23,866
<i>Ordinary.</i>		
1 lieutenant - - - - -	1,500	
1 carpenter - - - - -	700	
1 carpenter's mate - - - - -	228	
1 boatswain's mate - - - - -	228	
10 seamen, at \$144 each - - - - -	1,440	
40 ordinary seamen, at \$120 each - -	4,800	
		8,996
<i>Hospital.</i>		
1 surgeon - - - - -	1,750	
2 assistant surgeons - - - - -	1,900	

Y. & D.—No. 3—Continued.

PENSACOLA—Continued.		Pay.	Aggregate.
1 steward	- - - - -		
2 nurses, at \$120 each	} when number of sick } } shall require them }	\$360	
2 washers, at \$96 each		240	
1 cook	- - - - -	192	
		144	
<i>Civil.</i>			
1 naval constructor	- - - - -	1,500	
1 storekeeper	- - - - -	1,700	
1 clerk to the yard	- - - - -	900	
1 clerk to the commandant	- - - - -	900	
1 clerk (2d) to the commandant	- - - - -	750	
1 clerk to the storekeeper	- - - - -	750	
1 clerk (2d) to the storekeeper	- - - - -	450	
1 porter	- - - - -	300	
			7,250
<b>Total</b>	- - - - -	-	<b>44,598</b>

NOTE.—The surgeon and assistant surgeon of the yard are also required to attend to the marines and the receiving vessel, if one should be stationed near the yard, and to such persons in the yard as the commander may direct.

BALTIMORE.		Pay.	Aggregate.
1 captain	- - - - -	\$3,500	
1 lieutenant	- - - - -	1,500	
1 surgeon	- - - - -	1,500	
1 purser	- - - - -	1,500	
1 clerk	- - - - -	500	
			\$8,500
CHARLESTON.			
1 captain	- - - - -	3,500	
1 lieutenant	- - - - -	1,500	
1 surgeon	- - - - -	1,500	
1 purser and storekeeper	- - - - -	1,500	
			8,000



## Y. &amp; D.—No. 3—Continued.

FOR DUTY AT WASHINGTON OR ON GENERAL DUTY.	Pay.	Aggregate.
1 chief naval constructor - - -	\$3,000	\$5,500
1 principal steam engineer - - -	2,500	
SACKETT'S HARBOR.		
1 master - - - - -	-	1,000
LAKE ERIE.		
1 naval constructor - - - - -	-	2,300
FOREIGN STATIONS.		
1 storekeeper at Mahon - - - - -	1,500	3,000
1 storekeeper at Rio de Janeiro - - - - -	1,500	

## RECAPITULATION.

	Naval.	Ordinary.	Hospital.	Civil.	Aggregate.
Portsmouth, N. H. ....	\$18,360	\$4,032	.....	\$7,650	\$30,042
Boston .....	28,676	14,854	\$4,586	10,380	58,496
New York .....	28,676	14,854	4,586	10,380	58,496
Philadelphia .....	20,816	3,744	9,536	7,700	41,796
Washington .....	21,536	4,500	.....	9,180	35,216
Norfolk .....	28,676	14,854	6,386	10,380	60,296
Pensacola .....	23,866	8,896	4,586	7,250	44,598
Baltimore .....	8,000	.....	.....	500	8,500
Charleston .....	8,000	.....	.....	.....	8,000
On duty at Washington .....	.....	.....	.....	5,500	5,500
Sackett's Harbor .....	1,000	.....	.....	.....	1,000
Lake Erie .....	.....	.....	.....	2,300	2,300
Foreign stations .....	.....	.....	.....	3,000	3,000
	187,606	65,734	29,680	74,220	357,240

## Y. &amp; D.—No. 3—Continued.

NOTE A.—The naval, ordinary, and hospital branches of the foregoing estimates, form a part of the first item in the general estimates for the pay of commission, warrant, and petty officers and seamen, for the *year* ending 30th June, 1844, and amount to the sum of - - - \$283,520

NOTE B.—The civil branch of the foregoing estimate, embracing naval constructors, storekeepers, &c., forms the second item in the general estimate for the pay of superintendents, &c., for the *year* ending 30th June, 1844, and amounts to the sum of 73,720

357,240

BUREAU OF YARDS AND DOCKS, *November 25, 1842.*

L. WARRINGTON,  
*Chief of Bureau.*

## Y. &amp; D.—No. 4.

The foregoing estimates show the amount required for the support of the yards and stations for the year ending the 30th of June, 1844. One half the amount will, therefore, be required for the same object, for the half-year ending the 30th of June, 1843, viz. :

For the naval, ordinary, and hospital branches, which form a part of the first item in the general estimate, marked Y. & D.—A - - - \$141,760

For the civil branch, embracing naval constructors, storekeepers, &c., which makes the second item in the general estimate, marked Y. & D.—A - - - 36,860

178,620

BUREAU OF YARDS AND DOCKS,  
*November 25, 1842.*

L. WARRINGTON,  
*Chief of Bureau.*

## Y. &amp; D.—No. 5.

*Estimate of the amounts that will be required for making the proposed improvements and repairs in the several navy-yards up to the 30th of June, 1844, showing in separate columns the amount estimated for the half-year ending the 30th of June, 1843, and that for the year commencing on the 1st of July, 1843, and ending on the 30th of June, 1844.*

	A. For the half-year ending 30th of June, 1843.	B. For the year ending 30th of June, 1844.	Aggregate amount to 30th of June, 1844.
<b>NAVY-YARD AT PORTSMOUTH, NEW HAMPSHIRE.</b>			
For continuing quay wall .....	\$8,000	\$18,014 76	\$26,014 76
For continuing wall of site 22 .....	2,094 40	- -	2,094 40
For rebuilding east wall of launching slip number one, and portable bridge.....	3,000	2,600	5,600
For repairs of all kinds, filling in low ground, &c .....	2,416	4,286	6,702
	15,510 40	24,900 76	40,411 16
<b>NAVY-YARD AT BOSTON.</b>			
For raising boundary wall northwest side of the yard .....	\$3,000	\$7,014	\$10,014
For addition to store-house number fifteen...	6,000	22,000	28,000
For boundary wall from masting house to the gate on the easterly quay wall .....	7,650	12,000	19,650
For rain-water pipes, dry dock, &c.....	3,342 70	2,000	5,342 70
For tools and machinery for smithery.....	4,000	7,365	11,365
For repairs of all kinds .....	10,000	21,620 70	31,620 70
	33,992 70	71,999 70	105,992 40
<b>NAVY-YARD AT NEW YORK.</b>			
For building and enlarging brick wall round the western boundary.....	\$7,000	\$11,500	\$18,500
For brick stable .....	2,000	3,000	5,000
For guard house .....	2,000	2,500	4,500
For dredging out channels .....	1,000	4,000	5,000
For repairing and raising wharf of timber pond and floor to cooperage .....	1,000	1,300	2,300
For repairing sills of store-house.....	2,000	2,500	4,500
For mud scows and filling in low grounds ...	2,000	1,600	3,600
For repairs of all kinds.....	3,000	3,600	6,600
For the dock, in addition to former appropri- ations .....	20,000	30,000	50,000
	40,000	60,000	100,000

## Y. &amp; D.—No. 5—Continued.

	A. For the half-year ending 30th of June, 1843.	B. For the year ending 30th of June, 1844.	Aggregate amount to 30th of June, 1844.
<b>NAVY-YARD AT PHILADELPHIA.</b>			
For extending wharfs numbers 1, 2, 3, and 4	\$8,000	\$16,000	\$24,000
For repairs of all kinds .....	1,950	2,070	4,020
	9,950	18,070	28,020
<b>NAVY-YARD AT WASHINGTON.</b>			
For renewing wharf end of ship-house.....	\$2,500	\$4,558	\$7,058
For addition to officer's quarters F.....	1,000	1,225	2,225
For brow stage, shears, and bed.....	1,767	814	2,581
For iron foundry and extending iron store...	8,000	16,000	24,000
For stables.....	968	-	968
For repairs of all kinds .....	3,100	4,000	7,100
	17,335	26,597	43,932
<b>NAVY-YARD AT NORFOLK.</b>			
For extending quay wall, timber dock, &c...	\$12,000	\$26,000	\$38,000
For completing store-house 16.....	7,000	14,500	21,500
For constructing store-house 13.....	9,000	20,500	29,500
For constructing two watch-houses.....	1,200	810	2,010
For machinery for number 36 .....	1,000	2,500	3,500
For repairs of all kinds .....	4,000	6,000	10,000
	34,200	70,310	104,510
<b>NAVY-YARD AT PENSACOLA.</b>			
For constructing a wharf.....	\$10,000	\$20,000	\$30,000
For introduction of spring water into yard...	5,000	15,000	20,000
For addition to guard-house .....	1,000	1,047	2,047
For construction of 4 warrant officer's houses	10,000	22,844	32,844
For out house in commandant's yard.....	800	1,200	2,000
For repairs of all kinds, grading and levelling	2,000	3,000	5,000
	28,800	63,091	91,891

BUREAU OF YARDS AND DOCKS,  
November 25, 1842.

L. WARRINGTON,  
Chief of Bureau.

## Y. &amp; D.—No. 6.

## HOSPITALS AND MAGAZINES.

Estimate of the sums that will be required for the repairs and improvements of the hospitals and magazines, at the several navy-yards, up to the 30th of June, 1844; showing, in separate columns, the amount estimated for the half-year ending the 30th of June, 1843, and that for the year commencing on the 1st of July, 1843, and ending on the 30th of June, 1844.

	A. For the half-year ending 30th of June, 1843.	B. For the year ending 30th of June, 1844.	Aggregate amount to 30th of June, 1844.
<b>HOSPITALS.</b>			
For hospitals at Charlestown, Massachusetts.	\$1,500	\$1,300	\$2,800
For hospital at Brooklyn.....	8,832	15,000	23,832
For naval asylum at Philadelphia.....	945	366	1,311
For hospital at Norfolk.....	2,000	2,000	4,000
For hospital at Pensacola.....	1,500	2,448 25	3,948 25
<b>Total for hospitals.....</b>	<b>14,777</b>	<b>21,114 25</b>	<b>35,891 25</b>
<b>MAGAZINES.</b>			
For magazine at Charlestown, Massachusetts	\$500	\$1,000	\$1,500
For magazine at Brooklyn.....	350	350	700
For magazine at Washington.....	250	250	500
For magazine at Norfolk.....	350	350	700
<b>Total of magazines.....</b>	<b>1,450</b>	<b>1,950</b>	<b>3,400</b>

BUREAU OF YARDS AND DOCKS, *November 25, 1842.*

L. WARRINGTON, *Chief of Bureau.*

## Y. &amp; D.—No. 7.

Statement showing the items which go to make up the sum of \$266,926, being the first item in the general estimate from the Bureau of Yards and Docks, marked Y. & D.—A. for the half year ending June 30, 1843:

Receiving vessels, see Y. & D.—No. 1, for detail -	-\$98,813 00
Recruiting stations, see Y. & D.—No. 2, for detail -	- 26,425 00
Navy-yards, except the civil branch, see Y. & D. No. 3, for detail for half year is -	- 141,760 00
	266,998 00

For the second item of the general estimate \$36,860, see paper Y. & D.—No. 3, for detail.

BUREAU OF YARDS AND DOCKS, *November 25, 1842.*

L. WARRINGTON,  
*Chief of Bureau.*

## Y. &amp; D.—No. 8.

Statement showing the items which go to make up the sum of \$533,852, being the first item in the general estimate from the Bureau of Yards and Docks, for the year commencing July 1, 1843, and ending June 30, 1844, marked Y. & D.—B.

Receiving vessel, see Y & D—No 1, for the detail	-	\$197,626 00
Recruiting station, see Y. & D.—No. 2, for detail	-	52,850 00
Navy-yards, except the civil branch, see Y. & D.—No. 3, for detail	-	283,520 00
		533,996 00

For the second item of the general estimate of \$73,720, see paper Y. & D. No. 3, for detail.

BUREAU OF YARDS AND DOCKS, *November 25, 1842.*

L. WARRINGTON,  
*Chief of Bureau.*

## B No. 3.

BUREAU OF ORDNANCE AND HYDROGRAPHY,  
*November 16, 1842.*

SIR: In compliance with your instructions of the 28th ultimo, I have the honor to submit the following report and estimates:

The appropriation of \$59,097 for ordnance and ordnance stores on the northern lakes, per act 4th August, 1842, and a balance of \$12,692 79 of the appropriation per act of 3d March, 1841, for the continuance of the survey of the coast of the gulf of Mexico, appear to be the only sums for which this bureau has to account, all other appropriations for ordnance and ordnance stores having been merged in the general appropriation for "increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission."

These two sums of \$59,097 and \$12,692 79, are now in the Treasury, to the credit of this bureau.

Under the administration of the late Board of Navy Commissioners, contracts were entered into, which, by their terms, are to be completed by the 31st of January, 1843, for—

- 50 ten-inch Paixhan guns.
- 200 eight-inch do.
- 300 thirty-two-pounder chambered guns of about 56 cwt.
- 60 thirty-two-pounder chambered guns of about 41 cwt.

And for a proportionate number of shells and shot.

More than a moiety of the guns and a large proportion of the shells and shot have already been received under these contracts, and are spoken of by the inspecting officers in terms of high commendation. Contracts were also entered into for 4,000 swords, 2,000 pistols, and 2,500 carbines, deliverable during the present and ensuing years; and this bureau has contracted for 2,000 barrels of powder, deliverable the 1st December next.

Under the act of 4th August, 1842, appropriating \$59,097, "for ordnance and ordnance stores for the northern lakes," this bureau has entered into contract for 10 eight-inch Paixhan guns, 25 thirty-two-pounder chambered guns, and for the appropriate number of shells and shot, to be delivered at Sackett's Harbor, New York;

For 10 eight-inch Paixhan guns, 20 thirty-two-pounder chambered guns, and the appropriate number of shells and shot, to be delivered at Buffalo, New York; and

For 10 eight-inch Paixhan guns, 25 thirty-two-pounder chambered guns, and the appropriate number of shells and shot, to be delivered at Erie, Pennsylvania—all by the 15th of May, 1843.

If the views of the late Board of Navy Commissioners, as stated in their report to the department, May 19, 1841, be adopted as the bases of all future estimates for ordnance and ordnance stores for the Navy, then there will be required for ordnance and ordnance stores for the ensuing year, an appropriation equal to that of September 11, 1841, of \$600,000. If, however, it should be deemed inexpedient, at this time, to carry out the views of that report, then I would respectfully recommend that an appropriation for 100 guns, of about 25 cwt., with their equipments, be asked for, as a more suitable and efficient armament than the present, for our third class sloops-of-war, brigs, and schooners; an estimate for which accompanies this report, and in which is included a supply of small arms, copper powder tanks, &c., &c., deemed necessary to the proper armament and efficiency of the vessels now in commission.

The fact that almost all maritime nations have, as it appears, simultaneously, thrown aside the light gun and carronades, and adopted the long gun for their small vessels, would seem to render it absolutely necessary that we should, in self defence, and with a becoming regard for our national character, adopt similar armaments for our vessels.

That the present is a most favorable time for providing a supply of ordnance and ordnance stores for our navy, may be seen from the fact that the contracts recently entered into by this bureau for ordnance and ordnance stores for the northern lakes, have been at a cost full 33½ per cent. less than heretofore made.

Lieutenant Powell is charged with the survey of Tampa bay, and will trace the coast on as far as the mouth of the Mississippi.

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

W. M. CRANE.

Hon. A. P. UPSHUR, *Secretary of the Navy.*

Aggregate amount of all sums required for the Bureau of Ordnance and Hydrography, from the 1st January, 1843, to 30th June, 1844.

Amount of estimates from 1st January to 30th June, 1843, 6 months	\$102,521 97
Amount of estimates from 1st July, 1843, to 30th June, 1844, 12 months	195,043 93
	<u>297,565 90</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, November 16, 1842.

W. M. CRANE.

General estimate of the sums required for the Ordnance and Hydrographical Bureau, from the 1st January to the 30th June, 1843, as per tables A, B, C, D, E, F, and G.

For the use of the Ordnance branch of the service	-	\$71,556 97
For the use of the Hydrographical branch of the service	-	30,965 00
		<u>102,521 97</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

A.

There will be required for the Bureau of Ordnance and Hydrography, from 1st January to 30th June, 1843, the following :

1st. For the support of the Bureau of Ordnance and Hydrography	-	\$3,950 00
2d. For pay of officers on ordnance duty	-	6,850 00
3d. For estimate for ordnance and ordnance stores, &c., &c.	-	60,756 97
		<u>71,556 97</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

B.

Estimate of the sums required for the support of office of Bureau of Ordnance and Hydrography, from the 1st January to the 30th June, 1843—6 months.

For salary of the chief of bureau, at \$3,500 per annum	-	\$1,750 00
For salary of one clerk, at \$1,200 per annum*	-	600
For salary of one clerk, at \$1,000 per annum*	-	500
For salary of draughtsman, at \$1,000 per annum*	-	500
For salary of messenger, at \$700 per annum*	-	350
		<u>1,950 00</u>
For contingent expenses of this bureau	-	250 00
		<u>3,950 00</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

\* For act 31st August, 1843.



## C.

Estimate of pay of officers on ordnance duty, from 1st January to 30th June, 1843—6 months.

1 captain, at \$3,500 per annum	-	-	\$1,750 00
2 commanders, at \$2,100 per annum, each	-	-	2,100 00
4 lieutenants, at \$1,500 per annum, each	-	-	3,000 00
			6,850 00

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

## D.

Estimate of ordnance and ordnance stores, small-arms, powder tanks, &c., required for the general service of the navy, from 1st January, 1843, to 30th June, 1844—eighteen months.

For 100 32-pounder chambered guns, 6 feet long, to weigh about 25 cwt. each, for third class sloops-of-war, brigs, and schooners, at \$133 per ton	-	-	\$16,625 00
For 5,000 32-pounder shot, weighing 160,000 lbs., at 3 cents per lb.	-	-	4,800 00
For 100 gun-carriages, with implements complete, at \$150 each	-	-	15,000 00
For 2,000 barrels of powder, at \$17	-	-	34,000 00
For 1,000 carbines, at \$18	-	-	18,000 00
For 1,000 swords, at \$4 50	-	-	4,500 00
For 600 pistols, at \$5	-	-	3,000 00
For powder tanks of copper, composition, or bronze, for 7 frigates, 18 sloops, and 20 brigs or schooners, viz :			
420 tanks, to contain 150 lbs. each, at \$12 07			5,069 40
1,665 do      100 do      9 14			15,218 10
2,070 do      50 do      6 22			12,875 40
2,550 powder flasks, at \$1	-	-	2,550 00
1,000 boarding pikes, at \$2	-	-	2,000 00
50 fuse extractors, at \$8	-	-	400 00
For 63,800 lbs. pig lead, for musket and pistol balls, at 3½ cents per lb.	-	-	2,233 00
For 5,000 lbs. sheet lead, for gun aprons, &c., at 8 cents	-	-	400 00
For fuses for shells	-	-	600 00
For gun locks, battle lanterns, magazine lanterns, woollen woven sponges, tubes, matches, and flannel for cylinders	-	-	8,000 00
			\$145,270 00

TABLE D—Continued.

For contingent expenses that may accrue for the following purposes, viz :		
For drawings and models ; for postage paid by officers on ordnance duty ; for travelling expenses of officers in inspecting ordnance and ordnance stores ; for hire of agents and rent of storehouses for ordnance and ordnance stores on the lakes ; for experiments in gun, shell, and shot practice ; for targets ; for transportation of ordnance and ordnance stores ; for advertising in the public newspapers ; and for repairs of gun-carriages	-	\$37,000 00
Total amount required, from 1st January, 1843, to 30th June, 1844—eighteen months	-	182,270 90

Of the above sum of \$182,270 90, there will be required from the 1st January to 30th June, 1843, one third, or \$60,756 97.

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

E.

There will be required for the support of the Hydrographical office, from the 1st January to 30th June, 1843 :

1. For pay of officers, &c.	-	\$7,000 00
2. For the purchase of instruments, &c., and all other expenses	-	23,095 00
		<u>30,965 00</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

F.

Estimate of the pay required for officers, &c., on hydrographical duty from the 1st January to 30th June, 1843 (six months).

4 lieutenants, at \$1,500 per annum	-	\$3,000 00
8 passed midshipmen, at \$750 per annum	-	3,000 00
1 clerk, attached to Bureau of Ordnance and Hydrography, at \$1,000 per annum, per act of 31st August, 1842	-	500 00
1 draughtsman, at \$1,000 per annum	-	500 00
		<u>7,000 00</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

## G.

Estimate of the sums required for the Hydrographical office, from the 1st January to 30th June, 1843 (six months).

For the purchase and supply of nautical books, charts, and instruments for the navy	\$7,000 00
For repairing and binding nautical books, charts, and instruments for the navy	1,500 00
For freight and transportation of instruments, &c.	1,000 00
For travelling expenses of officers in delivering instruments	1,500 00
For house rent	250 00
For fuel, lights, repairs of house, and contingent expenses	750 00
For postage, models, drawings, packing and unpaeking instruments, and incidental labor	500 00
For account books, forms, and stationery	500 00
For working the lithographic press, including all charges on account of lithographer, stones, ink, and chymicals	600 00
To meet outstanding liabilities on 1st January, 1843	5,000 00
For the erection of building for depot	5,000 00
For the employment of a nautical and mathematical instrument maker in repairing instruments	365 00
	<u>23,965 00</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

General estimate of the sums required for the Bureau of Ordnance and Hydrography, from the 1st July, 1843, to 30th June, 1844, as per tables A, B, C, D, E, F, and G.

For the use of the ordnance branch of the service	\$143,113 93
For the use of the hydrographical branch of the service	51,930 00
	<u>195,043 93</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

## A.

There will be required for the service of the Bureau of Ordnance and Hydrography, from the 1st July, 1843, to 30th June, 1844, the following:

1. For the support of the Bureau of Ordnance and Hydrography	\$7,900 00
2. For pay of officers on ordnance duty	13,700 00
3. For estimate for ordnance and ordnance stores, &c.	121,513 93
	<u>143,113 93</u>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

## B.

Estimate of the sums required for the support of office of Bureau of Ordnance and Hydrography, from 1st July, 1843, to 30th June, 1844 (twelve months).

For salary of the chief of bureau	-	-	\$3,500 00
For salary of 1 clerk,* at	-	\$1,200	
For salary of 1 clerk,* at	-	1,000	
For salary of draughtsman,* at	-	1,000	
For salary of messenger,* at	-	700	
		<hr/>	3,900 00
For contingent expenses of bureau	-	-	500 00
			<hr/>
			7,900 00
			<hr/>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*  
W. M. CRANE.

\* Per act 31st August, 1842.

## C.

Estimate of pay of officers on ordnance duty, from 1st July, 1843, to 30th June, 1844 (twelve months).

1 captain	-	-	\$3,500 00
2 commanders, at \$2,100 per annum	-	-	4,200 00
4 lieutenants, at \$1,500	-	-	6,000 00
			<hr/>
			13,700 00
			<hr/>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*  
W. M. CRANE.

## D.

Estimate of ordnance and ordnance stores, small-arms, powder-tanks, &c., required for the general service of the navy from 1st January, 1843, to 30th June, 1844—eighteen months.

For 100 32-pounder chambered guns, 6 feet long, to weigh about 25 cwt. each, for third class sloops-of-war, brigs, and schooners, at \$133 per ton	\$16,625 00
For 5,000 32-pounder shot, weighing 160,000 lbs., at 3 cents per lb.	4,800 00

## D.—Continued.

For 100 gun-carriages, with implements complete, at \$150 each	-	\$15,000 00	
For 2,000 barrels powder, at \$17 each	-	34,000 00	
For 1,000 carbines, at \$18 each	-	18,000 00	
For 1,000 swords, at \$4 50 each	-	4,500 00	
For 600 pistols, at \$5 each	-	3,000 00	
For powder-tanks of copper, composition, or bronze, for 7 frigates, 18 sloops, and 20 brigs or schooners, viz :			
420 tanks, to contain 150 lbs. each at \$12 07		5,069 40	
1,665 do 100 do 9 14		15,218 10	
2,070 do 50 do 6 22		12,875 40	
2,550 powder-flasks, at \$1	-	2,550 00	
1,000 boarding-pikes, at \$2	-	2,000 00	
50 fuse-extractors, at \$8	-	400 00	
For 63,800 lbs. pig-lead, for musket and pistol balls, &c., at 3½ cents per lb.	-	2,233 00	
For 5,000 lbs. sheet-lead for gun-aprons, &c., at 8 cents	-	400 00	
For fuses for shells	-	600 00	
For gun-locks, battle-lanterns, magazine-lanterns, woollen woven sponges, tubes, matches, and flannel, for cylinders	-	8,000 00	
			\$145,270 90
For contingent expenses that may accrue for the following purposes, viz :			
For drawings and models; for postage paid by officers in inspecting ordnance and ordnance stores; for travelling expenses of officers in inspecting ordnance and ordnance stores; for hire of agents and rent of store-houses for ordnance and ordnance stores on the lakes; for experiments in gun, shell, and shot practice; for targets; for transportation of ordnance and ordnance stores; for advertising in the public papers, and for repairs of gun-carriages	-	-	37,000 00
Total amount required from 1st January, 1843, to 30th June, 1844, eighteen months	-	-	182,270 90

Of the above sum of \$182,270 90, there will be required from 1st July, 1843, to 30th June, 1844, two thirds—twelve months—\$121,513 93.

BUREAU OF ORDNANCE AND HYDROGRAPHY,  
November 16, 1842.

W. M. CRANE.

## E.

There will be required for the support of the Hydrographical Office, from the 1st of July, 1843, to the 30th of June, 1844, the following:

1st. For pay of officers, &c.	\$14,000
2d. For the purchase of instruments, &c., and all other expenses	37,930
	<hr/>
	51,930
	<hr/> <hr/>

[ BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

## F.

Estimate of the pay required for officers, &c., on hydrographical duty, from the 1st of July, 1843, to the 30th of June, 1844 (twelve months).

4 lieutenants, at \$1,500 per annum	\$6,000
8 passed midshipmen, at \$750 per annum	6,000
1 clerk, attached to Bureau of Ordnance and Hydrography, at \$1,000 per annum, per act of August 31, 1842	1,000
1 draughtsman, at \$1,000 per annum	1,000
	<hr/>
	14,000
	<hr/> <hr/>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

## G.

Estimate of the sums required for the Hydrographical Office from the 1st of July, 1843, to the 30th of June, 1844 (twelve months).

For the purchase and supply of nautical books, charts, and instruments for the navy	\$15,000
For repairing and binding of nautical books, charts, and instruments for the navy	3,000
For freight and transportation of instruments, &c.	2,000
For travelling expenses of officers in delivering instruments	2,000
For house rent	500
For fuel, lights, repairs of house, and contingent expenses	1,500
For postage, model, drawings, packing and unpacking instruments, and incidental labor	1,000
For account books, forms, and stationery	1,000
For working lithographic press, including all charges on account of lithographer, stones, ink, and chymicals	1,200
For the erection of a building for a depot	10,000
For the employment of a nautical and mathematical instrument maker for repairing instruments	730
	<hr/>
	37,930
	<hr/> <hr/>

BUREAU OF ORDNANCE AND HYDROGRAPHY, *November 16, 1842.*

W. M. CRANE.

C—No. 3.

BUREAU OF CONSTRUCTION AND EQUIPMENT,  
*December 2, 1842.*

SIR: I have the honor to transmit the estimates for the naval service, so far as they come under the cognizance of this bureau, prepared in accordance with the directions contained in your letters of the 28th ultimo and the 2d instant. They are in triplicate; and, agreeably to the request contained in the letter of the Register of the Treasury, of the 7th of September last, a copy of which you transmitted to me for my guidance, made both for the half year ending 30th of June, 1843, and for the year ending 30th of June, 1844.

A schedule of the papers composing the estimates accompanies each copy, and, it is believed, that their simplicity and plainness renders any particular explanation unnecessary.

I am, with great respect, sir, your obedient servant,

D. CONNER.

Hon. A. P. UPSHUR,  
*Secretary of the Navy.*

Schedule of papers contained in the estimates for the naval service, prepared by the Bureau of Construction, Equipment, and Repairs, for the eighteen months ending on the 30th of June, 1844:

- A. Estimate of the expenses of the bureau for the half year ending 30th of June, 1843.
- B. Estimate of the expenses of the bureau for the year ending 30th of June, 1844.
- A, 1. Estimate of pay of squadrons for the half year ending 30th of June, 1843.
- A, 2. Estimate of the amount required for steamers and store-ships for the half year ending 30th of June, 1843.
- A, 3. Estimate of the amount required under the head of increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission, for the half year ending 30th of June, 1843.
- A, 4. Estimate of pay of squadrons for the year ending 30th of June, 1844.
- A, 5. Estimate of the amount required for steamers and store-ships for the year ending 30th of June, 1844.
- A, 6. Estimate of the amount required under increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission, for the year ending 30th of June, 1844.
7. A statement of the names of the vessels in ordinary, or under repair at the several navy-yards.
8. A statement of the names of the vessels on the stocks at the several navy-yards.
9. General recapitulation of estimates.
10. Estimate of the amount required to keep in commission, for one year, the whole number of vessels composing the squadrons estimated for in paper A, 4.

11. Estimate of the amount required to keep in commission a vessel of each class for one year.
12. Statement of labor at the several yards from September, 1841, to September, 1842.
13. Statement of materials received and expended from September, 1841, to September, 1842.

## A.

Estimate of the sums required for the support of the Bureau of Construction, Equipment, and Repairs, for the half-year ending the 30th of June, 1843, under the law of the 31st of August, 1842.

For the salary of the chief of the bureau . . . . .	\$1,500	\$4,550
For the salaries of four clerks, draughtsman, and messenger . . . . .	3,050	
CONTINGENT EXPENSES.		
Blank books and stationery . . . . .	100	250
Miscellaneous items . . . . .	90	
Labor . . . . .	60	
		4,800

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,  
*November 28, 1842.*

## B.

Estimate of the sums required for the support of the Bureau of Construction, Equipment, and Repairs, for the year ending the 30th of June, 1844, under the law of the 31st of August, 1842.

For the salary of the chief of the bureau . . . . .	\$3,000	\$9,100
For the salaries of four clerks, draughtsman, and messenger . . . . .	6,100	
CONTINGENT EXPENSES.		
Blank books and stationery . . . . .	200	500
Miscellaneous items . . . . .	180	
Labor . . . . .	120	
		9,600

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,  
*November 28, 1842.*



## A—1.

Estimate of the amount of pay that will be required for the following squadrons of vessels in commission, for the half year ending June 30, 1843.

<i>Squadron for the Mediterranean.</i>			
1 Commander-in-chief . . . . .		\$2,000	
2 Frigates of the first class . . . . .		92,654	
3 Sloops of war . . . . .		69,042	
3 Brigs and schooners . . . . .		28,836	
			\$192,532
<i>Squadron on the coast of Brazil.</i>			
1 Commander-in-chief . . . . .		2,000	
2 Frigates of the first class . . . . .		92,654	
3 Sloops of war . . . . .		69,042	
3 Brigs and schooners . . . . .		28,836	
			192,532
<i>Squadron for the Pacific station.</i>			
1 Commander-in-chief . . . . .		2,000	
1 Frigate of the first class . . . . .		46,327	
4 Sloops of war . . . . .		92,056	
4 Brigs and schooners . . . . .		38,448	
			178,831
<i>Squadron for the East Indies.</i>			
1 Commander-in-chief . . . . .		2,000	
1 Frigate of the first class . . . . .		46,327	
2 Sloops of war . . . . .		46,028	
2 Brigs and schooners . . . . .		19,224	
			113,579
<i>Squadron on the Home station.</i>			
1 Commander-in-chief . . . . .		2,000	
1 Frigate of the first class . . . . .		46,327	
4 Sloops of war . . . . .		92,056	
4 Brigs and schooners . . . . .		38,448	
			178,831
<i>Squadron on the coast of Africa.</i>			
1 Commander-in-chief . . . . .		2,000	
2 Sloops of war . . . . .		46,028	
4 Brigs and schooners . . . . .		38,448	
			86,476
			942,781

## RECAPITULATION.

Mediterranean squadron . . . . .	\$192,532
Squadron on the coast of Brazil . . . . .	192,532
Squadron on the Pacific . . . . .	178,831
Squadron in the East Indies . . . . .	113,579
Squadron on the Home station . . . . .	178,831
Squadron on the coast of Africa . . . . .	86,476
	942,781

BUREAU OF CONSTR'N, EQUIPM'T AND REPAIRS, *Nov'r 28, 1842.*

## A—2.

Estimate of the amount required for the steamers Union and Poinsett, and the store-ships Lexington, Erie, and Relief, in commission for the half year ending 30th June, 1843; and for the Mississippi, Missouri, and Fulton, for the same period, in ordinary.

Vessels.	Pay.	Rations.	Med'cns.	Ordn'ce.	Contin- gencies.	Wear & tear.	Aggregate.
Union . . . . .	\$15,657	\$4,380	\$350	\$700	\$1,000	\$3,500	\$25,587
Poinsett . . . . .	10,609	2,263	180	350	550	1,900	15,852
Lexington . . . . .	7,289	2,044	125	200	375	1,000	11,033
Erie . . . . .	7,289	2,044	125	200	375	1,000	11,033
Relief . . . . .	6,097	1,497	93	163	275	750	8,875
	46,941	12,228	873	1,613	2,575	8,150	72,380
IN ORDINARY.*							
Mississippi . . . . .							1,100
Missouri . . . . .							1,100
Fulton . . . . .							1,100
							75,680

\*The necessary labor on board these vessels can be performed by men from the ordinary, or yard.

The small steamer Engineer will be employed at Norfolk, as a tug-boat; and, when her services are required, she can be manned from the receiving-ship, or yard. Therefore, no estimate for her is deemed necessary.

BUREAU OF CONSTR'N, EQUIPM'T AND REPAIRS, *Nov'r 28, 1842.*

## A—3.

There will be required under the head of "Increase, repairs, armament and equipment of the navy, and wear and tear of vessels in commission," for the half year ending 30th June, 1843, \$950,000.

Increase, repairs, armament and equipment of the navy, and wear and tear of vessels in commission . . . . . \$950,000

BUREAU OF CONSTR'N, EQUIPM'T AND REPAIRS, *Nov'r 28, 1842.*

A—4.

Estimate of the amount of pay that will be required for the following squadrons of vessels in commission for the year ending June 30, 1844.

<i>Squadron for the Mediterranean.</i>		
1 Commander-in-chief . . . . .	\$4,000	
2 Frigates of the first class . . . . .	185,308	
3 Sloops-of-war . . . . .	138,084	
3 Brigs and schooners . . . . .	57,672	\$385,064
<i>Squadron on the coast of Brazil.</i>		
1 Commander-in-chief . . . . .	4,000	
2 Frigates of the first class . . . . .	185,308	
3 Sloops-of-war . . . . .	138,084	
3 Brigs and schooners . . . . .	57,672	385,064
<i>Squadron for the Pacific station.</i>		
1 Commander-in-chief . . . . .	4,000	
1 Frigate of the first class . . . . .	92,654	
4 Sloops-of-war . . . . .	184,112	
4 Brigs and schooners . . . . .	76,896	357,662
<i>Squadron for the East Indies.</i>		
1 Commander-in-chief . . . . .	4,000	
1 Frigate of the first class . . . . .	92,654	
2 Sloops-of-war . . . . .	92,056	
2 Brigs and schooners . . . . .	38,448	227,158
<i>Squadron on the Home station.</i>		
1 Commander-in-chief . . . . .	4,000	
1 Frigate of the first class . . . . .	92,654	
4 Sloops-of-war . . . . .	184,112	
4 Brigs and schooners . . . . .	76,896	357,662
<i>Squadron on the coast of Africa.</i>		
1 Commander-in-chief . . . . .	4,000	
2 Sloops-of-war . . . . .	92,056	
4 Brigs and schooners . . . . .	76,896	172,952
		1,885,562

## RECAPITULATION.

Mediterranean squadron . . . . .	\$385,064
Squadron on the coast of Brazil . . . . .	385,064
Squadron in the Pacific . . . . .	357,662
Squadron in the East Indies . . . . .	227,158
Squadron on Home station . . . . .	357,662
Squadron on coast of Africa . . . . .	172,952
	1,885,562

BUREAU OF CONSTR'N, EQUIPM'T, AND REPAIRS, *Nov'r 28, 1842.*

## A—5.

Estimate of the amount required for the steamers Union and Poinsett, and the storeships Lexington, Erie, and Relief, in commission for the year ending 30th June, 1844; and for the Mississippi, Missouri, and Fulton, for the same period, in ordinary.

Vessels.	Pay.	Rations.	Med'cns.	Ordn'ce.	Contingencies.	Ware & tear.	Aggregate.
Union -	\$31,314	\$8,760	\$700	\$1,400	\$2,000	\$7,000	\$51,174
Poinsett -	21,218	4,526	360	700	1,100	3,800	31,704
Lexington -	14,578	4,088	250	400	750	2,000	22,066
Erie -	14,578	4,088	250	400	750	2,000	22,066
Relief -	12,193	2,993	185	325	550	1,500	17,746
	93,881	24,455	1,745	3,225	5,150	16,300	144,756
IN ORDINARY.*							
Mississippi . . . . .							2,200
Missouri . . . . .							2,200
Fulton . . . . .							2,300
							151,356

\* The necessary labor on board these vessels can be performed by men from the ordinary, or yard.

The small steamer Engineer will be employed at Norfolk, as a tug-boat; and when her services are required, she can be manned from the receiving-ship, or yard. Therefore, no estimate for her is deemed necessary.

BUREAU OF CONSTR'N, EQUIPM'T, AND REPAIRS, *Nov'r 28, 1842.*

## A—6.

The will be required under the head of "Increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission," for the year ending 30th June, 1844, \$1,900,000.

Increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission . . . . . \$1,900,000

BUREAU OF CONSTR'N, EQUIPM'T, AND REPAIRS, *Nov'r 28, 1842.*

## 7.

A statement of the names of the vessels in ordinary or under repair at the several navy-yards.

*At Portsmouth, N. H.*

Sloop-of-war Saratoga; ready for service.

*At Charlestown, Mass.*

Ship-of-the-line Ohio, receiving ship; in good condition

Frigates Cumberland and Potomac; these vessels can be prepared for sea in a short period.

Store-ship Erie; lately fitted as a store-ship, and ready for service.

Brig Gainbridge; ready for service.

Brig Consort; there has been no survey of this brig since her late arrival from Portland, where she has been used as a receiving-vessel.

*At Brooklyn, N. Y.*

Ship-of-the-line North Carolina; in good order, and used as a receiving-vessel.

Ships-of-the-line Washington and Franklin; both require very extensive repairs.

Frigate Hudson; unfit for service.

Frigate Savannah, lately launched; in good order.

Sloop-of-war Vincennes, lately repaired; can be prepared for sea in a very short time.

Brig Porpoise, in good order; can be fitted for sea in thirty working days.

Brig Oregon; can be fitted for service in twenty-five working days.

*At Philadelphia.*

The schooner Experiment is fitted for and used as a receiving vessel; is not considered fit for general service.

*At Baltimore.*

Brig Pioneer; in good order, and used as a receiving vessel.

*At Norfolk, Va.*

Ship-of-the-line Pennsylvania; in good order, and used as a receiving ship.

Frigates Brandywine and Macedonian, requiring slight repairs; can be fitted for sea in a short time.

Sloop-of-war Levant; nearly ready for service.

Sloop-of-war St. Louis, recently arrived from the Pacific; her survey is not yet completed; she will require considerable repairs.

Store ship Lexington; ready for sea.

Brig Truxton; ready for sea.

Steamer Engineer; transferred from the War Department; small, and unfit for a cruising vessel.

8.

A statement of the names of the vessels on the stocks at the several navy-yards.

*At Portsmouth, N. H.*

The Alabama ship-of-the-line and the Santee, first class frigate.

*At Charlestown, Mass.*

The ships-of-the-line Virginia and Vermont.

*At Brooklyn, N. Y.*

The Sabine, first class frigate.

*At Philadelphia.*

The Raritan, first class frigate.

*At Norfolk, Va.*

The New York ship-of-the-line and the St. Lawrence, first class frigate.

4 ships-of-the-line.

4 frigates.

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,  
November 28, 1842.

## GENERAL RECAPITULATION.

<i>For the half year ending June 30, 1843.</i>		
For pay of the navy, . . . . .	per letter A—No. 1.	\$942,781 00
For pay of the navy—steamers and store-ships in commission, . . . . .	per letter A—No. 2.	46,940 50
For pay of the navy—steamers in ordinary, . . . . .	per letter A—No. 2.	3,300 00
For increase, repair, armament and equipment, and wear and tear of vessels in commission, . . . . .	per letter A—No. 3.	950,000 00
For contingent expenses, . . . . .	per A—No. 2, & No. 10.	68,700 00
		\$2,011,721 50
<i>For the year ending June 30, 1844.</i>		
For pay of the navy, . . . . .	per letter A—No. 4.	1,885,562 00
For pay of the navy—steamers and store-ships in commission, . . . . .	per letter A—No. 5.	93,881 00
For pay of the navy—steamers in ordinary, . . . . .	per letter A—No. 5.	6,600 00
For increase, repair, armament and equipment, and wear and tear of vessels in commission, . . . . .	per letter A—No. 6.	1,900,000 00
For contingent expenses, . . . . .	per A—No. 5, & No. 10.	137,400 00
		4,023,443 00
Total amount required for the year and a half . . . . .		6,035,164 50

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,  
November 28, 1842.

*Estimate of the amount required to keep in commission for one year the following vessels, viz :*

7 frigates	-	-	-	-	\$1,201,424
18 sloops of war	-	-	-	-	1,385,874
20 brigs and schooners	-	-	-	-	635,980
					<u>3,223,278</u>

*Statement showing the sums required under the several heads of appropriation for the above number of vessels.*

Vessels.	Pay.	Rations.	Medicines.	Ordnance.	Wear and tear.	Contingent.	Aggregate.
7 frigates	\$648,578	\$248,346	\$15,750	\$31,500	\$210,000	\$47,250	\$1,201,424
18 sloops	828,504	269,370	18,000	36,000	180,000	54,000	1,385,874
20 brigs	384,480	109,500	7,000	14,000	100,000	21,000	635,980
	1,861,562	627,216	40,750	81,500	490,000	122,250	3,223,278

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS, November 28, 1842.



*Estimate of the amount required to keep in commission a vessel of each class for one year.*

Rates of vessels.	Pay.	Rations.	Medicines.	Ordnance.	Wear and tear.	Contingent.	Aggregate.
Ship of the line - -	\$153,064	\$65,335	\$4,000	\$10,000	\$45,000	\$12,000	\$289,399
Frigate of first class - -	92,654	35,478	2,250	4,500	30,000	6,750	171,632
Frigate of second class - -	76,676	28,470	1,900	3,800	25,000	5,700	141,546
Sloop of first class - -	46,028	14,965	1,000	2,000	10,000	3,000	76,993
Sloop of third class - -	34,734	11,388	800	1,500	6,500	2,300	57,222
Brig or schooner - -	19,224	5,475	350	700	5,000	1,050	31,799
	422,380	161,111	10,300	22,500	121,500	30,800	768,591

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS, November 28, 1842.

## 12.

Statement of the amounts expended during the preceding year, from 30th of September, 1841, to 30th September, 1842, for wages of mechanics and laborers, in building, repairing, or equipping vessels of the navy, or in receiving and securing stores and materials for these purposes; and, also, the number of days' work which were performed during the same time.

Navy-yards.	Days of labor.	Cost of labor.	Average price of labor per diem.
Portsmouth, N. H. - -	49,782	\$67,993 85	\$1 36 $\frac{1}{2}$
Charlestown, Mass. - -	110,400	191,848 87	1 73 $\frac{7}{10}$
New York - - - -	87,953	149,462 67	1 70
Philadelphia - - - -	61,976	95,067 76	1 53 $\frac{3}{10}$
Washington, D. C. - -	67,035	95,652 05	1 42 $\frac{6}{10}$
Norfolk - - - -	180,372	275,257 27	1 52 $\frac{6}{10}$
	557,518	875,282 47	1 54 $\frac{1}{10}$

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,  
November 28, 1842.

## 13.

Statement showing the cost or estimated value of stores on hand, at the several navy-yards, on the 1st of October, 1841, of articles received and expended during the year; and of stores on hand 1st October, 1842, under the appropriation for increase, repairs, armament, and equipment of the navy, and wear and tear of vessels in commission.

Navy-yards.	Value on hand 1st Oct., 1841.	Receipts.	Expenditures.	Value on hand 1st Oct., 1842.
Portsmouth, N. H.*				
Boston - - - -	\$2,092,562 60	\$520,521 95	\$591,097 36	\$2,021,987 19
New York - - - -	1,855,908 56	898,174 00	735,311 39	2,018,771 17
Philadelphia - - - -	435,225 34	181,910 23	144,856 74	472,278 82
Washington - - - -	423,163 36	339,476 43	202,130 84	560,508 95
Norfolk - - - -	1,706,537 00	607,365 47	504,473 86	1,809,428 61
Pennacola - - - -	166,889 25	20,107 73	14,421 67	172,575 31
	6,680,266 11	2,567,555 81	2,192,291 86	7,055,550 05

\* Returns not complete.

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,  
November 28, 1842.

D. No. 3.

NAVY DEPARTMENT,  
*Bureau of Provisions and Clothing,*  
 November 17, 1842.

SIR: I have the honor to submit, herewith, the following estimates for the half-year commencing January 1, 1843, and ending June 30, 1843; and for the year commencing July 1, 1843, and ending June 30, 1844, each in triplicate, viz:

- A.—Estimate of provisions for the six months.
- B.—Estimate of clothing for the six months.
- C.—Estimate of the expenses of the bureau for the six months.
- D.—Estimate of provisions for the year.
- E.—Estimate of clothing for the year.
- F.—Estimate of the expense of the bureau for the year.

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

CH. W. GOLDBOROUGH,  
*Chief of the Bureau.*

Hon. A. P. UPSHUR,  
*Secretary of the Navy.*

## A.

*Estimate of the provisions required for the navy for six months, commencing 1st of January and ending 30th of June, 1843, showing the cost of each vessel and of each yard, and the aggregate cost of the number of vessels of each description, proposed to be employed, and the general aggregate of vessels and yards for provisions.*

Description of vessels, &c.	Number of men for each.	Number of rations for each.	Cost of rations for each.	Number of vessels estimated for.	Aggregate number of men.	Aggregate number of rations.	Aggregate cost of rations.
Ship of the line -	890	162,425	\$32,485 00	2	1,780	324,850	\$64,970 00
Frigate -	486	88,695	17,739 00	5	2,430	443,475	88,695 00
Sloop -	205	37,412½	7,482 50	18	3,690	673,425	134,685 00
Brig or schooner -	75	13,687½	2,737 50	20	1,500	273,250	54,750 00
Steamer Union -	120	21,900	4,380 00	1	120	21,900	4,380 00
Steamer Poinsett -	62	11,315	2,263 00	1	62	11,315	2,263 00
RECEIVING-VESSELS.							
Ohio -	244	44,530	8,906 00	1	244	44,530	8,906 00
North Carolina -	244	44,530	8,906 00	1	244	44,530	8,906 00
Pennsylvania -	244	44,530	8,906 00	1	244	44,530	8,906 00
Ontario -	30	5,475	1,095 00	1	30	5,475	1,095 00
Experiment -	19	3,467½	693 50	1	19	3,467½	693 50
Pioneer -	19	3,467½	693 50	1	19	3,467½	693 50
Small vessel at Charleston -	19	3,467½	693 50	1	19	3,467½	693 50
NAVY-YARDS.							
Portsmouth -	20	3,650	730 00	-	20	3,650	730 00
Boston -	58	10,585	2,117 00	-	58	10,585	2,117 00
New York -	58	10,585	2,117 00	-	58	10,585	2,117 00
Philadelphia -	18	3,285	657 00	-	18	3,285	657 00
Washington -	24	4,380	876 00	-	24	4,380	876 00
Norfolk -	58	10,585	2,117 00	-	58	10,585	2,117 00
Pensacola -	53	9,672½	1,934 50	-	53	9,672½	1,934 50
STORE-SHIPS.							
Eric Lexington } Each Relief }	51	9,307½	1,861 50	3	153	27,922½	5,584 50
					10,843	1,978,847½	395,769 50

10,843 persons, each drawing one ration, make 1,978,847½ rations, at 20 cents, \$395,769 50.

It is believed that the sum thus estimated will be found sufficient to cover all expenses of transportation, cooperage, and other expenses. It is therefore respectfully recommended that the appropriation be worded accordingly.

For provisions for the navy for the half year commencing January 1, and

ending June 30, 1843, including transportation, cooerage, and other expenses, \$395,769 50.

CH. W. GOLDSBOROUGH,  
*Chief of the Bureau.*

NAVY DEPARTMENT,  
*Bureau of Provisions and Clothing, November 17, 1842.*

The balance of the appropriation for 1842, for provisions, which will remain in the Treasury on January 1, 1843, will, it is estimated, be sufficient to meet all liabilities under that head, and spare a considerable amount; and I would suggest that \$33,000 may be deducted from the above estimate; thus reducing it to \$362,769 50.

CH. W. GOLDSBOROUGH.

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B.

Estimate of clothing for the navy, for the half year, commencing January 1, and ending June 30, 1843.

The whole number of persons employed on board our ships, and in our navy-yards (in the ordinary), is estimated at 10,543. Of these it is calculated that about 7,600 will draw their supplies of clothing from the Government stock. Each person heretofore, it has been estimated, has drawn, on an average, in 3 years, a supply of clothing equal to \$175 70; but in consequence of the reduction in the price of materials, it is confidently believed that the estimate should be reduced to \$150; so that the average each year would be \$50, and the half year would be \$25; then this estimate for six months will be 7,600 persons, at \$25 each, \$190,000.

Clothing for the navy has heretofore been paid for out of the appropriation for "pay, &c." of the navy; when issued, it has been charged to the men, as so much pay, and the amount thus issued has been restored to the appropriation for pay, &c.; but no particular account for clothing issued, has ever been settled between the pursers and the Government. Such account should show the number of each particular article of clothing delivered to, and issued by, the pursers; for instance, 1,000 suits are delivered by a storekeeper to a purser; the storekeeper is credited by the delivery, and the purser is charged and must account for each and every article received by him for issue. Another consequence which has been inconvenient to the service, is this: the actual available amount of the appropriation for pay, is reduced by considerable sums of that appropriation being vested in clothing at the very time when the whole appropriation has been required to pay off crews arriving from distant stations. Moreover, the appropriation for pay is reduced by every condemnation of clothing, the difference between its original cost, and the amount it sells for at public auction after being surveyed and condemned as unfit for issue in the navy, would show the amount of the reduction. Another consideration which appears to me to favor the proposition of a specific appropriation, is this: that having but one appropriation to rely on, the actual expenditures under the head of clothing, can be more

readily ascertained, the accounts greatly simplified, and the actual cost clearly exhibited on the books of this bureau without referring to any other appropriation than that for "clothing for the navy."

No additional cost would arise from adopting this proposition. It is indeed hoped confidently, that the regulations recently adopted, will have a tendency to produce a considerable reduction of the expenses. So far will the expenses probably be reduced, that I would respectfully suggest that the expenses of transportation may be included in an appropriation, without increasing its aggregate amount; so that the appropriation for "contingent expenses," heretofore used to pay for transportation, will be saved the amount thereof, and the appropriation now submitted, can be worded thus:

For clothing for the navy, including transportation, and every other expense, for the half year, commencing 1st January, and ending 30th June, 1843, \$190,000.

BUREAU OF PROVISIONS AND CLOTHING,  
November 17, 1842.

CHARLES W. GOLDSBOROUGH,  
*Chief of the Bureau.*

C.

Estimate of the expense of the Bureau of Provisions and Clothing, for the half year commencing January 1, and ending 30th June, 1843, agreeable to the 4th section of the act of 31st August, 1842, entitled, "An act to reorganize the Navy Department of the United States."

For compensation to the chief of the Bureau, at \$3,000 per annum	\$1,500
For compensation to the chief clerk, at \$1,400 per annum	700
For compensation to a clerk at \$1,200 per annum	600
For compensation to a clerk at \$800 per annum	400
One messenger at \$700 per annum	350

*Contingent:*

For blank books, binding, and stationery	300
For miscellaneous items	100

In submitting this estimate, a sense of duty requires that I should state that additional assistance is *absolutely necessary* to enable the bureau to keep the accounts coming under its cognizance. Every purser in the service, and every store-keeper, has accounts to settle, for all the various provisions, slop-clothing, and "small stores," committed to his care, and for which he is held responsible. These accounts, as far as practicable, should be settled *every quarter*. In number they may exceed sixty for each quarter, and each account necessarily embraces a multitude of items which require particular and careful examination, involving many calls for explanation, preparatory to their being admitted for entry on the journal of accounts. The present

chief clerk of the bureau has incessant employment, in performing the duties enjoined on him by the act of 26th August, 1842, section 13, in receiving and examining the monthly and quarterly returns of stores and clothing received and expended at the stations, foreign and home, and on board all our vessels in commission, entering numerous invoices of shipments, and aiding in the correspondence of the bureau. Zealous and capable as the chief clerk is known to be, it has already become apparent that these duties are too heavy for any one individual; and when it is borne in mind that all these accounts are to be entered in a journal, and transferred thence into a ledger, and such entries and transfers are all to be carefully examined, it will, it is hoped and presumed, be at once admitted, that additional assistance is *absolutely necessary*.

The time of the second clerk allowed by the act of 31st August, 1842, is fully occupied by the duties arising under contracts. He has to prepare, not only the original contracts, but duplicates and triplicates, for transmission to commandants and agents: to record them: to enter and scale all bids for supplies; to receive and enter all returns as to the progress making in the execution of contracts: all payments upon them; all reservations; to prepare all advertisements for supplies, and see they are published as directed; to examine all advertising accounts, prepare them, if correct, for approval, and keep an account of all such as may be approved; and to aid in the correspondence upon all these subjects, and to record the same. The third clerk is fully employed in attending to the general records, and in keeping the requisition book, and the exhibits of moneys received and expended by the disbursing agents. Beside which, he has to aid in the general correspondence, and to prepare copies of letters and papers of various kinds. Hence, neither the 2d nor 3d clerk could reasonably be required to aid in the general accounts of stores and clothing, and such accounts could not be entered on the Journal, or spread upon the ledger without additional assistance. Two able accountants in addition to the present force, would, it is hoped, be found sufficient to enable us to keep the accounts of the bureau, in such condition as would be satisfactory. I, therefore, respectfully submit the following additional estimate, viz:

Two clerks, as accountants at \$            each per annum—the half        \$

BUREAU OF PROVISIONS AND CLOTHING, *November 17, 1842.*  
CHAS. W. GOLDSBOROUGH.

## D.

*Estimate of the provisions required for the navy, for one year, commencing 1st of July, 1843, and ending 30th of June, 1844, showing the cost of each vessel and of each yard, and the aggregate cost of the number of vessels of each description, proposed to be employed, and the general aggregate of vessels and yards for provisions.*

Description of vessels, &c.	Number of men for each.	Number of rations for each.	Cost of rations for each.	Number of vessels estimated for.	Aggregate number of men.	Aggregate number of rations.	Aggregate cost of rations.
Ship of the line -	890	324,850	\$64,970	2	1,780	649,700	\$129,940
Frigate -	486	177,390	35,478	5	2,430	886,950	177,390
Sloop -	205	74,825	14,965	18	3,690	1,346,850	269,370
Brig or schooner -	75	27,375	5,475	20	1,500	547,500	109,500
Steamer Union -	120	43,800	8,760	1	120	43,800	8,760
Steamer Peinsett -	62	22,630	4,526	1	62	22,630	4,526
RECEIVING-VESSELS.							
Ohio -	244	89,060	17,812	1	244	89,060	17,812
North Carolina -	244	89,060	17,812	1	244	89,060	17,812
Pennsylvania -	244	89,060	17,812	1	244	89,060	17,812
Ontario -	30	10,950	2,190	1	30	10,950	2,190
Experiment -	19	6,935	1,387	1	19	6,935	1,387
Pioneer -	19	6,935	1,387	1	19	6,935	1,387
Small vessel at Charleston -	19	6,935	1,387	1	19	6,935	1,387
NAVY-YARDS.							
Portsmouth -	20	7,300	1,460	1	20	7,300	1,460
Boston -	58	21,170	4,234	1	58	21,170	4,234
New York -	58	21,170	4,234	1	58	21,170	4,234
Philadelphia -	18	6,570	1,314	1	18	6,570	1,314
Washington -	24	8,760	1,752	1	24	8,760	1,752
Norfolk -	58	21,170	4,234	1	58	21,170	4,234
Pensacola -	53	19,345	3,869	1	53	19,345	3,869
STORE-SHIPS.							
Erie } Lexington } Each Relief }	51	18,615	3,723	3	153	55,845	11,169
					10,843	3,957,695	791,539

10,843 persons, each drawing 1 ration, make 3,957,695 rations, at 20 cents, \$791,539.

It is believed that the sum thus estimated will be found sufficient to cover all expenses of transportation, coeprage, and other expenses. It is therefore respectfully recommended that the appropriation be worded accordingly.

For provisions for the navy for the year commencing July 1, 1843, and ending June 30, 1844, including transportation, coeprage, and other expenses, \$791,539.

NAVY DEPARTMENT,

Bureau of Provisions and Clothing, November 17, 1842.

CH. W. GOLDSBOROUGH,

Chief of the Bureau.



The balance of the appropriation for provisions for 1842, which will remain in the Treasury on January 1, 1843, will, it is estimated, be sufficient to meet all the liabilities under that head, and spare a considerable amount; and I would suggest that \$67,000 may be deducted from the above estimate; thus reducing it to \$724,539.

CH. W. GOLDSBOROUGH.

E.

Estimate of clothing for the navy for the year commencing July 1, 1843, and ending June 30, 1844:

The whole number of persons employed on board our ships, &c., in our navy-yards (in ordinary), is estimated at 10,843.

Of these it is calculated that about 7,600 will draw their supplies of clothing from the Government stock.

Each person, it is believed, will not draw on an average, in the course of three years a supply of clothing greater than \$150. So that the average for one year would be \$50. Then this estimate for one year will be, 7,600 persons at \$50 each, \$380,000.

The appropriation to include the expense of transportation, and every other expense.

BUREAU OF PROVISIONS AND CLOTHING, *Nov. 17, 1842.*

CH. W. GOLDSBOROUGH,  
*Chief of the Bureau.*

F.

Estimate of the expense of the Bureau of Provisions and Clothing for the year commencing July 1, 1843, and ending June 30, 1844; agreeable to the 4th section of the act of August 31, 1842, entitled, "An act to reorganize the Navy Department of the United States:"

For compensation to the chief of the bureau, at \$3,000 per annum	-	-	\$3,000 00
For compensation to the chief clerk, at \$1,400	-	-	1,400 00
For compensation to a clerk, at \$1,200	-	-	1,200 00
For compensation to a clerk, at \$800	-	-	800 00
For one messenger, at \$700	-	-	700 00

CONTINGENT.

For blank-books, binding, and stationery	-	-	450 00
For miscellaneous items	-	-	200 00

SUBMITTED.

For two additional accountants

BUREAU OF PROVISIONS AND CLOTHING, *November 17, 1842.*

CH. W. GOLDSBOROUGH,  
*Chief of the Bureau.*

E No. 3.

NAVY DEPARTMENT,  
BUREAU OF MEDICINE AND SURGERY, *December 1, 1842.*

SIR: In obedience to your instructions of the 28th of October, the undersigned has the honor to submit the following preamble and estimates for the medical department of the navy:

The preamble is deemed absolutely essential for a true understanding of the real condition of that part of the Navy Department which comes under the direction of the Bureau of Medicine and Surgery. The developments it contains are neither agreeable, nor, perhaps, expected. Yet it is right that Congress should be in possession of the facts showing the awkward condition of the medical department, in relation to its fiscal concerns. It is also just to yourself to show how much *reform* was needed in this branch of the service. It is but fair to the incumbent of this bureau, that the heavy demands existing on an appropriation which, for a series of years, seems to have been either insufficiently asked, or inadequately granted, in reference to the expenses that appropriation was designed to liquidate—should be explained. That the annual appropriations for the outlays of the medical department have not been, in some years, anterior to that just passed, in parity with the current expenses of those years, the undersigned sees no occasion to take upon himself to assert. But that, in the series of years alluded to, the aggregate appropriations have not only not been commensurate with the aggregate outlay, he not only takes upon himself to say, but, also, that the deficit in the former, to bring them on an equality with the latter, amounts to a sum which, unless provided by a specific appropriation, will press heavily for years to come, on the usual medical appropriation, even by a process which would subtract a tithe of each year's grant for the gradual extinction of the present demands. It would, therefore, be equally disingenuous to assume these demands, in part, in the basis of estimates for future wants, thus vainly and uselessly, and, on the part of the undersigned, culpably endeavoring to conceal the embarrassment they occasion, and unwise to withhold any longer from Congress the fact that, until they are wholly dissipated by specific funds, no economy can be apparent, as consecutive to the reorganization which introduced a bureau in this department, among the effects of the operations of which, economy was anticipated as an important one.

To start in this bureau, under the just expectation by Congress and by yourself, of thrift and saving, with the clog of an aggregate debt of *fifty thousand dollars*, would be idle. This is the sum, *at least*, which, by a gradual increment from a previously unwise method of making estimates, meets the undersigned in the fiscal part of his bureau. To dissipate the trammels of this residual sum after years of injudicious estimates, by gradually lessening it out of the annual appropriations, instead of acquainting Congress at once with the naked truth, would require that thirteen thousand dollars should *annually, for four years*, be abstracted from the medical fund! The result is plain, supposing this course should be adopted instead of the one the undersigned proposes of *eclaircissement*: that, *for four years to come*, the Bureau of Medicine and Surgery would *seem* TO INCREASE the heretofore usual appropriation, by thirteen thousand dollars annually!! That neither system nor economy could be imputed as a part of such wild operations, is clear; that unmerited blame and obloquy would be heaped upon this part of the reorganization, is equally plain; that an unjust unpopularity would meet its

measures at every step, is not less manifest; and, finally, that its abolition would be the probable issue, is unquestionable. With these general observations, the undersigned proceeds to the details within his knowledge, on which they have been based, after the following explanatory observations:

The difficulty that meets the attempt at making the required estimates at the onset, has already been premised. Its cause, or causes rather (for there are several), will now be set forth.

These estimates are for the moiety of the year approaching, ending on the 30th of June next; together with superadded estimates for the whole of the fiscal year thereafter, ending on the 30th June, 1844. To arrive at these would be a simple affair; but the simplicity of it becomes, instead, a complex calculation, by the existence of claims unappealed, to the amount already mentioned, in round numbers.

When estimates were presented to Congress prior to August, 1842, for an appropriation of thirty thousand dollars to defray the current expenses of the medical department of the navy during the year 1842, there remained, on the day of the passage of the law granting the appropriation asked for, certain arrearages due for outlays in the medical department to an amount, in the aggregate, actually exceeding, very considerably, the total of that appropriation.

The whole of it was, therefore, swallowed up in less than a week after the passage of the act, although five months of the year thus seemingly provided for were *in futuro*. But this is not all. *At least* ten thousand dollars still remained due and unpaid. This sum (\$40,000) had grown out of bills charged certainly, if not justly chargeable (which admits of doubt), to the appropriation for the medical department. The result is as manifest and intelligible as its sequence was natural. An appropriation for the whole of the year 1842 was extinguished in a few days to liquidate, although only adequate to do it partially, the debts of the year 1841, those of 1842 accumulating the while. The debts of 1840, with a similar retrogression, had been paid also only in part, out of the appropriation of and for 1841; those in like manner of 1839 out of the appropriation of 1840, and so on by retrogressive shackle for perhaps a long course of years; each anterior year's debts bringing the additional increment of the portion left unpaid from the periods of time gone by, as an *undecaying* dead horse, the price of which was to be paid, sooner or later, out of funds set apart to buy food for the living one.

All this time Congress remained ignorant of the true state of things, believing that each annual appropriation was competent to its object, since it always reached the amount asked as competent for the year embraced.

Thus the undersigned has brought you, by the simple statement of a state of things which quickly reached his mind, to a thorough understanding of the confusion which would continue, unless the affair be rectified, on the just and competent principles of cure. It only remains to say, that whatever information this preamble may communicate, of a novel or unexpected nature, it was all forced on him with convincing celerity by the power of *figures*, on the moment when his duty led him to investigate the fiscal concerns of his bureau, and to ponder the singular uniformity of navy agents' returns in the loaded column appropriated to "amounts overpaid." The amazement, this uniformity and the large amounts of that column produced, can be better understood by you than explained by the undersigned. Sufficient ground for this will be admitted when he simply states that he had expected to see a clean and clear ledger, exhibiting the

distribution of the appropriation in parcels to those agents as debits for the year current, with simple offsets against these of credits for lawful outlays of that year from the medical appropriation. Far from this simplicity of grant and expenditure being the result of his scrutiny; having found, not only the groaning column of overpayments on account of the appropriation for "medicines, &c.," but unwarrantable intrusions on the fund, especially for the support of the naval asylum, the irregularities in the administration of which you have promptly proceeded to correct, on the moment of the disclosures which the reorganization produced.

The cause of all this is traceable, as has been stated, several years back, by the annual interlocking with each successive appropriation for any particular year the claims of some year anterior; thus leaving an apparent competent fund in a state of glaring incompetency to meet the objects it was lawfully designed to meet.

This cause of insufficiency to liquidate the annual demands, was dilated by an immoderate expenditure, from year to year, far beyond the actual need of outlay for surgeon's necessaries and appliances; an immoderate expenditure growing out of a lax and irresponsible method of making requisitions, and obtaining their approval by officers incompetent to judge of the necessity for them, either in kind or in the quantities asked for; and still further enlarged, by an unrestrained and *craft-inviting* course, in having those requisitions executed.

But these were not the only causes which impinged the strength of the appropriation. An additional one is found in the *loss* which the practised system of entire unaccountability engendered, of articles of imperishable nature, but costly price, and which had been obtained out of Congressional appropriations apposite to such expenditure.

The necessity for *replenishing* these, admitted of no abatement from the fact, that, having once been obtained, they *ought to have been preserved* for future and other similar use to that to which they were first applied. The fact was evident that now they were gone. This overwhelmed every other view. No accountability existing, either by law, usage, or much individual exertion on the part of those concerned, but, on the contrary, any and every essay toward instituting it having been uniformly extinguished, by a constant refusal by the usual recipients to give receipts or vouchers for delivery of articles after return-cruises, it is neither surprising that losses of costly appliances ensued, nor is it strange that a continual drain was thus instituted on a specific fund destined, in part at least, to meet outlays of one year, which would last for the same purpose in the service, if well taken care of, for several consecutive years.

It is easy to perceive how these causes might quickly impoverish an appropriation, even if it had been well devised to meet current expenses; but when it is remembered that a doubtful judgment had been shown, for years past, by those who furnished the Secretary of the Navy with the data for his estimates on the branch of the service in question; and that a policy not easily understood, or involving an unacquaintance, perhaps, with the veritable state of perpetuated claims, led to asking, or causing to be asked, of Congress, an appropriation wholly insufficient—it becomes palpable that the irregularity and irresponsibility in making requisitions, and the exorbitant charges on their execution in, at least, one of our southern sea-ports, joined to the carelessness, waste, and loss produced, in the manner noticed, are causes in combination, adequate to produce their full share in contriving the embarrassments now complained of and exhibited.

In truth, the appropriation, for one year, was often, if not always, virtually, though perhaps not apparently, foreclosed, for any benefit to that year's outlay, by the engulfing arrearages of the year or more previous. The real state of affairs in the medical department not being known, or being known, not having been developed, it became next to impossible to meet *indefinite* outlays or claims by *definite* appropriations. A similar difficulty would now exist, if any estimates were predicated on the unsound policy of perpetuating the mystification which has characterized the medical outlay for years past. Under the full conviction of this, that specious and deceptive lure held out by narrowed estimates is now abandoned and anathematized. The plain truth, devoid of cloud or obscurity, is now before you, and the undersigned believes that you will better receive it than a mesh of intricacies predicated on calculations which must fall short of adequacy, if devoid of that foundation. There is nothing problematical in this policy. To disclose to you that which *figures* in the accounting books, and in the official returns of navy agents to his bureau, revealed to the undersigned, is a duty; to make that disclosure fully and fairly, is common honesty.

It may not be without utility to observe here, that whatever may be the amount granted hereafter to the medical department, its integrity will most likely not be invaded by any of the irregular causes of diminution which have been noticed. Hitherto, there not having been any restraining influence over outlays, and no practicable method of recalling the material proceeds of those outlays into the storerooms for public property, nor any power exerted till lately (for the evil was not known to the power, until brought to light by the reorganization\*) to stay a truly ruthless host of intrusions on the medical

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\* Six hundred and sixty-five dollars and fifty-seven cents were, unauthorizedly, paid out of the appropriation for "medicines, surgical instruments, &c.," for 31 blue cloth frock-coats, with navy buttons, and a silver star ornament, 31 pairs blue cassimere pantaloons, and 31 blue cassimere vests, with navy buttons—and all this toggery for "Jack"—for pensioners who never had worn anything longer than a sailor's jacket, or at most, in storms, a monkey or pea jacket, the cost of which is eight dollars, instead of fourteen dollars charged for the frock-coats, made in *officer's* undress fashion. This will serve to show the unwarrantable intrusions on the appropriation for medicines, referred to in the text. But it may more strongly be set forth by this fact: of seven thousand one hundred and twenty-one dollars and sixty-four cents, paid by the navy agent at Philadelphia, from the 1st of October, 1841, to the 25th of October, 1842, out of the appropriation for "medicines, &c.," only one thousand and forty dollars and nineteen cents were for medicines, surgical instruments, and surgical purposes. The remaining six thousand one hundred and eighty-one dollars and forty-five cents were for items of expenditure, *wholly foreign to the intent of the appropriation*, and, of course, were what have been appropriately called intrusions on the fund, not known to be practised, nor thought of by Congress, when they made the appropriations in question.

How could thirty thousand dollars, appropriated for the whole naval service, for the whole year 1842, be deemed sufficient, when a *mal-administration* of the fund, on one station, swept off at once, in a few days more than twelve months, \$6,131 45, not lawfully chargeable to the medical fund? Could the balance, \$23,818 55, be for a moment thought competent to supply all the ships, sick quarters, hospitals, &c., in the United States, for a whole year? That this *mal-administration* may be understood, the navy agent's return to the Bureau of Medicine and Surgery is annexed, *in toto*, as an appendix. It will not be understood, however, that the slightest blame is imputed in these irregular transactions, to that gentleman, officially, or in any other way. The irregularity is chargeable, and it is now unhesitatingly charged, on the governor of the naval asylum, who approved the bills, and thus ordered their payment out of an appropriation which no sophistry could make chargeable with such burdens. In addition to these irregular outlays, the sum of \$3,500 is reported on the purser's pay rolls, as paid, annually, for *wages or pay alone* (exclusive of officers' pay), in that institution—\$428 of which, is the wages of a person rated and paid as hospital steward, who never performed five minutes' duty as such in the hospital, but was employed solely as purser's clerk, and to buy provisions for which he was regularly paid, as any agent not connected with the institution might have done. Of this whole amount of \$3,500 for wages (the subsistence of those so paid, being a further charge, and paid out of the appropriation for medicine), only \$936 were allowed in the estimates of the Secretary of the Navy, and, subsequently, \$303 per annum were allowed for a carpenter's mate, making \$1,239 allowed: the balance, \$2,361, being entirely unauthorized, to near the whole amount, the residue, to speak cautiously, at least very doubtfully authorized.

appropriation—the inroads on which, conveyed the thought, to cool lookers-on, that its fastness must have been considered impregnable, and its resources exhaustless; nor, seemingly, any fear of that power, for, among other impoverishing drains, the appropriation has been made the passive, patient, enduring instrument of a whimsical prodigality—which it would be affection to call by any other name—of a tissue of taxes, absurdly conceived, and unauthorizedly levied by a *se-ipse* expenditure (for a naval charity), the grotesque character of which is equally anomalous and queer; nor, as it would seem, any chastened appreciation of the *intent* of the appropriation—else this dwindling away of the easily-told contents of small coffers, at best, would, under the review of any rational intelligence, have quickly conveyed the self-evident truth that those coffers could no more be expected to defray such profuseness, than the recipient of a parish-bounty could be thought able to pay the rent of the almonry which gives him food, raiment, and shelter; nor, finally, above all, any *gleam* of accountability emanating from the confused mist surrounding the disjointed and schemeless way of furnishing the general supplies of the medical service:—nothing, of all these propositions (which, in the aggregate, make up a true *sortes* deducible from *facts*) existing in the service, the conviction that kind of argument produces is logically irresistible—that heretofore it would have been the greatest hardihood to have promised, or expected, a faithful distribution of any appropriation on which drafts were irremediably inordinate, irregular, prodigal, if not senseless, and often wholly useless for any purpose, save enriching the rapacious furnishers. That this epithet is merited by some, is, unfortunately for the weak and groaning medical appropriation, but too true. To their extortionate and unconscionable charges, especially for surgical instruments,\* the under-

\* It may illustrate this remark to state, that the records of this bureau show that an eminent surgical instrument maker, of Philadelphia, sold certain instruments of his manufacture, of the first-rate workmanship and approved pattern, for the sum of \$669 81 to certain druggists largely supplying the medical outfits of vessels in a neighboring seaport. The commission alluded to in the text, conducted by Benjamin Homans, now of the Navy Department, shows that these identical instruments were furnished by the druggists alluded to, to certain vessels, and that they charged Government for them the sum of \$1,224 54; thus exhibiting a profit of \$554 73—in other words, an exorbitant charge of about 83 per cent. This, too, on articles of well-known established price. These prices were approved in the usual way, and *actually paid*.

The same commission brought to light, from actual vouchers, the charge by the same druggists of \$287 82, in four years, for the recipients of medicines and freights, although they state, on oath, that the “drayage, freight, &c., was always paid by them.” Epsom salt was invariably charged, in *wholesale quantities*, at ten cents per pound, when it can anywhere be purchased, of wholesale dealers, at five cents, and even much less. Half an ounce of veratria\* was charged at *eighteen dollars*! An ounce of gold is worth sixteen dollars (a double, or ounce). Thus was a small white powder charged at thirty-six dollars an ounce—four dollars more than twice the value of an ounce of gold. One ounce of strychnine,† a similar powder, was charged at thirty-four dollars; that is, two dollars more than twice the value of an ounce of gold. Two dozen bottles Bedford spring water were charged eight dollars, viz: thirty-three cents per bottle. Two *scabs* of vaccine virus were charged at nine dollars. Oiled silk, worth, of the best quality, \$1 37½ per yard, was charged eighty dollars for twenty yards; that is, four dollars per yard. Seventy-two bottles compound sirup sarsaparilla were charged at \$108; viz: \$1 50 a bottle. The *retail* price is everywhere *seventy-five cents* a bottle, and it has been purchased by this bureau in Philadelphia, at \$7 50 per dozen, or \$49 for 72 bottles.

In the examination of vouchers by the same commission, still more extortionate charges appeared on some articles. In short, the whole of the charges now printed in the documents of Congress are of the same extortionate character.

The illustrations given are ample to prove the truth of the remarks in the text, on the rapacity of furnishers. Of \$42,504 34 paid by a navy-agent at the seaport alluded to, out of the appropriation for “Medicines, &c.,” these furnishers received \$22,676 10.

\* Philadelphia prices to this bureau: veratria \$10 50 by one firm of chemists and \$10 by another; the wholesale of these poisons being ounces and one and half ounces.

† Philadelphia price to this bureau, by one firm of chemists, \$7 per ounce; by another, \$6 50 per ounce, avoirdupois; the *wholesale* also of this poison being ounces and one and half ounces. Some difference existing between the manner of putting these articles up, by the two firms, their prices may be said to be about equal for the drug.

signed has called your attention. They in part, but doubtless not to the extent of a tittle of the occult freebooting which for years has been in operation, under the guise of fair profit, have been brought to light by a report to Congress now in its printed documents. That report resulted from an investigating commission instituted by your immediate predecessor, with that peering scrutiny into irregularities and abuses for which he was remarkable, and which has in the same sharpness been instituted by yourself, and carried out (from a conviction that reform could no longer be postponed, consistently with the public interests), into a digested system of reorganization, which is hourly presenting additional facts to confirm the necessity for establishing, continuing, and expanding that reorganization. These hourly revelations are, at least in the Bureau of Medicine and Surgery, absolutely amazing.

The difficulty of making, with any prospect of redemption, such a promise as has been above touched on, or realizing any such expectation as alluded to, would hitherto have been further enhanced by the practice heretofore pursued, of making good an exhausted appropriation by borrowing temporarily from another. But pay day was to come at last; the undersigned has shown you that its approach is as vicinal as the demands with which it is fraught are importunate and unsusceptible of postponement. Procrastination will not mend, but mar that measure which, only, can bring the issue right. The enlightened views of Congress, once invited to this measure of fiscal appeasement, would by the undersigned be confided in to meet the emergency. You, doubtless, are inspired with the same confident reliance on their just sense of necessity for something to be done effectual, thus ultimately closing the door, so long and injuriously to the public credit, wide open for the ingress of irregularities, varied, mischievous, and odd. In a word, a specific appropriation to obliterate retrospective claims, would block out that door by raising an impenetrable barrier against future abuses and irregularities. That measure once accomplished, nothing of the anomalous operations which have been developed and complained of, can be interposed (if the incumbent of this bureau does his duty) to prevent a due regard in keeping without intrusion all future appropriations.

The existing scores once erased by payment, the course will be clear for economy and thrift. The goal at the end of that course can be reached in no other way. An unsettled ledger would perpetuate embarrassment, by withholding the ready money which ought to find its way into cash payments for supplies, and diverting it into the channel clogged with the obstacles of debt and discredit—it might be said, no credit at all, for the smirch it has sustained, if not indelible, is so deep as to have actually frustrated the economy which would have been the result of cash payments by the bureau. There has been no reciprocity in the borrowing complained of, but what added to the evil. In short the medical appropriation having been made to bear the burden of a collapsing pressure, meager, ill-conditioned, ill-provided, as it has been, it was ever seized on in such plumpness as recent Congressional action may have given it, grappled with, thrown down, filched, and picked to the bone, by voracity in the furnishers, and by the relentless tugs of the visionary and the inconsiderate. The evil exhibited is considerable and pervading, but not inextirpable. Fortunately, the remedy is at hand. Should Congress deem it right and expedient to meet the emergency by the annihilating power it possesses, that course would

dissipate the mystified condition of the concerns which now come under the Bureau of Medicine and Surgery. Until that step be taken, all attempts at reducing the medical appropriation to the square-and-compass test will prove fallacious, deceptive, and unavailing. When taken, the appropriation may thereafter be in good understanding made, and in good faith expended.

It is now, therefore, submitted to your consideration whether it might not be well to lay these facts before the appropriating power, and ask for the requisite funds to release the accounts, in abeyance, from all prospective trammel or postponement. This would render the operations of the bureau fully perspicuous and effectually economical. It would, too, relieve its chief from floundering in future amid debts and drawbacks, which otherwise would create a *vis inertia* inimical to the object of its institution, and fatal perhaps to its existence.

This may be a fit place to suggest what the undersigned can not but deem a modification in the future medical appropriation, imperatively called for by the principles of unity in purchases, requisitions, issues, and accountability, adopted in this bureau. The modification alluded to has reference to that distinct appropriation, heretofore recognised, for the medical disbursements for the marine corps. This separation of objects homogeneous in their nature and uses, presents an unnecessary distracting influence over the medical department of the navy; and moreover, the distinct appropriation exhibits often, an ungainly disproportion to that for the service of the navy proper. In the present year, for example, that disproportionate unsuitableness between means and the objects they are to embrace, was very striking—\$4,140 to \$30,000. When the relative numerical strength of the navy proper, and the marine corps, is glanced at, this injudicious variance in proportion will be readily perceived. There are other reasons for amalgamating the two appropriations involving the good of the service, in the generalization now aimed at in the bureau. After maturely considering all the aspects of this hitherto distinct appropriation, the undersigned is unable to perceive any good reason for continuing as a separate item of appropriation, the funds for the sick and hurt of the marine corps. Indeed, he can find, in the whole view of the subject, not only no reason, good or plausible, why it should be distinct from the general naval appropriation, but every good and sufficient reason that might be fairly asked for, why it should not be perpetuated in separation.

They may be summed up in these: The naval surgeons in all instances, without exception, perform the duty of medical officers to the marine corps, from headquarters down to the smallest guard allotted to vessels of war. In many instances, notwithstanding the separation of appropriations that have a common object and tendency, the necessaries and appliances for the sick and hurt marines, are drained from the supplies obtained out of the appropriation for the naval service proper. The same kind of drain carries away a large portion of the supplies on board of all vessels having a marine guard. There remains, perhaps, only the medical department of the marines at headquarters in Washington, to be supplied out of the specific and distinct appropriation for marines. There does not seem any appropriate cause, or plausible, much less valid reason, why this should continue, especially now that all requisitions and approvals, both for the articles and the payments for them, originate or are entertained and adjusted, in the Bureau of Medicine and Surgery. If all requisitions then and the administrative surveillance of them



preparatory to payment, exist in one office, there seems to be much propriety in suggesting that the funds should be a unit for the two objects.

Should this state of separate appropriation be not hereafter set aside, the result will inevitably be an irruption on the unity of action, expenditure, issues, and accountability, general and fiscal, which ought to be maintained inviolate in the concerns of this bureau. The primitive cause of the usage is not known, nor can its necessity be defended on any stable ground. For these reasons it is now submitted to you, whether the present would not be a fit opportunity so to modify the next solicited appropriation for the sick and hurt, as to embrace, *under one general head*, the navy proper and the marine corps.

In addition to this improvement in the essential base of the appropriation for the sick and hurt of the navy, the undersigned takes occasion to suggest another, less essential or important, but still an improvement, which, if adopted, would not be without its advantage. It relates simply to the phraseology of the appropriation as it has heretofore been expressed.

The nomenclature of appropriations is entirely conventional; and it is presumed something of appositeness in the funds required to the objects they are destined to procure, is intended to exist. Under this idea it is suggested, that hereafter the funds given by Congress for the medical department be styled "an appropriation for surgeons' necessaries and appliances for the sick and hurt of the naval service, including the marine corps."

The phraseology of the appropriation as heretofore used, is not in sufficient generalization. The details expressed, even, form but a small part of the whole of these multifarious necessaries and appliances for the use of the sick and hurt: and hence, it seems strange to designate them by a virtual misnomer, and to suffer them, a mere part of a multitudinous whole, to give a nomenclature for the appropriation. The generalization of the subject seems more proper; and the title of the appropriation now proposed seems to embrace that generalization.

It will be perceived that the sum of one thousand five hundred dollars has been appended to the estimates, for the purchase of surgical instruments. This requires some explanation. The instruments of the medical department of our service, are, confessedly, in a state of imperfection. Nay, notwithstanding the large sums heretofore annually paid for them, many are good for nothing, or, at least, indifferently passable. This is owing to the incorrect manner of procuring them without any responsible judge of their workmanship and pattern. But a more important fact must not be withheld. Much money has annually been spent for instruments, both good and indifferent, for twenty or thirty years past, and yet, where are they? Who can tell? Many are gone, very many. *That* the undersigned *can* tell. Whither, who can say? None having been responsible, in the slightest degree, for them—none seriously and officially charged with their custody, it would, indeed be difficult to say whither gone. But it avails not to speculate. Gone they are, and they must, if the navy exists, be replaced. The reorganization you have effected, will render it impossible, for cause, to put these unanswerable interrogatories in future. The defective and indifferent instruments still remaining ought to be sold. The proceeds of such sale, reverting to the medical appropriation, from which they were purchased, will, when effected, lessen virtually the grant solicited for the purchase of these indispensable portions of surgeons' necessaries and appliances. Under this candid reveal-

ment of the facts connected with these expensive outfits, it is not doubted that Congress will see occasion to make the grant.

One other grant is suggested as really needful, in the opinion of the undersigned, but as it is of novel character, he prefers asking you to leave the sum unnamed, requesting of Congress that whatever importance may be attached there, to the request, it may meet with a corresponding degree of liberality in the sum appropriated. The object referred to in the suggestion for a grant of money to meet it, is intimately connected with the efficiency of medical officers. It is, that a small compact medical and surgical library shall be authorized to be purchased for each vessel of war, in proportion to her size and capacity for the accommodation of books in the surgeon's department, and also for the hospitals and sick quarters of navy-yards. A due responsibility for these, well devised and rigidly enforced, would secure them always, for each successive cruise, subject only, to the losses and destruction incident to the disasters of the sea. Extensive and costly libraries are furnished by Government to the commanders of all ships in the navy, often embracing a large proportion of mere general literature. Professional works, so important to medical officers, should not be denied.

All which is most respectfully submitted by your obedient servant,  
WILLIAM P. C. BARTON.

Hon. A. P. UPSHUR,  
*Secretary of the Navy.*

*Abstract of bills paid by Thomas Hayes, Navy Agent, Philadelphia, from the 1st of October, 1841, to 31st October, 1842, under the appropriation of "medicines, &c."*

Date.	To whom paid:	Articles delivered.	Remarks.	Amount.
<b>1841.</b>				
Oct. 1	Abraham Levy.....	Bread, milk, &c.....	Sick quarters, navy yard	\$40 17
5	Henry Patton.....	Bread.....	Naval Asylum.....	102 30
5	S. E. Lane.....	Charcoal.....	Naval Asylum.....	13 33
5	A. D. Ashton.....	Vegetables, &c.....	Naval Asylum.....	14 50
5	A. D. Ashton.....	Hay.....	Naval Asylum.....	13 40
5	M. W. Aylwine.....	Slop clothing.....	Naval Asylum.....	31 05
5	C. Heishley.....	Beef.....	Naval Asylum.....	45 06
6	A. D. Ashton.....	Vegetables, &c.....	Naval Asylum.....	33 73
6	S. R. Reed.....	Repairing cart and wagon	Naval Asylum.....	9 23
6	Jno. K. Graham.....	Whiskey.....	Naval Asylum.....	9 59
18	Alex. Fullerton.....	Drugs, &c.....	Pensacola navy yard...	291 20
18	A. D. Ashton.....	Pitchers, &c.....	Naval Asylum.....	10 45
20	C. Hamilton.....	Coal.....	Naval Asylum.....	960 00
29	A. D. Ashton.....	Vegetables.....	Naval Asylum.....	11 50
29	Allibone & Troubat.....	Sperm oil.....	Naval Asylum.....	37 85
29	Crawford & Mooney.....	Horse-shoeing.....	Naval Asylum.....	2 62
29	John Colhoon.....	Corn.....	Naval Asylum.....	24 96
30	S. E. Lane.....	Charcoal.....	Naval Asylum.....	16 74
Nov. 1	John C. Clark.....	Stationary.....	Naval Asylum.....	27 56
1	Abraham Levy.....	Sundries.....	Sick-quarters, navy yard	27 72
3	A. D. Ashton.....	Vegetables.....	Naval Asylum.....	36 59
11	Benjamin Franklin...	Repairing wagon, &c....	Naval Asylum.....	25 75
11	A. D. Ashton.....	Straw, &c.....	Naval Asylum.....	14 63
11	Robert McCall.....	Crockery.....	Naval Asylum.....	3 00
12	Satts & Hines.....	Ice.....	Naval Asylum.....	12 75
12	A. D. Ashton.....	Clothing.....	Naval Asylum.....	232 85
12	A. S. Reigin.....	Candles.....	Naval Asylum.....	46 41
12	A. S. Reigin.....	Vinegar.....	Naval Asylum.....	3 56
12	C. Heishley.....	Beef.....	Naval Asylum.....	41 32
12	C. Heishley.....	Oats.....	Naval Asylum.....	5 00
19	J. J. & A. R. Perkins.	Muslin and flannel.....	Naval Asylum.....	4 08
24	C. Moore.....	Cupping.....	Sick quarters, navy yard	10 00
Dec. 2	Abraham Levy.....	Sundries.....	Sick quarters, navy yard	30 70
7	S. E. Lane.....	Charcoal.....	Naval Asylum.....	15 81
7	Allibone & Troubat.....	Sperm oil.....	Naval Asylum.....	83 50
9	A. D. Ashton.....	Clothing.....	Naval Asylum.....	39 66
9	C. Heishley.....	Beef.....	Naval Asylum.....	39 23
9	A. D. Ashton.....	Mutton, &c.....	Naval Asylum.....	31 26
10	A. D. Ashton.....	Vegetables.....	Naval Asylum.....	7 00
10	A. D. Ashton.....	Lampwick, &c.....	Naval Asylum.....	7 03
10	James McManus.....	Stove and pipe.....	Naval Asylum.....	24 40
15	McGrath & Fox.....	Stove and pipe.....	Naval Asylum.....	23 27
20	James K. Graham...	Whiskey.....	Naval Asylum.....	10 12
22	John Desham.....	Butter.....	Naval Asylum.....	7 10
23	Parker & Wright....	Carriage hire.....	Sick at navy yard.....	14 00
<b>1842.</b>				
Jan. 12	Abraham Levy.....	Bread, &c.....	Sick at navy yard.....	35 29
12	John Murray.....	Horse-shoeing.....	Naval Asylum.....	2 65
13	John Colhoon.....	Horse feed.....	Naval Asylum.....	21 80
22	A. Nelingen.....	Leeching.....	Sick quarters, navy yard	2 00
Feb. 17	Frederick Brown.....	Drugs, &c.....	Steamer Mississippi....	608 62
17	A. D. Ashton.....	Mutton, &c.....	Naval Asylum.....	32 57
17	A. D. Ashton.....	Hay.....	Naval Asylum.....	21 37
17	A. D. Ashton.....	Clothing.....	Naval Asylum.....	125 88
17	A. D. Ashton.....	Vegetables, &c.....	Naval Asylum.....	11 50
17	A. D. Ashton.....	Mutton, &c.....	Naval Asylum.....	36 17
17	A. D. Ashton.....	Brushes.....	Naval Asylum.....	18 25

## ABSTRACT—Continued.

Date.	To whom paid.	Articles delivered.	Remarks.	Amount.
1842.				
Feb. 17	A. D. Ashton .....	Vegetables .....	Naval Asylum .....	\$12 03
17	Henry Patton .....	Bread .....	Naval Asylum .....	112 15
17	Board of Health .....	Medical attendance .....	Sick quarters, navy yard	17 14
18	John C. Clark .....	Stationary .....	Naval Asylum .....	4 06
23	John K. Graham .....	Whiskey .....	Naval Asylum .....	8 08
23	John K. Graham .....	.....	Naval Asylum .....	6 59
28	C. S. Wright .....	Carriage hire .....	Sick quarters, navy yard	23 00
Mar. 9	C. Heishley .....	Beef .....	Naval Asylum .....	47 11
9	C. Heishley .....	Beef .....	Naval Asylum .....	49 65
12	A. D. Ashton .....	Clothing, &c. ....	Naval Asylum .....	109 50
12	A. D. Ashton .....	Vegetables .....	Naval Asylum .....	30 31
12	A. D. Ashton .....	Mutton, &c. ....	Naval Asylum .....	11 50
14	C. Rippergen .....	Cupping .....	Sick quarters, navy yard	2 00
14	Hogan & Thompson ..	Stationary .....	Naval Asylum .....	27 56
21	John Rosen & Son ..	Surgical instruments ..	Sick quarters, navy yard	8 25
April 9	Sarah Patten .....	Scrubbing and cleaning ..	Naval Asylum .....	8 25
9	Ann Thompson .....	Scrubbing and cleaning ..	Naval Asylum .....	8 25
9	E. Freeland .....	Scrubbing and cleaning ..	Naval Asylum .....	8 62
9	R. Buchanan .....	Butter, &c. ....	Naval Asylum .....	25 50
9	A. D. Ashton .....	Vegetables .....	Naval Asylum .....	11 47
14	S. E. Lane .....	Charcoal .....	Naval Asylum .....	73 78
15	W. O. Benthall .....	Painting .....	Naval Asylum .....	18 00
18	A. D. Ashton .....	Mutton, &c. ....	Naval Asylum .....	39 58
18	A. D. Ashton .....	Clothing, &c. ....	Naval Asylum .....	27 75
18	Hogan & Thompson ..	Stationary .....	Naval Asylum .....	5 75
19	M. Phillips .....	Painting .....	Naval Asylum .....	10 50
19	James Ewing .....	Painting .....	Naval Asylum .....	11 25
22	William Lane .....	Wood .....	Naval Asylum .....	14 06
22	Frederick Brown .....	Drugs, &c. ....	Sick quarters, navy yard	224 80
22	Frederick Brown .....	Drugs, &c. ....	Naval Asylum .....	65 19
23	A. D. Ashton .....	Crockery, &c. ....	Naval Asylum .....	18 83
23	C. Moore .....	Cupping .....	Sick quarters, navy yard	9 00
23	Robert Dunn .....	Horse-shoeing .....	Naval Asylum .....	10 12
23	Henry Patton .....	Bread .....	Naval Asylum .....	123 12
26	John K. Graham .....	Whiskey .....	Naval Asylum .....	9 25
26	C. Heishley .....	Beef and fish .....	Naval Asylum .....	47 28
26	C. Heishley .....	Beef and fish .....	Naval Asylum .....	40 22
29	C. P. Collins .....	Paints, &c. ....	Naval Asylum .....	34 63
29	A. Nebinger, jr. ....	Leeching .....	Sick quarters, navy yard	2 50
May 2	Thomas Kee .....	Straw and hay .....	Naval Asylum .....	11 80
2	Thomas Kee .....	Feed chest .....	Naval Asylum .....	3 00
2	Hogan & Thompson ..	Stationary .....	Naval Asylum .....	13 12
4	Abraham Levy .....	Bread and chickens .....	Sick quarters, navy yard	17 84
7	James K. Graham .....	Whiskey .....	Naval Asylum .....	8 66
10	Peters & McClung ..	Mending hose .....	Naval Asylum .....	11 62
18	A. D. Ashton .....	Mutton, &c. ....	Naval Asylum .....	26 81
18	A. D. Ashton .....	Vegetables .....	Naval Asylum .....	15 85
18	A. D. Ashton .....	Linen, &c. ....	Naval Asylum .....	22 37
18	Sarah Patton .....	Whitewashing .....	Naval Asylum .....	63 00
18	Philip Graba .....	Painting .....	Naval Asylum .....	3 00
18	W. O. Benthall .....	Painting .....	Naval Asylum .....	100 00
20	James Helsh .....	Harness .....	Naval Asylum .....	25 00
21	David Conrad .....	Repairing locks .....	Naval Asylum .....	11 81
23	Fullerton & Donelly ..	Clothing .....	Naval Asylum .....	665 57
25	E. Mount .....	Tables .....	Naval Asylum .....	26 00
June 13	R. Buchanan .....	Butter .....	Naval Asylum .....	29 52
13	A. D. Ashton .....	Mutton, &c. ....	Naval Asylum .....	28 52
14	W. E. Sherman .....	Shirts, &c. ....	Naval Asylum .....	251 12
Aug. 8	Thomas Harris .....	Orders 4th Aud'ts. ....	.....	348 00
8	Henry Patton .....	Bread .....	Naval Asylum .....	126 64
10	Watering Com. Phila.	Water rent .....	Naval Asylum .....	140 00

## ABSTRACT—Continued.

Date.	To whom paid.	Articles delivered.	Remarks.	Amount.
1842.				
Aug. 10	George Flowers.....	Hay.....	Naval Asylum.....	\$17 00
12	Board of Health.....	Medical attendance.....	Sick quarters, navy yard	15 71
17	W. E. Sherman.....	Shirts, &c.....	Naval Asylum.....	118 50
19	C. S. Wright.....	Carriage hire.....	Sick quarters, navy yard	20 00
23	George S. Blake.....	Requisition.....	Coast survey.....	250 00
Sept. 20	Edward Mitchell.....	Repairing chains.....	Naval Asylum.....	6 50
22	Henry Shively.....	Trusses.....	Naval Asylum.....	3 50
Oct. 25	Henry Tenant.....	Hose and fixtures.....	Sick quarters, navy yard	15 37
				7,121 64

NAVY AGENT'S OFFICE,  
Philadelphia, November 5, 1842.

THOMAS HAYES, Navy Agent.

F.

*Estimate for surgeons' necessaries and appliances for the sick and hurt of the naval service, including the marine corps, for the moiety of the year 1843, ending on the 30th of June.*

Mediterranean	-	-	One frigate first class, outfit	-	-	1,800	1,800	
			Three sloops, outfit each	-	-	1,206	3,600	
			Three brigs and schooners, outfit each	-	-	800	2,400	
			One ship-of-the-line	-	-	2,500	2,500	
								\$10,300 00
Brazil	-	-	Same as Mediterranean	-	-	-	-	10,300 00
Pacific	-	-	One frigate first class, outfit	-	-	1,800	1,800	
			Four sloops, outfit each	-	-	1,200	4,800	
			Four brigs and schooners, outfit each	-	-	800	3,200	
								9,800 00
East Indies	-	-	One frigate, outfit	-	-	1,800	1,800	
			Two sloops, outfit each	-	-	1,200	2,400	
			Two brigs and schooners, outfit each	-	-	800	1,600	
								5,800 00
Home	-	-	One frigate first class, outfit	-	-	1,600	1,600	
			Four sloops, outfit each	-	-	1,600	4,000	
			Four brigs and schooners, outfit each	-	-	600	2,400	
								8,000 00
Africa	-	-	Two sloops of 20 guns, outfit	-	-	800	1,600	
			Brigs and schooners carrying 40 guns, outfit for 40 guns	-	-	1,600	1,600	
								3,200 00
Steamers	-		Steamer Union, outfit	-	-	700	700	
			Steamer Poinsett, outfit	-	-	450	450	
			Steamer Engineer, outfit	-	-	250	250	
								1,400 00
Receiving vessels			Receiving ship Ohio, already outfitted, additional outfit	-	-	250	250	
			Receiving vessel North Carolina, already outfitted, additional outfit	-	-	250	250	
								500 00
Norfolk navy-yard	-		Experiment receiving vessel at Philadelphia nothing, the yard dispensary serving.	-	-			
Philadelphia navy-yard	-		Outfitted, additional outfit	-	-	350	350	
			Outfitted, additional outfit for a dispensary building, and steward 210	-	-	850		
						210		
							1,060	

## ESTIMATE—Continued.

New York navy-yard	Outfitted, additional outfit	-	-	\$350	\$350	
Boston navy-yard	Outfitted, additional outfit	-	-	250	250	
Portsmouth, N. Hampshire navy-yard	Outfitted, additional outfit	-	-	150	150	
Pensacola navy-yard	Outfitted, additional outfit	-	-	250	250	
Charleston, S. C. station	Outfit	-	-	350	350	
						\$2,760 00
Norfolk hospital	Additional outfit	-	-	800	800	
Philadelphia hospital	Additional outfit	-	-	450	450	
New York hospital	Additional outfit	-	-	800	800	
Chelsea hospital	Additional outfit	-	-	800	800	
						2,850 00
	The estimates for additional outfits are to provide for stewards and other aid, and other necessaries additional. Instead of any distinct appropriation for marine corps, additional to supercede appropriations for marine corps			-	-	2,120 00
	Total	-	-	-	-	57,030 00
Additional estimates for the whole of the fiscal year ending 30th June, 1844, viz.: Two thirds the amount severally of all the preceding estimates for each purpose already specifically estimated for is						
				\$38,020 33		\$38,020 33
For meeting any un contemplated but necessary outlays, which, from the remoteness of the time, can not be anticipated, and to supersede the necessity of any distinct appropriation for marine corps, the further sum of						
				4,586 67		4,586 67
Additional aid for nurses, stewards, gardeners, and clerks to hospitals, &c.						
				1,360 00		1,360 00
Additional estimates for either the moiety of the year 1843 or the fiscal year thereafter, ending June 30, 1844, for or to be divided as may be expedient throughout the whole eighteen months, whatever balance may remain unexpended in the appropriation for the marine corps for the year 1842, at the expiration of that year, to be added to these estimates,* from which the ship Pennsylvania and other objects can be supplied.						
Total estimates for the fiscal year ending on the 30th of June, 1844						
				-	-	43,967 00

\* There remains of this appropriation now in the Treasury \$1,051 58. In hands of the quartermaster, November 23, a further sum of \$793 64, and few unliquidated demands will accrue by the end of the year, making a total unexpended balance at this date of \$1,845 22.—(November 26, 1842.)

For surgical instruments one thousand five hundred dollars (explained in preamble accompanying.

WILLIAM P. C. BARTON.

DECEMBER 1, 1842.

## F—No. 3.

*Waiting orders.*

Estimate of the pay required for the commissioned and warrant officers, waiting orders, for the half year ending 30th June, 1843.

38 captains	-	-	-	-	\$47,500
69 commanders	-	-	-	-	62,100
99 lieutenants	-	-	-	-	59,400
19 surgeons	-	-	-	-	15,200
5 chaplains	-	-	-	-	2,000
3 chief engineers	-	-	-	-	1,800
3 1st assistant engineers	-	-	-	-	1,050
6 2d assistant engineers	-	-	-	-	1,500
9 3d assistant engineers	-	-	-	-	525
					<hr/>
					191,075

Add for 46 midshipmen, who, after examination, may be entitled to be arranged as passed midshipmen, in addition to their pay as midshipmen

6,900

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NOTE.—The difference is occasioned by the change in the number and rank of officers.

*Waiting orders.*

Estimate of the pay required for the commissioned and warrant officers, waiting orders, for the year ending 30th June, 1844.

38 captains	-	-	-	-	\$95,000
69 commanders	-	-	-	-	124,200
99 lieutenants	-	-	-	-	118,800
19 surgeons	-	-	-	-	30,400
5 chaplains	-	-	-	-	4,000
3 chief engineers	-	-	-	-	3,600
3 1st assistant engineers	-	-	-	-	2,100
6 2d assistant engineers	-	-	-	-	3,000
9 3d assistant engineers	-	-	-	-	1,050
					<hr/>
					382,150

Add for 46 midshipmen, who, after examination, may be entitled to be arranged as passed midshipmen, in addition to their pay as midshipmen

13,800

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NOTE.—The difference is occasioned by the change in the number and rank of officers.

No. 4.

HEADQUARTERS OF THE MARINE CORPS,  
Washington, November 19, 1842.

SIR: I enclose to the Department estimates for the Marine corps for eighteen months from the 1st January next.

In the first half year of 1843, I have caused to be inserted items for purchasing ground, and commencing the building of barracks, at four stations. Appropriations for this object were twice, at least, made by Congress, and for some unaccountable cause, were not used for that purpose and returned into the Treasury.

I remain, with great respect, your most obedient servant,  
ARCH. HENDERSON,  
Colonel Commandant.

Hon. A. P. UPSHUR,  
Secretary of the Navy.

HEADQUARTERS OF THE MARINE CORPS,  
Washington, November 14, 1842.

SIR: I have the honor to report to the department that, in the course of the present year, I have inspected the men and their quarters at Portsmouth, New Hampshire, Charlestown, Massachusetts, New York, Philadelphia, and Norfolk. At each of those stations there is a force so small as to be inadequate to afford protection to the public property. The accompanying general return of the corps will show the force at each of those stations, as follows: At Portsmouth, 19 privates; at Charlestown, 51 privates; at New York, 58 privates; at Philadelphia, 37 privates; and, at Norfolk, 55 privates. At Pensacola, there are 25, and, at headquarters, 73 privates—20 of these are to be shortly sent on board the steamer Union.

At Portsmouth there are two men sick, and one on daily duty, and four as a boat's crew, leaving but twelve for guard duty; and the daily guard is but four privates, which can furnish but one sentinel.

At Charlestown, the last muster-roll shows seven privates sick, four on daily duty, and four on police duty, leaving but thirty-four for guard duty. In regular military service, not more than one third of the effective strength is on guard at one time. Commodore Nicholson, in a letter to the department of recent date, says, that eight or ten sentinels are required for the navy-yard—one, at least, is required at the barracks—making eleven sentinels on post constantly. To accomplish this, a guard would be composed of thirty-three privates; and, to furnish a regular and proper relief to this, would take sixty-six effective privates; each private of a guard is eight hours of the twenty-four on post.

At New York, the last muster-roll shows forty-two effective men to furnish the same number of sentinels as are required on the Boston station.

The muster-rolls of the other four stations show about the same results.

Portsmouth is the only station where the barracks can be considered as permanent. At Boston and Philadelphia, the ground on which the barracks are now placed is required for naval purposes; and the barracks themselves are too small for the number of officers and men.

At New York, Norfolk, and Pensacola, there are no barracks at all. If guards of marines are to be employed on those stations, the propriety of building barracks to receive them is evident. The alms-house at Brooklyn



is now rented for the marines there, and temporary quarters are provided for the guards at Norfolk and Pensacola. In the estimates for the corps, an appropriation for purchasing ground and commencing these barracks will be asked for, and I trust it will meet your sanction.

By the general returns, it appears that there are now on board of the several ships of war, 2 captains, 7 first lieutenants, 8 second lieutenants, 59 sergeants, 66 corporals, and 647 privates. Captains Dulany, Macomber, and Brevoort, are under orders to join the *Home*, the *Brazil*, and the *Pacific* squadrons—making five captains on sea duty; three are in the staff, and one, from a paralytic affection, unfit for active duty, leaving but four captains for a relief to those on sea service. When the ships receive the number of lieutenants to which they are entitled, there will be at sea 18 first and 19 second lieutenants.

In addition to the vessels now in commission, guards will shortly be wanting for the steamer *Union* and the squadron for the coast of Africa; one hundred and eight privates, with the usual number of non-commissioned officers, will be required, increasing the number at sea from 647 to 755 privates.

I would further call your attention to the fact, that, though so large a portion of the corps is at sea, there is but one single vessel that has a full guard—the *Fairfield*, sloop-of-war. It will also appear from the accompanying table (marked No. 2), that, to provide full guards for the different vessels now, and soon to be in commission, a force considerably larger than the whole present strength of the corps will be necessary. The experience of our own service, as well that of the English, shows that not less than one private marine for each gun should be on board a ship-of-war. Table No. 2 carries out this principle; and, exclusive of the steamers and receiving-ships, gives 878 privates for sea duty during the ensuing year. Fifty on board each receiving-ship, and twenty on board each steamer, would raise the number to over 1,100. The most effective crew for steamers is yet undecided. In reports to the department, I have heretofore hazarded an opinion that soldiers, drilled both as infantry and artillery, could not fail to be essentially useful in them. So far as I have been able to obtain further information on this interesting point, it has tended to strengthen this impression; and I hope I do not exceed my appropriate limits in bringing this subject to the attention of the department.

It will appear from the general report, that the only surplus over the legal strength of the corps is now in the non-commissioned officers and music.

The present year's estimates provide for 1,068 privates, including the 68 servants for officers. The corps is, therefore, 51 short in its privates, and 86 over in non-commissioned officers and music—making, in all, 35 over its proper strength. At the end of this month, the excess over its numerical legal strength will be very small. It does not follow that an increase of the marine corps necessarily increases public expenditure. For every additional marine on board a ship-of-war, there is a landsman less. At the navy-yards watchmen are now employed to give security to the public interests. An increase of the corps would render this expense unnecessary, and would afford additional security by a guard under naval law, and, consequently, responsible for its efficiency and fidelity.

I remain, with great respect, your most obedient servant,

ARCHIBALD HENDERSON,

*Colonel Commandant.*

Hon. A. P. URSHUR, *Secretary of the Navy.*

## General return of the officers, non-commissioned officers, musicians, and

Stations, &c.	Colonel Comdt.	Lieut. Colonel.	Majors.	Captains.	1st Lieutenants.	2d Lieutenants.	Non-com'd staff.	1st Sergeants.	Sergeants.	Corporals.	Musicians attached to the band.	Drummers.
Headquarters.....	1	.....	.....	4	5	5	4	6	14	7	19	7
Guard at the navy yard, D. C.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....
New York.....	.....	.....	1	1	1	2	.....	1	8	5	.....	1
Charlestown, Massachusetts.....	.....	.....	1	1	1	1	.....	1	5	4	.....	2
Gosport, Virginia.....	.....	.....	.....	.....	.....	2	.....	1	7	9	.....	.....
Philadelphia.....	.....	1	.....	.....	2	1	.....	1	6	3	.....	.....
Portsmouth, New Hampshire.....	.....	.....	1	.....	1	.....	.....	1	3	1	.....	.....
Pensacola, West Florida.....	.....	.....	.....	.....	1	.....	.....	1	4	3	.....	1
Asst. Q. M.'s office, Philadelphia.....	.....	.....	.....	.....	1	.....	.....	1	1	.....	.....	.....
Norfolk, Va., clothing store.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Receiving ship Pennsylvania.....	.....	.....	.....	.....	1	.....	.....	1	3	5	.....	2
Receiving ship North Carolina.....	.....	.....	.....	1	.....	1	.....	1	2	3	.....	1
Receiving ship Ohio.....	.....	.....	.....	.....	.....	1	.....	1	3	2	.....	.....
Steamer Fulton.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....	.....
Steamer Mississippi.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....	1
Steamer Missouri.....	.....	.....	.....	.....	.....	1	.....	1	1	2	.....	1
Delaware 74.....	.....	.....	.....	1	.....	2	.....	1	2	4	.....	1
Columbus 74.....	.....	.....	.....	.....	1	1	.....	1	2	3	.....	1
Raze Independence.....	.....	.....	.....	.....	1	1	.....	1	2	3	.....	1
Frigate Constellation.....	.....	.....	.....	.....	1	.....	.....	1	2	3	.....	1

*ri vates, of the United States Marine Corps, for the month of Oct'r, 1842.*

Fifers.	Privates.	Aggregate.	Remarks.
5	70	147	Twelve sergeants, 1 corporal, and 23 privates, on daily duty as clerks, mechanics, &c.; and 12 privates returned here are boys learning music. Captain Nicholson, Lieuts. Sloan, Caldwell, and Tansill, on leave of absence; Lieut. A. S. Taylor "sick." Three of the captains returned here are attached to the staff; two of the first lieutenants, to wit, Lieut. Carter attached to the quartermaster's department, and Lieut. Hardy to the paymaster's department.
....	10	12	This guard is furnished daily, from headquarters
1	52	73	One sergeant returned here is on board brig Somers; and 1 private ordered from Gosport, Virginia, to this post, 11th ultimo.
1	51	68	.....
1	34	54	Three of the privates returned here are insane, in naval hospital, Norfolk, Virginia.
1	37	52	One corporal and 6 privates returned here are on board receiving vessel Experiment.
1	19	27	.....
....	25	35	September 30, 1842. Lieutenant Gillespie absent since 9th August last.
....	1	4	September 30, 1842
....	.....	1	Lieutenant Stark, commanding marines on board receiving ship Pennsylvania, furnished this return.
1	38	51	.....
1	30	40	.....
....	21	28	.....
1	11	15	.....
1	19	24	June 30, 1842.
1	28	35	September 30, 1842, when this guard was 1 second lieutenant, 2 sergeants, 2 corporals, 2 musicians, and 26 privates; since which, 2 privates transferred to New York, and 4 privates joined from New York, which make this number.
1	52	64	June 30, 1842.
1	54	64	This guard joined from Charlestown, Massachusetts, in August last.
....	33	41	.....
1	20	29	April 30, 1842.

	Non-commissioned sergeants.	Sergeants.	Corporals.	Musicians.	Drummers.	Fifers.	Privates.	Aggregate.
*In October, 1842.....	4	124	100	19	33	30	949	1,259
Add for officers' servants.....	.....	.....	.....	.....	.....	.....	68	68
Allowed by law.....	4	124	100	19	33	30	1,017	1,327
.....	4	80	30	.....	30	30	1,000	1,224
.....	.....	44	20	19	3	.....	17	103

GENERAL RETURN

Stations, &c.	Colonel Comdt.	Lieut. Colonel.	Majors.	Captains.	1st Lieutenants.	2d Lieutenants.	Non-com'd staff.	1st Sergeants.	Sergeants.	Corporals.	Musicians attached to the band.	Drummers.
Frigate Congress.....					1	1	.....	1	3	3	.....	1
Frigate Constitution.....					1	.....	.....	1	2	3	.....	1
Frigate United States.....					1	.....	.....	1	2	3	.....	1
Frigate Columbia.....					1	.....	.....	1	2	3	.....	1
Sloop Ontario.....								1	1	2	.....	.....
Sloop Falmouth.....								1	1	2	.....	1
Sloop Decatur.....								1	.....	2	.....	.....
Sloop Vandalia.....								1	1	2	.....	1
Sloop John Adams.....								1	.....	2	.....	.....
Sloop Fairfield.....								1	.....	2	.....	1
Sloop Marion.....								1	1	2	.....	1
Sloop Preble.....								1	.....	1	.....	.....
Sloop Yorktown.....								1	.....	3	.....	1
Sloop Boston.....								1	.....	2	.....	1
Sloop Concord.....								1	1	2	.....	1
Sloop Cyane.....								1	1	2	.....	1
Sloop Dale.....								1	.....	1	.....	1
Waiting orders.....				1	.....	1	.....	.....	.....	.....	.....	.....
Recruiting service, New York.....				1	.....	.....	.....	1	.....	.....	.....	.....
Recruiting service, Baltimore, Md.....				1	.....	.....	.....	1	.....	1	.....	.....
Under orders.....			1	2	.....	.....	.....	.....	.....	.....	.....	.....
On leave of absence.....					1	.....	.....	.....	.....	.....	.....	.....
Total.....	1	1	4	13	20	20	4	43	81	100	19	33

HEADQUARTERS OF THE MARINE CORPS,  
*Adjutant and Inspector's Office, Washington, Nov'r 13, 1842.*

—Continued.

Fifers.	Privates.	Aggregate.	Remarks.
1	38	49	June 30, 1842, when this guard was 1 first lieutenant, 1 second lieutenant, 5 sergeants, 3 corporals, 2 musicians, and 32 privates; since which, 1 sergeant transferred to Portsmouth, New Hampshire, and 6 privates joined from Portsmouth, New Hampshire.....
....	38	46	September 30, 1842, when this guard was 1 second lieutenant, 3 sergeants, 3 corporals, 1 drummer, and 39 privates; since which, First Lieutenant Lang joined, and Second Lieutenant A. S. Taylor and 1 private transferred.....
1	34	43	June 30, 1842.....
1	35	44	June 30, 1842, when this guard was 1 first lieutenant, 3 sergeants, 3 corporals, 2 musicians, and 36 privates; since which, 1 private joined at New York.....
....	15	19	September 30, 1842.....
1	16	22	August 31, 1842.....
1	11	15	June 30, 1842.....
1	20	26	April 31, 1842.....
....	20	23	June 30, 1842.....
1	28	33	March 31, 1842, when this guard was 2 sergeants, 2 corporals, 1 drummer, 1 fifer, and 16 privates; since, 1 sergeant, 1 fifer, and 3 privates, transferred to frigate Brandywine, and 1 fifer and 15 privates joined from frigate Brandywine.....
1	17	23	October 30, 1842. One private sick, in naval hospital, Norfolk, Virginia.
....	11	13	May 31 <sup>st</sup> 1842.....
....	12	17	March 31, 1842.....
1	9	14	April 30, 1842.....
1	11	17	June 30, 1842.....
1	15	21	April 30, 1842.....
1	11	15	March 31, 1842, when this guard was 1 sergeant, 2 corporals, 1 drummer, 1 fifer, and 11 privates; since which, 1 corporal joined sloop St. Louis. Captain Job G. Williams, and Lieutenant Josiah Watson, at Washington city, D. C.....
....	.....	2	.....
....	.....	2	.....
....	3	6	.....
....	.....	3	Major Twiggs and Captain Linton since 13th ultimo, and Capt. Brevoort since 1st instant.....
....	.....	1	Lieutenant Garland, since 13th August last.....
30	949	1,318	

P. G. HOWLE, *Adjutant and Inspector.*

*This table shows the number of marines afloat on the 1st November, 1842.*

Vessels.	Rate.	Captains.	1st Lieutenants.	2d Lieutenants.	1st Sergeants.	Sergeants.	Corporals.	Drummers.	Fifers.	Privates.	Aggregate.
Receiving ship Pennsylvania	120	1	1	1	3	3	2	1	1	38	51
Receiving ship North Carolina	92	1	1	1	2	3	3	1	1	30	40
Receiving ship Ohio	92	1	1	1	9	2	1	1	1	21	28
Steamer Fulton	1	1	1	1	2	2	1	1	1	11	15
Steamer Mississippi	1	1	1	1	2	2	1	1	1	19	24
Steamer Missouri	1	1	1	1	1	1	1	1	1	28	35
Delaware 74	92	1	1	2	2	4	1	1	1	52	64
Columbus 74	74	1	1	1	2	3	3	1	1	54	64
Razee Independence	64	1	1	1	2	3	3	1	1	33	41
Frigate Constellation	42	1	1	1	2	3	3	1	1	20	29
Frigate Congress	54	1	1	1	3	3	3	1	1	38	49
Frigate Constitution	54	1	1	1	2	3	3	1	1	38	46
Frigate United States	54	1	1	1	2	3	3	1	1	34	43
Frigate Columbia	54	1	1	1	2	3	3	1	1	35	44
Sloop Ontario	20	1	1	1	2	2	1	1	1	15	19
Sloop Falmouth	24	1	1	1	2	2	1	1	1	16	22
Sloop Decatur	18	1	1	1	2	2	1	1	1	11	15
Sloop Vandalia	24	1	1	1	2	2	1	1	1	20	26
Sloop John Adams	24	1	1	1	2	2	1	1	1	20	23
Sloop Fairfield	24	1	1	1	2	2	1	1	1	28	33
Sloop Marion	18	1	1	1	2	2	1	1	1	17	23
Sloop Preble	18	1	1	1	1	1	1	1	1	11	13
Sloop Yorktown	18	1	1	1	3	3	1	1	1	12	17
Sloop Boston	24	1	1	1	2	2	1	1	1	9	14
Sloop Concord	24	1	1	1	2	2	1	1	1	11	17
Sloop Cyane	24	1	1	1	2	2	1	1	1	15	21
Sloop Dale	18	1	1	1	1	1	1	1	1	11	15
<b>Total</b>		2	7	8	27	32	66	22	20	647	831

	Colonel.	Lieut. Colonel.	Majors.	Captains.	1st Lieutenants.	2d Lieutenants.	Non-com'd Sergeants.	Sergeants.	Corporals.	Drummers.	Fifers.	Privates.
Number allowed by law	1	1	4	13	20	20	4	80	80	30	30	1,000
Number afloat, 1st November, 1842	1	1	2	7	8	8	5	59	65	22	20	647
	1	1	4	11	13	12	4	21	14	8	10	353

HEADQUARTERS OF THE MARINE CORPS,  
*Adjutant and Inspector's Office, Washington, Nov'r 11, 1842.*  
 P. G. HOWLE, *Adjutant and Inspector.*

## No. 2.

*This table shows the supposed number of marines required for sea service on the 1st January, 1843, allowing one private for each gun the respective vessels carry.*

Vessels.	Rate.	Captains.	1st Lieutenants.	2d Lieutenants.	1st Sergeants.	Sergeants.	Corporals.	Drummers.	Fifers.	Privates.	Aggregate.
Receiving ship Pennsylvania.....	120	1	1	1	1	4	6	2	2	120	138
Receiving ship North Carolina.....	92	1	1	1	1	3	4	1	1	92	105
Receiving ship Ohio.....	92	1	1	1	1	3	4	1	1	92	105
Steamer Fulton.....	..	1	..	1	2	3	1	1	..	42	51
Steamer Mississippi.....	..	1	..	1	2	3	1	1	..	42	51
Steamer Missouri.....	..	1	..	1	2	3	1	1	..	42	51
Steamer Union.....	..	..	1	1	..	2	1	1	..	*20	26
Delaware 74.....	92	1	1	1	1	3	4	1	1	92	105
Columbus 74.....	74	1	1	1	1	3	4	1	1	74	87
Razee Independence.....	64	1	1	1	1	2	3	1	1	64	75
Frigate Constellation.....	42	..	1	..	1	2	3	1	1	42	51
Frigate Congress.....	54	..	1	..	1	2	3	1	1	54	63
Frigate Constitution.....	54	..	1	..	1	2	3	1	1	54	63
Frigate United States.....	54	..	1	..	1	2	3	1	1	54	63
Frigate Columbia.....	54	..	1	..	1	2	3	1	1	54	63
Sloop Ontario.....	20	..	1	1	1	2	1	1	..	20	27
Sloop Falmouth.....	24	..	1	1	1	2	1	1	..	24	31
Sloop Decatur.....	18	..	1	..	1	1	2	1	1	18	25
Sloop Vandalia.....	24	..	1	1	1	2	1	1	..	24	31
Sloop John Adams.....	24	..	1	1	1	2	1	1	..	24	31
Sloop Fairfield.....	24	..	1	1	1	2	1	1	..	24	31
Sloop Marion.....	18	..	1	1	1	2	1	1	..	18	25
Sloop Preble.....	18	..	1	1	1	2	1	1	..	18	25
Sloop Yorktown.....	18	..	1	1	1	2	1	1	..	18	25
Sloop Boston.....	24	..	1	1	1	2	1	1	..	24	31
Sloop Concord.....	24	..	1	1	1	2	1	1	..	24	31
Sloop Cyane.....	24	..	1	1	1	2	1	1	..	24	31
Sloop Dale.....	18	..	1	1	1	2	1	1	..	18	25
Sloop Vincennes.....	24	..	1	1	1	2	1	1	..	24	31
2 Sloops.....	40	..	2	..	2	2	4	2	2	40	54
2 Brigs.....	24	..	..	..	2	..	4	..	..	24	30
2 Schooners.....	24	..	..	..	2	..	4	..	..	24	30
Total.....	..	6	18	19	35	50	91	32	32	1,325	1,611

\* One bugler is also ordered to this vessel.

HEADQUARTERS OF THE MARINE CORPS,

Adjutant and Inspector's Office, Washington, Nov'r 11, 1842.

P. G. HOWLE, Adjutant and Inspector.

HEADQUARTERS OF THE MARINE CORPS,  
QUARTERMASTER'S DEPARTMENT,  
*Washington, November 19, 1842.*

SIR: I have the honor to transmit, herewith, in compliance with your instructions, two sets of triplicate estimates for the support of the Quartermaster's Department, from the 1st of January to the 30th of June, 1843; and from the 1st of July, 1843, to the 30th of June, 1844.

These estimates vary from those of last year in the item of provisions \$6,787 59, and in that of clothing \$2,964 89, in consequence of instructions received by the paymaster from the Treasury Department to estimate for those allowances for his clerks, and for officers' servants; and also for premiums to men for re-enlisting under act of the 2d of March, 1835, all of which had heretofore been estimated for by this Department.

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

AUG. A. NICHOLSON,  
*Quartermaster Marine Corps.*

Colonel A. HENDERSON,  
*Commandant Marine Corps, Washington, D. C.*

*Estimate of the expenses of the Marine Corps from the 1st of January to the 30th of June, 1843.*

There will be required for the support of the Quartermaster's Department of the Marine Corps, from the 1st of January to the 30th of June, 1843, in addition to the balances remaining on hand on the 1st of January, 1843, the sum of \$242,124 14.

1st. For provisions for the non-commissioned officers, musicians, privates, servants, and washerwomen, serving on shore	\$19,128 08
2d. For clothing	20,349
3d. For fuel	8,137 06
4th. For the purchase of a site, and to commence the erection of barracks at Charlestown, Massachusetts	50,000
For the purchase of a site, and to commence the erection of barracks at Brooklyn, New York	50,000
For the purchase of a site, and to commence the erection of barracks at Gosport, Virginia	50,000
To commence the erection of barracks at Pensacola	25,000
5th. For keeping barracks in repair, and for rent of temporary barracks	3,000
6th. For transportation of officers, non-commissioned officers, musicians, and privates, and expenses of recruiting	4,000
7th. For medicines, hospital supplies, surgical instruments, and pay of matron and hospital stewards	2,120
8th. For military stores, pay of armorers, keeping arms in repair, accoutrements, ordnance stores, flags, drums, fifes, and other instruments for the band	1,400
9th. For contingencies, viz.: freight, ferriage, toll, wharfage and cartage, per-diam allowance for attending courts martial and courts of inquiry, compensation to judges advocate,	



## ESTIMATE—Continued.

house-rent, where no public quarters are assigned, per-diem allowance to enlisted men on constant labor, expenses of burying deceased marines, printing, stationery, forage, postage on public letters, expenses in pursuit of deserters, candles and oil, straw, barrack furniture, bed-sacks, spades, axes, shovels, picks, carpenters' tools, and for the purchase and keeping of a horse for the messenger

\$14,221 25

247,355 39

Respectfully submitted.

AUG. A. NICHOLSON,  
Quartermaster Marine Corps.

## No. 1.—PROVISIONS.

For whom required.	Enlisted men.	Washerwomen.	Matron.	Servants.	Clerks.	Total.	Rations per day at 19 cents.	Rations per day at 20 cents.	Aggregate amount.
For non-commissioned officers, musicians, privates, and washerwomen.....	517	34	1	.....	.....	552	1	.....	\$18,983 28
For clerks.....	.....	.....	.....	.....	4	4	.....	1	144 80
Total amount.....	.....	.....	.....	.....	.....	.....	.....	.....	19,128 08

## No. 2.—CLOTHING.

For whom required.	Enlisted men.	Servants.	Clerk.	Total.	Amount.
For non-commissioned officers, musicians, and privates, at \$33 per annum.....	1,156	.....	.....	1,156	\$19,074 00
For 150 watch coats, at \$8 50 each.....	.....	.....	.....	.....	1,275 00
Total amount.....	.....	.....	.....	.....	20,349 00



*Estimate of the expenses of the Quartermaster's Department of the Marine Corps for the year commencing the 1st of July, 1843, and ending the 30th of June, 1844.*

There will be required for the support of the Quartermaster's Department of the Marine Corps during the year commencing on the 1st of July, 1843, and ending on the 30th of June, 1844, in addition to the balances remaining on hand on the 30th of June, 1843, the sum of \$134,570 92.

1st. For provisions	-	-	-	-	\$38,678 80
2d. For clothing	-	-	-	-	40,698
3d. For fuel	-	-	-	-	16,274 12
4th. For repairs of barracks, and for rent of temporary barracks	-	-	-	-	6,000
5th. For transportation of officers, non-commissioned officers, musicians, and privates, and expenses of recruiting	-	-	-	-	8,000
6th. For medicines, hospital supplies, surgical instruments, and pay of matron and stewards	-	-	-	-	4,140
7th. For military stores, pay of armorers, keeping arms in repair, accoutrements, ordnance stores, flags, drums, fifes, and other instruments	-	-	-	-	2,800
8th. For contingencies; viz., freight, ferrage-toll, wharfage and cartage, compensation to judges advocate, per-diem for attending courts martial and courts of inquiry, house-rent, where no public quarters are assigned, per diem to enlisted men on constant labor, burial of deceased marines, printing, stationery, forage, postage, pursuit of deserters, candles, oil, straw, bed-sacks, barrack furniture, spades, shovels, axes, picks, carpenters' tools; and the keeping of a horse for the messenger	-	-	-	-	17,980

134,570 92

Respectfully submitted.

AUG. A. NICHOLSON, *Quartermaster Marine Corps.*

No. 1.—PROVISIONS.

For whom required.	Enlisted men.	Washerwomen.	Matron.	Servants.	Clerks.	Total.	Rations at 19 cents.	Rations at 20 cents.	Amount.
Non-commissioned officers, musicians, privates, and washerwomen .....	517	34	1	.....	.....	552	1	.....	\$38,386 09
Clerks .....	.....	.....	.....	.....	4	.....	.....	.....	292 80
Total amount.....	.....	.....	.....	.....	.....	.....	.....	.....	38,678 80

ESTIMATE—Continued.

No. 2.—CLOTHING.

For whom required.	Enlisted men.	Servants.	Clerks.	Total.	Amount.
Non-commissioned officers, musicians, and privates, at \$33 per annum .....	1,156			1,156	\$38,148 00
300 watch coats, at \$8 50 each .....					2,550 00
Total amount .....					40,698 00

No. 3.—FUEL.

For whom required.	Number.	Fuel for each.			Total fuel.			Amount.
		Cords.	Feet.	Inches.	Cords.	Feet.	Inches.	
Colonel commanding .....	1				36	4		
Lieutenant colonel south of latitude 39 .....	1				26			
Major south of latitude 39 .....	1				26			
Major north of latitude 39 .....	3	29			87			
Captains north of latitude 43 .....	1				24	4	8	
Captains north of latitude 39 .....	2	23	6		47	4		
Captains south of latitude 39 .....	3	21	2		63	6		
Staff south of latitude 39 .....	3	26			78			
Staff north of latitude 39 .....	1				29			
Lieutenants north of latitude 43 .....	2	19	1	4	38	2	8	
Lieutenants north of latitude 39 .....	12	18	4		222			
Lieutenants south of latitude 39 .....	14	16	4		231			
Non-commissioned officers, musicians, pri- vates, servants, and washerwomen, north of latitude 40 .....	239	1	5		388	3		
Non-commissioned officers, musicians, pri- vates, servants, and washerwomen, south of latitude 40 .....	370	1	4		555			
Clerk to paymaster .....	1				2	2	8	
Hospital matron .....	1				1	4		
Commanding officer's office at Portsmouth, New Hampshire .....	1				8	5	4	
Guard room .....	1				25			
Hospital .....	1				19	1	4	
Mess room .....	1				4	1	4	
Offices of the assistant quartermaster and commanding officers at Philadelphia, New York, and Charlestown .....	4	8			32			
Guard rooms at Philadelphia, New York, and Charlestown .....	3	24			72			
Hospitals at Philadelphia, New York, and Charlestown .....	3	18	4		55	4		

## No. 3—Continued.

For whom required.	Number.	Fuel for each.			Total fuel.			Amount.
		Cords.	Feet.	Inches.	Cords.	Feet.	Inches.	
Mess rooms at Philadelphia, New York, and Charlestown.....	3	4	.....	.....	12	.....	.....	.....
Offices of the commandant and staff, and commanding officers at headquarters Norfolk and Pensacola.....	7	7	.....	.....	49	.....	.....	.....
Hospital at headquarters.....	1	.....	.....	.....	33	.....	.....	.....
Hospital at Norfolk and Pensacola.....	2	16	4	.....	33	.....	.....	.....
Guard room at headquarters navy yard Washington, Norfolk, and Pensacola ...	4	21	.....	.....	84	.....	.....	.....
Mess rooms at headquarters Norfolk and Pensacola.....	3	3	4	.....	10	4	.....	.....
Armory at Washington.....	1	.....	.....	.....	30	.....	.....	.....
.....	.....	.....	.....	.....	2,324	7	.....	.....
Which, at \$7 per cord, is .....	.....	.....	.....	.....	.....	.....	.....	16,274 12

HEADQUARTERS MARINE CORPS,  
Paymaster's Office, November 19, 1842.

SIR: Herewith you will receive triplicate estimates for the pay department of the marine corps for six months, beginning the 1st of January, 1843, and ending the 30th June, 1843; also triplicate estimates for the year beginning the 1st of July, 1843, and ending the 30th of June, 1844.

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

GEO. W. WALKER,

*Paymaster Marine Corps.*

Colonel ARCHIBALD HENDERSON,

*Commandant Marine Corps, Headquarters.*

*Detailed estimate of pay and subsistence of officers, and pay of non-commissioned officers, musicians, and privates, of the marine corps of the United States, from the 1st of January, 1843, to the 30th of June, 1843, inclusive.*

Rank and grade.	Number.	PAY.				SUBSISTENCE.			Aggregate.	
		Pay per month.	Extra pay per month.	Number of servants at \$8 per month.	Number of servants at \$7 per month.	Total.	Number of rations per day, at 20 cents per ration.	Number of extra or double rations per day, at 20 cents per ration.		Total.
Colonel commandant - - - -	1	75	-	-	2	\$534 00	6	6	\$434 40	\$968 40
Lieutenant colonel - - - -	1	60	-	-	2	444 00	5	5	362 00	806 00
Majors - - - - -	4	50	-	-	2	1,536 00	4	4	1,158 40	2,694 40
Adjutant and inspector - - -	1	60	-	2	-	456 00	4	4	289 60	745 60
Paymaster - - - - -	1	60	-	2	-	456 00	4	4	289 60	745 60
Quartermaster - - - - -	1	60	-	2	-	456 00	4	4	289 60	745 60
Assistant quartermaster - - -	1	50	-	1	-	348 00	4	-	144 80	492 80
Captains commanding posts and at sea -	8	50	-	-	1	2,736 00	4	4	2,316 80	5,052 80
Captains - - - - -	2	40	-	-	1	564 00	4	-	289 60	653 60
First lieutenants commanding guards or detachments at sea - - - -	4	40	-	-	1	1,128 00	4	4	1,158 40	2,286 40
First lieutenants - - - - -	15	30	-	-	1	3,330 00	4	-	2,172 00	5,502 00
Second lieutenants - - - - -	20	25	-	-	1	3,840 00	4	-	2,896 00	6,736 00
Sergeant major - - - - -	1	17	-	-	-	102 00	-	-	-	102 00
Quartermaster sergeant - - - -	1	17	\$20	-	-	222 00	-	-	-	222 00
Drum and fife majors - - - - -	2	16	-	-	-	192 00	-	-	-	192 00
Orderly sergeants and sergeants of guards at sea - - - - -	34	16	-	-	-	3,264 00	-	-	-	3,264 00
Orderly sergeants employed as clerks to colonel commandant, adjutant and inspector, paymaster, and quartermaster - - - - -	6	16	20	-	-	1,296 00	-	-	-	1,296 00
Sergeants - - - - -	40	13	-	-	-	3,120 00	-	-	-	3,120 00
Corporals - - - - -	80	9	-	-	-	4,320 00	-	-	-	4,320 00

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Drummers and fifers	-	-	-	60	8	-	-	-	2,880 00	-	-	2,880 00	
Privates	-	-	-	1,000	7	-	-	-	42,000 00	-	-	42,000 00	
Hospital steward	-	-	-	1	18	-	-	-	108 00	1	-	144 20	
Clerk to paymaster	-	-	-	1	-	-	-	-	*325 00	-	-	325 00	
Additional rations to officers for five years' service	-	-	-	-	-	-	-	-	-	146	-	-	
Bounty for re-enlistment	-	-	-	62	-	-	-	-	868 00	-	-	5,212 80	
Two months' pay for unexpired time of former enlistment	-	-	-	62	-	-	-	-	868 00	-	-	868 00	
Two months' rations for unexpired time of former enlistment	-	-	-	62	-	-	-	-	-	1 at 19 cts	-	716 80	
Two months' clothing for unexpired time of former enlistment, at \$2 50 per month	-	-	-	62	-	-	-	-	-	-	-	310 00	
Officers' servants, at \$8 50 per month, for clothing and rations	-	-	-	68	-	-	-	-	-	-	-	3,468 00	
Undrawn clothing	-	-	-	-	-	-	-	-	-	-	-	3,000 00	
									75,393 00			24,545 00	99,938 00

\* This sum of \$325 covers and is in lieu of pay, clothing, rations, fuel, and quarters, for the half year ending June 30, 1843.

Respectfully submitted.

GEO. W. WALKER,  
Paymaster Marine Corps.

HEADQUARTERS MARINE CORPS,  
Paymaster's Office, November 19, 1842.

*Detailed estimate of pay and subsistence of officers, and pay of non-commissioned officers, musicians, and privates, of the marine corps of the United States, from the 1st of July, 1843, to the 30th June, 1844, inclusive.*

Rank and grade.	Number.	PAY.				SUBSISTENCE.			Aggregate.	
		Pay per month.	Extra pay per month.	Number of servants at \$6 per month.	Number of servants at \$7 per month.	Total.	Number of rations per day, at 20 cents per ration.	Number of extra or double rations per day, at 20 cents per ration.		Total.
Colonel commandant - - -	1	75	-	-	2	\$1,068 00	6	6	\$878 40	\$1,946 40
Lieutenant colonel - - -	1	60	-	-	2	888 00	5	5	732 00	1,620 00
Majors - - - - -	4	50	-	-	2	3,072 00	4	4	2,342 40	5,414 40
Adjutant and inspector - - -	1	60	-	2	-	912 00	4	4	585 60	1,497 60
Paymaster - - - - -	1	60	-	-	-	912 00	4	4	585 60	1,497 60
Quartermaster - - - - -	1	60	-	2	-	912 00	4	4	585 60	1,497 60
Assistant quartermaster - - -	1	50	-	1	-	696 00	4	-	292 80	988 80
Captains commanding posts and at sea -	8	50	-	-	1	5,472 00	4	4	4,684 80	10,156 80
Captains - - - - -	2	40	-	-	1	1,128 00	4	-	585 60	1,713 60
First lieutenants commanding guards or detachments at sea - - -	4	40	-	-	1	2,256 00	4	4	2,342 40	4,598 40
First lieutenants - - - - -	15	30	-	-	1	6,660 00	4	-	4,392 00	11,052 00
Second lieutenants - - - - -	20	25	-	-	1	7,680 00	4	-	5,856 00	13,536 00
Sergeant major - - - - -	1	17	-	-	-	204 00	-	-	-	204 00
Quartermaster sergeant - - - - -	1	17	\$20	-	-	444 00	-	-	-	444 00
Drum and fife majors - - - - -	2	16	-	-	-	384 00	-	-	-	384 00
Orderly sergeants and sergeants of guards at sea - - - - -	34	16	-	-	-	6,528 00	-	-	-	6,528 00
Orderly sergeants employed as clerks to colonel commandant, adjutant and inspector, paymaster, and quartermaster - - - - -	6	16	20	-	-	2,592 00	-	-	-	2,592 00
Sergeants - - - - -	40	13	-	-	-	6,240 00	-	-	-	6,240 00
Corporals - - - - -	80	9	-	-	-	8,640 00	-	-	-	8,640 00

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Drummers and fifers	-	-	60	8	-	-	-	5,760 00	-	-	-	5,760 00
Privates	-	-	1,000	7	-	-	-	84,000 00	-	-	-	84,000 00
Hospital steward	-	-	1	18	-	-	-	216 00	1	-	73 20	289 20
Clerk to paymaster	-	-	1	-	-	-	-	*650 00	-	-	-	650 00
Additional rations to officers for five years' service	-	-	-	-	-	-	-	-	160	-	11,712 00	11,712 00
Bounty for re-enlistment	-	-	125	-	-	-	-	1,750 00	-	-	-	1,750 00
Two months' pay for unexpired time of former enlistment	-	-	125	-	-	-	-	1,750 00	-	-	-	1,750 00
Two months' rations for unexpired time of former enlistment	-	-	125	-	-	-	-	-	1 at 19 cts.	-	1,448 75	1,448 75
Two months' clothing for unexpired time of former enlistment, at \$2 50 per month	-	-	125	-	-	-	-	-	-	-	625 00	625 00
Officers' servants, at \$8 50 per month, for clothing and rations	-	-	68	-	-	-	-	-	-	-	6,936 00	6,936 00
Undrawn clothing	-	-	-	-	-	-	-	-	-	-	6,000 00	6,000 00
								150,814 00			50,658 15	201,472 15

\* This sum of \$650 covers and is in lieu of pay, clothing, rations, fuel, and quarters, for the year ending June 30, 1844.

Respectfully submitted.

GEO. W. WALKER,  
Paymaster Marine Corps.

HEADQUARTERS MARINE CORPS,  
Paymaster's Office, November 19, 1842.

No. 5.

List of vessels in commission, of each squadron, their commanders and stations, on 1st October, 1842.

Class.	Name.	Commanders of vessels.	Commanders of squadrons.	Stations.
Ship-of-the-line	Columbus	Captain William C. Spencer	Commodore C. W. Morgan	Mediterranean
Frigate	Congress	Captain P. F. Voorhees	do.	do.
Sloop	Fairfield	Commander A. Bigelow	do.	do.
Sloop	Preble	Commander W. C. Nicholson	do.	do.
Frigate	United States	Captain James Armstrong	Commodore T. Ap C. Jones	Pacific
Sloop	Cyane	Commander C. K. Stribling	do.	do.
Sloop	Dale	Commander T. A. Dornin	do.	do.
Sloop	Yorktown	Lieutenant Jno. S. Nicholas	do.	do.
Schooner	Shark	Lieutenant Henry Eazle	do.	do.
Shoreship	Relief	Lieutenant J. S. Sterett	do.	do.
Ship-of-the-line	Delaware	Captain C. S. McCaully	Commodore Charles Morris	Coast of Brazil
Frigate	Columbia	Captain Ed. R. Shubrick	do.	do.
Sloop	Decatur	Commander D. G. Farragut	do.	do.
Sloop	Concord	Commander W. Boerum	do.	do.
Sloop	John Adams	Commander T. A. Conover	do.	do.
Schooner	Enterprize	Lieutenant J. P. Wilson	do.	do.
Frigate	Constellation	Captain L. Kearney	Commodore L. Kearney	East Indies
Sloop	Boston	Commander J. C. Long	do.	do.
Razec	Independence	Captain S. H. Stringham	Commodore Charles Stewart	Home squadron
Frigate	Constitution	Captain F. A. Parker	do.	do.
Sloop	Falmouth	Commander J. McIntosh	do.	do.
Sloop	Vandalia	Commander William Ramsay	do.	do.
Sloop	Vincennes	Commander F. Buchanan	do.	do.
Brig	Dolphin	Commander J. D. Knight	do.	do.
Brig	Boxer	Lieutenant O. Bullus	do.	do.
Schooner	Grampus	Lieutenant G. J. Vanbrunt	do.	do.
Sloop	Marion	Commander W. M. Armstrong	do.	Special duty
Brig	Oregon	Lieutenant L. M. Powell	do.	Survey coast of Florida
Steamer	Poinsett	Lieutenant C. McBlair	do.	do.
Ship-of-the-line	Ohio	Captain J. Smith	do.	Receiving ship, Boston
Ship-of-the-line	North Carolina	Captain J. H. Gregory	do.	Receiving ship, New York
Schooner	Experiment	Lieutenant G. A. Magruder	do.	Receiving vessel, Philadelphia
Brig	Pioneer	Lieutenant Zac Johnson	do.	Receiving vessel, Baltimore
Ship-of-the-line	Pennsylvania	Captain J. P. Zantlinger	do.	Receiving ship, Norfolk
Sloop	Ontario	Commander V. Bl. Randolph	do.	Receiving ship, New Orleans

No. 6.

*List of deaths in the Navy, as ascertained at the Department since the 1st of December, 1841.*

Name and rank.	Date.	Place.
<i>Captain.</i> John Gallagher .	Nov. 1, 1842	Near Wilmington, Delaware.
<i>Commander.</i> Ralph Voorhees .	July 27, 1842	Smyrna, Mediterranean.
<i>Lieutenants.</i> Joseph W. Jarvis .	Sept. 18, 1842	North Carolina.
Franklin Clinton .	Feb. 26, 1842	New York.
John F. Borden .	April 5, 1842	Drowned in the Potomac.
John Carroll .	Mar. 31, 1842	Brig Boxer, New York.
<i>Surgeon.</i> George S. Sproston .	Jan. 21, 1842	Baltimore.
<i>Assistant Surgeon.</i> Richard J. Harrison .	Feb. 27, 1842	Mediterranean.
<i>Passed Midshipman.</i> Wm. H. Adams .	Nov. 8, 1842	Naval hospital, Norfolk.
<i>Midshipmen.</i> John J. McCook .	Mar. 30, 1842	At sea, coast of Brazil.
John C. Richardson .	Sept. 29, 1841	At sea, U. S. ship Constellation.
Philip C. Van Wyck .	Dec. 31, 1841	Sing Sing, New York.
<i>Masters.</i> Thomas Barry .	June 27, 1842	Navy-yard, Washington.
Albert G. Handy.		
<i>Professor of Mathematics.</i> David McClure .	April 13, 1842	Philadelphia.
<i>Boatswains.</i> James Banks .	Nov. 10, 1841	
John A. Frost .	Oct. 20, 1842	
<i>Gunners.</i> Daniel Kelly .	June 9, 1841	
Jac. Carpenter .	March 8, 1842	
<i>Carpenter.</i> Daniel Caswell .	Feb. 25, 1842	Norfolk.

## No. 6—Continued.

Name and rank.	Date.	Place.
<i>Sailmaker.</i> John Beggs . . . . .	Sept. 20, 1840	Valparaiso.
<i>Navy Agent.</i> John P. Henry . . . . .	March 8, 1842	Savannah, Georgia.
<i>Chaplain.</i> James Wiltbank . . . . .	Mar. 19, 1842	Philadelphia.

## No. 7.

*List of dismissals from the Navy since the 1st of December, 1841.*

Name and rank.	Date of dismissal.
<i>Captain.</i> John H. Clack . . . . .	April 16, 1842.
<i>Commanders.</i> Wm. J. Belt . . . . .	November 2, 1842.
Charles S. Williamson . . . . .	October 27, 1842, cashiered.
<i>Lieutenant.</i> Nathaniel G. Bay . . . . .	October 14, 1842.
<i>Midshipmen.</i> Samuel D. Cowden . . . . .	August 5, 1842.
James M. Turner . . . . .	August 5, 1842.
Charles Weston . . . . .	October 27, 1842.
<i>Master's Mate.</i> George G. Decker . . . . .	July 6, 1842.
<i>Gunners.</i> Cas. S. Skiddy . . . . .	October 27, 1842.
Jeremiah Buell . . . . .	July 6, 1842.
Peter Freeman . . . . .	June 7, 1842.
Samuel P. Scott . . . . .	Jan. 15, 1842, appointment revoked.
<i>Carpenter.</i> Russell Smith . . . . .	July 28, 1842.
<i>Naval Storekeeper.</i> Tunis Craven . . . . .	October 10, 1842.

*List of resignations in the Navy since the 1st of December, 1841.*

Name and rank.	Date of acceptance.
<i>Passed Midshipmen.</i>	
Wm. Craney . . . .	February 15, 1842.
R. M. Bowland . . . .	July 7, 1842.
<i>Midshipmen.</i>	
Jas. Julian Barry . . . .	September 20, 1842.
Charles Bertody . . . .	January 31, 1842.
Charles S. Cooper . . . .	April 9, 1842.
James C. Campbell . . . .	July 7, 1842.
Stewart A. Godman . . . .	May 14, 1842.
J. H. McJ. Madison . . . .	November 4, 1842.
Edwin W. Oliver . . . .	June 1, 1842.
Augt. W. Stebbins . . . .	September 20, 1842.
Jacob F. Sperry . . . .	January 28, 1842.
Benjamin B. Wright . . . .	October 24, 1842.
Edward Z. C. Judson . . . .	June 8, 1842.
Charles Wager . . . .	February 19, 1842.
<i>Chaplain.</i>	
Jared L. Elliott . . . .	October 18, 1842.
<i>Boatswains.</i>	
Henry Edgar . . . .	November 19, 1841.
John Miller . . . .	March 22, 1842.
George W. Clark . . . .	June 1, 1842.
<i>Sailmakers.</i>	
Thomas Tatem . . . .	September 7, 1842.
J. F. Tatem . . . .	June 8, 1842.
<b>MARINE CORPS.</b>	
<i>Lieutenant.</i>	
James Maguire . . . .	January 25, 1842.

No. 9.

PENSION OFFICE, *November 19, 1842.*

SIR: I have the honor to transmit, herewith, in obedience to the 3d section of the act of Congress, of the 10th of July, 1833, entitled "An act for the regulation of the navy and privateer pension, and navy hospital funds;" six lists, viz:

1. A list containing the names of widows whose pensions ceased on the 31st of August last, in conformity with the provisions of the act of the 16th of August, 1841, entitled, "An act to provide for the payment of navy pensions."

2. A list of orphans whose pensions expired on the 31st of August last, agreeable to the provisions of the act of August 16, 1841.

3. A list of widows pensioned since the last annual report was made from this office, some of whose pensions ceased on the 31st of August last.

4. A list of orphans pensioned since the last report, whose pensions ceased on the 31st of August last.

5. A list of widows who are now on the pension roll under the act of June 30, 1834, granting five years' half-pay.

6. A list of persons who are now on the roll of invalid pensioners.

The invalids constitute the only list of permanent navy pensioners now left. There are at present 503 on the rolls, and there is now in the Treasury an undrawn balance of this year's appropriation of \$31,123 33, which will be sufficient to pay them on the 1st of January next, and to meet all other demands for the first quarter of the ensuing year. To pay the invalids now on the rolls, and those who may be added during the first half year of 1843, as well as the widows under the act of June 30, 1834, granting five years' half-pay in certain cases, and widows and orphans' claims still unsettled, under the act of March 3, 1837, the sum of \$27,800 will be required for the half year ending June 30, 1843, viz: invalids, \$18,000; widows under the act of June 30, 1834, \$1,800; and widows and orphans' claims under the act of March 3, 1837, \$8,000.

For the fiscal year ending the 30th of June, 1843, the sum of \$49,600 will be required, making necessary an appropriation of \$77,400 for the years 1843 and 1844.

The only stocks now belonging to the navy pension fund are, 700 shares of the Bank of Washington, the nominal value of which is \$14,000; and stock of the Union Bank of Georgetown, the nominal value of which is \$8,700. The last-mentioned institution is now closing its concerns; and, as soon as collections can be made, the directors will pay from the dividends of its capital stock, the amount due to the navy pension fund. Since my report of November, 1841, \$900 have been paid into the Treasury by this bank, which has been applied to the payment of pensions, as will be seen by the 4th Auditor's report, which has been sent to you. The stock of the Bank of Washington can not now be sold to advantage, and the amount of interest which it yields is so inconsiderable, that I have not introduced it into the present report as available. The sum of \$2,500 received for interest on Cincinnati corporation stock, and applied to the payment of navy pensions, since the date of my last report, was due to the navy pension fund before the stock was sold.

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

J. L. EDWARDS,

*Commissioner of Pensions.*

Hon. A. P. UPSHUR, *Secretary of the Navy.*

## 1.

*Alphabetical list of Widows whose pensions ceased on the 31st of August, 1842.*

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Sally Annis.....	Seaman.....	April 20, 1815	\$6 00	March 4, 1814.
Abigail Appleton.....	.....de.....	Jan'y 4, 1815	6 00	March 3, 1837.
Mary P. Archer.....	.....do.....	Oct'r 12, 1839	6 00	.....do.....
Emma Anderson.....	Passed midshipman...	Dec'r 29, 1840	12 50	.....do.....
Martha Ann Atwood.....	Purser.....	May 11, 1823	20 00	.....do.....
Louisa Auchmuty.....	Lieutenant.....	Oct'r 8, 1835	25 00	June 30, 1834.
Catharine L. Armistead.....	Lieut. marine corps...	April 14, 1841	15 00	March 3, 1837.
Catharine Anderson.....	Marine.....	Feb'y 19, 1813	3 50	.....do.....
Elizabeth Armitage.....	Seaman.....	March 7, 1810	6 00	.....do.....
Sarah Bernard.....	Carpenter's mate....	Sept'r 10, 1829	9 50	.....do.....
Eliza K. Boughan.....	Lieutenant.....	Nov'r 6, 1832	25 00	June 30, 1834.
Susan Barber.....	Boy.....	Oct'r 24, 1840	3 00	March 3, 1837.
Emily Beale.....	Purser.....	April 4, 1835	20 00	June 30, 1834.
Elizabeth Beeler.....	Corporal marine corps.	Sept'r 8, 1830	4 50	March 3, 1837.
Lydia Brown.....	Carpenter.....	March 28, 1824	10 00	June 30, 1834.
Jane Bergamer.....	Marine.....	Sept'r 12, 1839	3 50	March 3, 1837.
Mary E. Broom.....	Major marine corps..	Nov'r 14, 1840	25 00	.....do.....
Mary Ann Boyd.....	Surgeon.....	March 26, 1839	30 00	.....do.....
Elizabeth Buck.....	Musician marine corps	Dec'r 5, 1838	4 00	.....do.....
Elizabeth Bellingham.....	Seaman.....	August 9, 1837	6 00	.....do.....
Caroline M. Berry.....	Lieutenant.....	July 17, 1824	25 00	June 30, 1834.
Maria Babbit.....	Surgeon.....	May 24, 1826	25 00	.....do.....
Polly Barry.....	Marine.....	Dec'r 7, 1812	3 50	March 3, 1837.
Elizabeth Bishop.....	Seaman.....	Dec'r 18, 1813	6 00	.....do.....
Martha Burrell.....	.....do.....	Dec'r 14, 1822	6 00	.....do.....
Elizabeth Bartlett.....	.....do.....	April 25, 1813	6 00	.....do.....
Abigail Baily.....	Landsman.....	Dec'r 31, 1813	4 00	.....do.....
Nabby Burchstead.....	Carpenter.....	Dec'r 11, 1833	10 00	June 30, 1834.
Eliza Bradlee.....	Sergeant marine corps.	April 12, 1838	6 50	March 3, 1837.
Julianna Burchmore.....	Surgeon.....	Sept'r 10, 1829	27 50	June 30, 1834.
Letitin Blake.....	Marine.....	August 14, 1836	3 50	.....do.....
Elizabeth Beckford.....	Landsman.....	Nov'r 30, 1839	4 00	.....do.....
Julianna S. Babbit.....	Commander.....	Sept'r 9, 1840	30 00	March 3, 1837.
Houldah Bennett.....	Sailingmaster.....	August 18, 1840	20 00	.....do.....
Phebe Butler.....	Purser.....	April 9, 1837	20 00	.....do.....
Susan Bainbridge.....	Captain.....	July 27, 1833	50 00	June 30, 1834.
Catharine M. Beers.....	Surgeon.....	June 8, 1831	25 00	March 3, 1837.
Elizabeth Barnes.....	Carpenter.....	Nov'r 2, 1819	10 00	.....do.....
Sarah Beggs.....	Sailmaker.....	Sept'r 21, 1840	10 00	.....do.....
Sarah Berry.....	Boatswain.....	March 2, 1829	10 00	June 30, 1834.
Elizabeth H. Baldwin.....	Captain's clerk.....	April 12, 1816	12 50	March 3, 1837.
Elizabeth E. Chandler.....	Surgeon.....	July 28, 1841	30 00	.....do.....
Leah Carter.....	Musician marine corps	Sept'r 23, 1834	4 00	June 30, 1834.
Ann D. Campbell.....	Lieutenant.....	June 3, 1836	25 00	.....do.....
Sarah Ann Cooke.....	Surgeon.....	Dec'r 4, 1838	35 00	March 3, 1837.
Mary Cheever.....	.....do.....	April 12, 1814	8 33	April 12, 1814.
Abigail Cowell.....	Lieutenant.....	April 18, 1814	25 00	March 3, 1817.
Harriet Carter.....	.....do.....	Sept'r 6, 1823	25 00	.....do.....
Margaret Carmick.....	Major marine corps..	Nov'r 6, 1816	25 00	March 3, 1837.
Margaret Cowen.....	Gunner.....	Sept'r 14, 1831	10 00	.....do.....
Rebecca G. Cooper.....	Boatswain.....	October 4, 1840	9 00	.....do.....
Caroline L. Covington.....	Gunner.....	Nov'r 4, 1840	10 00	.....do.....
Ann Maria Clunet.....	Sergeant marine corps	Dec'r 1, 1825	6 50	June 20, 1813.
Eliza M. Cloud.....	Assistant surgeon.....	August 1, 1831	15 00	June 30, 1834.

1—Continued.

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Elizabeth Cernon.....	Ordinary seaman.....	Nov'r 28, 1823	\$5 00	March 3, 1837.
Maria Christy.....	Seaman.....	Sept'r 7, 1839	6 00	.....do.....
Eliza Cassin.....	Purser.....	August 19, 1821	20 00	March 3, 1817.
Maria J. Cuvillier.....	Musician marine corps	June 28, 1834	4 00	June 30, 1834.
Sarah Clementson.....	Sailmaker.....	July 9, 1833	10 00	March 3, 1837.
Eleanor Correia.....	Gunner.....	Dec'r 21, 1823	10 00	.....do.....
Celia Cross.....	Lieutenant.....	Feb'y 10, 1834	25 00	June 30, 1834.
Catharine Chauncey.....	Captain.....	Jan'y 28, 1840	50 00	March 3, 1837.
Frances F. Cook.....	Lieutenant.....	Feb'y 7, 1834	25 00	June 30, 1834.
Eliza W. Cocke.....	.....do.....	March 7, 1823	25 00	June 20, 1813.
Ann V. Cocke.....	.....do.....	May 31, 1835	25 00	June 30, 1834.
Fanny Cassin.....	.....do.....	Nov'r 30, 1826	25 00	.....do.....
Mary Cassin.....	.....do.....	Oct'r 15, 1837	25 00	March 3, 1837.
Elizabeth J. Caldwell.....	.....do.....	August 9, 1831	25 00	June 30, 1834.
Susanna Crichton.....	Seaman.....	June 19, 1812	6 00	March 4, 1814.
Harriet Creighton.....	Captain.....	Oct'r 13, 1838	50 40	March 3, 1837.
Margaret Chapman.....	Ordinary seaman.....	July 5, 1805	5 00	.....do.....
Eleanor Cox.....	Marine.....	April 10, 1839	3 50	.....do.....
Anna Cain.....	Ship's corporal.....	Oct'r 25, 1834	7 00	.....do.....
Ann Conrad.....	Landsman.....	March 8, 1834	4 00	.....do.....
Ellen Cox.....	Passed midshipman.....	June 30, 1823	12 00	.....do.....
Elizabeth Cash.....	Seaman.....	Jan'y 12, 1837	6 00	.....do.....
Rodolphine Claxton.....	Captain.....	March 7, 1841	50 00	.....do.....
Elizabeth Ann Dent.....	Captain.....	July 31, 1823	50 00	.....do.....
Susan Decatur.....	.....do.....	March 22, 1820	50 00	.....do.....
Mary Ann Denham.....	Sergeant marine corps	April 7, 1841	8 00	.....do.....
Laura P. Daggett.....	Gunner.....	April 9, 1836	10 00	.....do.....
Sarah Drew.....	Sailing master.....	April 9, 1823	20 00	.....do.....
Susan Davis.....	Quarter gunner.....	August 10, 1800	7 50	.....do.....
Ellen Dever.....	Landsman.....	April 23, 1823	4 00	.....do.....
Mary Francis Davis.....	Sailmaker.....	Jan'y 26, 1839	10 00	.....do.....
Prudence Denham.....	Ordinary seaman.....	June 27, 1837	5 00	.....do.....
Peggy Dorney.....	Steward.....	Jan'y 25, 1838	9 00	.....do.....
Eliza Doxey.....	Sailing master.....	May 20, 1828	20 00	June 30, 1834.
Ellen Dix.....	Surgeon.....	April 16, 1823	27 50	March 3, 1817.
Lamitia Dill.....	Boatswain.....	Dec'r 19, 1831	10 00	June 30, 1834.
Virginia Duncan.....	Passed midshipman.....	August 3, 1836	12 50	March 3, 1837.
Arabella Dubois.....	Seaman.....	August 30, 1837	6 00	.....do.....
Sarah Davis.....	Master's mate.....	Jan'y 6, 1820	10 00	.....do.....
Mary Davis.....	Quartermaster.....	Sept'r 11, 1814	9 00	.....do.....
Ann Edwards.....	Lieut. marine corps...	Oct'r 16, 1800	15 00	.....do.....
Abigail Eldridge.....	Seaman.....	June 2, 1831	6 00	.....do.....
Phebe Eldridge.....	Gunner.....	Dec'r 31, 1866	10 00	.....do.....
Hannah Everett.....	Chaplain.....	April 12, 1837	20 00	.....do.....
Ann R. Edwards.....	Lieutenant.....	Jan'y 19, 1824	25 00	.....do.....
Susan Eaton.....	Gunner.....	Feb'y 22, 1840	10 00	.....do.....
Harriet Ann Elbert.....	Lieutenant.....	Dec'r 20, 1812	25 00	March 4, 1814.
Dorothy M. Evans.....	Boatswain.....	July 9, 1832	10 00	June 30, 1834.
Abigail Fernald.....	Seaman.....	Feb'y 24, 1815	6 00	March 4, 1814.
Lucy Flagg.....	Gunner.....	April 20, 1816	10 00	March 3, 1837.
Mary Forrest.....	Sergeant marine corps	March 11, 1832	8 50	June 30, 1834.
Mary Ford.....	Carpenter's mate.....	April 20, 1815	9 00	March 4, 1814.
Ann Fletcher.....	Marine.....	Jan'y 20, 1818	3 50	March 3, 1837.
Elizabeth Ferguson.....	Seaman.....	July 24, 1814	6 00	.....do.....
Mary T. Forrest.....	Lieutenant.....	Oct'r 1, 1825	25 00	June 30, 1834.
Catharine Fremody.....	Ordinary seaman.....	Jan'y 20, 1836	5 00	.....do.....
Eliza M. Fortin.....	Steward.....	Jan'y 28, 1833	9 00	March 3, 1837



## 1—Continued.

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Susanna Flann .....	Seaman .....	Oct'r 1, 1839	\$6 00	March 31, 1837.
Jane Goslin .....	Marine .....	Dec'r 28, 1831	3 50	.....do.....
Margaret F. Green .....	Carpenter .....	Nov'r 11, 1834	10 00	June 30, 1834.
Mary Gallon .....	Seaman .....	April 28, 1825	6 00	March 3, 1837.
Sophia Gardner .....	Master commandant.	Sept'r 1, 1815	30 00	March 3, 1817.
Eliza Grayson .....	Captain marine corps.	June 30, 1823	20 00	.....do.....
Mary Glass .....	Carpenter's mate.....	Oct'r 1, 1837	9 50	March 3, 1837.
Elizabeth Goldthwait.....	Ordinary seaman.....	August 25, 1813	5 00	.....do.....
Elizabeth C. Gray.....	Boatswain.....	Feb'y 15, 1836	10 00	June 30, 1834.
Rebecca Gulliver.....	Marine .....	Jan'y 31, 1822	3 50	March 3, 1837.
Joan Goodwin .....	Seaman .....	August 29, 1837	6 00	.....do.....
Mary S. Gadsden.....	Master commandant.	August 28, 1812	30 00	.....do.....
Olive Grover .....	Ordinary seaman.....	Feb'y 2, 1836	5 00	June 30, 1834.
Ann T. Green.....	Purser .....	August 24, 1812	20 00	March 3, 1837.
Ann Gardner.....	Gunner .....	April 28, 1835	10 00	June 30, 1834.
Hannah L. Gamble.....	Major marine corps...	Sep'r 11, 1836	25 00	.....do.....
Mary Griffin.....	Surgeon.....	Nov'r 1, 1814	30 00	March 3, 1817.
Dionysia Goodrum.....	Lieutenant .....	May 9, 1836	25 00	June 30, 1834.
Ellen Nora Hanbury.....	Sergeant marine corps	Jan'y 4, 1825	8 00	.....do.....
Mary R. Hatch.....	Pilot.....	Feb'y 5, 1814	20 00	Jan'y 20, 1813.
Mary Henley .....	Captain .....	Oct'r 7, 1828	50 00	June 30, 1834.
Susan Harraden.....	Master commandant.	Jan'y 20, 1818	30 00	Jan'y 20, 1813.
Eliza Henley.....	Captain.....	May 23, 1835	50 00	June 30, 1834.
Theresa Hoffman.....	Musician marine corps	Sept'r 19, 1837	4 00	.....do.....
Hannah Hazen.....	Seaman .....	March 28, 1814	6 00	Jan'y 20, 1813.
Mary Ann H. Holmes.....	Armorer .....	Sept'r 8, 1833	9 00	March 3, 1837.
Hannah Hammond.....	Marine.....	Nov'r 10, 1817	3 50	.....do.....
Phebe Hollis.....	.....do.....	May 13, 1811	3 50	.....do.....
Emma Horton.....	Midshipman .....	August 7, 1815	9 50	.....do.....
Ann J. Holmes.....	Master-at-arms.....	August 22, 1836	9 00	.....do.....
Rebecca Higgins.....	Seaman .....	Sept'r 30, 1837	6 00	.....do.....
Sarah A. Hunt.....	Purser .....	April 4, 1837	20 00	.....do.....
Diana Hardy .....	Ordinary seaman.....	Sept'r 10, 1813	5 00	March 4, 1814.
Sarah Higgins.....	Seaman .....	Sept'r 28, 1834	6 00	June 30, 1834.
Mary Hanna.....	Gunner.....	Jan'y 17, 1837	10 00	March 3, 1837.
Ann R. Hall.....	Sail maker .....	Sept'r 18, 1826	10 00	June 30, 1834.
Mary Ann Horsley.....	Surgeon.....	Sept'r 8, 1831	27 50	March 3, 1837.
Margaret Holland.....	Carpenter's mate.....	August 10, 1800	9 50	.....do.....
Ellen Hunter.....	Marine.....	May 16, 1838	3 50	.....do.....
Eliza Halsey.....	Purser.....	Jan'y 2, 1838	20 00	.....do.....
Cornelia Hobbs.....	Lieutenant.....	April 3, 1836	25 00	June 30, 1834.
Hetty Henry.....	Seaman.....	May 25, 1834	6 00	March 3, 1837.
Mary S. Hunter.....	Chaplain.....	Feb'y 24, 1823	20 00	.....do.....
Mary Ann Hartnett.....	Carpenter.....	Sept'r 9, 1830	10 00	.....do.....
Phebe Hammersly.....	Lieutenant.....	Oct'r 1, 1823	25 00	.....do.....
Phebe W. Hoffman.....	Captain.....	Dec'r 10, 1834	50 00	June 30, 1834.
Henrietta Hixon.....	Master.....	Sept'r 8, 1840	20 00	March 3, 1837.
Mary E. Holbert.....	Corporal marine corps	June 30, 1834	4 00	June 30, 1834.
Mary Hackleton.....	Seaman.....	Dec'r 5, 1812	6 00	March 3, 1837.
Elizabeth Johnston.....	Landsman.....	Feb'y 21, 1833	4 00	.....do.....
Elizabeth Jones.....	Marine.....	Sept'r 1, 1827	3 00	June 30, 1834.
Maria T. Johnson.....	Carpenter's mate.....	Jan'y 30, 1814	9 50	Jan'y 20, 1813.
Hannah Ingraham.....	Seaman .....	April 10, 1837	6 00	March 3, 1837.
Abigail Jones.....	.....do.....	August 16, 1800	6 00	.....do.....
Catherine Johnson.....	Gunner.....	August 11, 1818	10 00	.....do.....
Mary Ann Jackson.....	Ordinary seaman.....	May 2, 1838	5 00	.....do.....

## I—Continued.

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Theresa Jones.....	Marine.....	June 26, 1810	\$3 50	March 3, 1837.
Mary Jameson.....	Midshipman.....	Nov'r 11, 1828	9 50	.....do.....
Ellen Jenkins.....	Seaman.....	June 2, 1825	6 00	June 30, 1834.
Mary Jones.....	Chaplain.....	Jan'y 29, 1829	20 00	.....do.....
Susan J. Jackson.....	Purser.....	Oct'r 31, 1840	20 00	March 3, 1837.
Abigail Jones.....	Cook.....	April 20, 1815	9 00	Jan'y 20, 1813.
Catharine C. King.....	Sergeant marine corps.....	August 3, 1837	6 50	March 3, 1837.
Abigail Kitchen.....	Seaman.....	August 16, 1800	6 00	June 30, 1834.
Eliza Kitts.....	Sailingmaster.....	Sept'r 27, 1819	20 00	March 3, 1837.
Harriet J. Kissam.....	Surgeon.....	Oct'r 6, 1828	30 00	June 30, 1834.
Ann M. Kelly.....	Gunner marine corps.....	June 10, 1841	10 00	March 3, 1837.
Frances M. Lewis.....	Master commandant.....	Sept'r 1, 1815	30 00	March 3, 1817.
Susannah Lippincott.....	Ordinary seaman.....	Jan'y 1, 1838	5 00	March 3, 1837.
Lydia Low.....	Yeoman.....	August 1, 1834	7 50	June 30, 1834.
Betsey Low.....	Seaman.....	Sept'r 1, 1815	6 00	March 3, 1837.
Deborah Linsay.....	Sailingmaster.....	May 19, 1826	20 00	.....do.....
Elizabeth Lagoner.....	Seaman.....	March 4, 1835	6 00	June 30, 1834.
Julia M. Lawrence.....	Captain.....	June 1, 1813	50 00	Jan'y 20, 1813.
Sarah Ann Lent.....	Sailmaker's mate.....	Sept'r 11, 1824	9 50	June 30, 1834.
Catharine Leaky.....	Marine.....	Dec'r 27, 1840	3 50	March 3, 1837.
Sarah Matthews.....	Quarter gunner.....	Nov'r 30, 1814	9 00	Jan'y 20, 1813.
Hetty McDermot.....	.....do.....	Sept'r 30, 1837	7 50	March 3, 1837.
Mary Ann Marshall.....	Gunner.....	August 8, 1827	10 00	.....do.....
Celeste McGowen.....	Lieutenant.....	Feb'y 19, 1826	25 00	.....do.....
Ann Mix.....	Commander.....	Feb'y 8, 1839	30 00	.....do.....
Abigail Morgan.....	Carpenter's mate.....	March 12, 1813	9 50	.....do.....
Hester Meredith.....	Ordinary seaman.....	Feb'y 17, 1838	5 00	.....do.....
Mary McNelly.....	Gunner.....	Nov'r 29, 1834	10 00	June 30, 1834.
Phoebe Montgomery.....	Surgeon.....	Jan'y 3, 1828	25 00	.....do.....
Rebecca McGee.....	Marine.....	Jan'y 26, 1830	3 00	.....do.....
Mary E. McPherson.....	Master commandant.....	April 28, 1824	30 00	.....do.....
Hester Murphy.....	Corporal marine corps.....	Dec'r 26, 1831	4 50	March 3, 1837.
Mary G. Maury.....	Lieutenant.....	June 22, 1840	25 00	.....do.....
Elizabeth Myers.....	Marine.....	Oct'r 10, 1839	3 50	.....do.....
Catharine Mitchell.....	Landsman.....	Nov'r 20, 1832	4 00	June 30, 1834.
Elizabeth H. Marshall.....	Corporal marine corps.....	Dec'r 11, 1822	4 50	March 3, 1837.
Ann G. McCullough.....	Sailingmaster.....	August 24, 1814	20 00	Jan'y 20, 1813.
Jane Moulton.....	Seaman.....	April 20, 1815	6 00	March 4, 1814.
Caroline Monteith.....	Lieutenant.....	Oct'r 16, 1819	25 00	March 3, 1837.
Martha McNelly.....	Boatswain.....	July 14, 1839	10 00	.....do.....
Honora McCarty.....	Ordinary seaman.....	May 25, 1839	5 00	.....do.....
Ann Martin.....	Quarter gunner.....	April 20, 1815	9 00	Jan'y 20, 1813.
Elizabeth Martin.....	Boatswain.....	Sept'r 1, 1829	10 00	March 3, 1837.
Susan McCullough.....	Lieutenant.....	Dec'r 31, 1827	25 00	.....do.....
Mary McCall.....	Surgeon.....	Sept'r 15, 1831	25 00	.....do.....
Eliza Maury.....	Lieutenant.....	June 24, 1823	25 00	March 3, 1817.
Elizabeth McCann.....	Purser's steward.....	April 26, 1840	9 00	March 3, 1837.
Elizabeth McMurtrie.....	Purser.....	March 23, 1836	20 00	June 30, 1834.
Catharine McLaughlin.....	First class boy.....	Feb'y 15, 1837	4 00	March 3, 1837.
Mary D. McClure.....	Quarter gunner.....	June 5, 1834	7 50	.....do.....
Mary McCawley.....	Captain marine corps.....	Feb'y 22, 1839	20 00	.....do.....
Rachel Marshall.....	Seaman.....	Dec'r 31, 1827	6 00	June 30, 1834.
Ann Nantz.....	Sailingmaster.....	Dec'r 27, 1824	20 00	March 3, 1837.
Laura C. Nicholson.....	Captain.....	Dec'r 12, 1838	50 00	.....do.....
Sarah L. Noyes.....	Ship's corporal.....	Oct'r 9, 1835	7 00	.....do.....

## 1—Continued.

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Rhoda Newcomb.....	Lieutenant.....	Nov'r 1, 1825	\$25 00	June 30, 1834.
Elizabeth Nagle.....	Boatswain.....	Nov'r 19, 1834	9 50	.....do.....
Mary Neale.....	Lieutenant.....	Sept'r 1, 1815	25 00	March 3, 1817.
Teresa Nicholas.....	Seaman.....	June 30, 1838	6 00	March 3, 1837.
Ann Nelson.....	.....do.....	Nov'r 11, 1837	6 00	.....do.....
Eliza Netto.....	Captain's steward.....	Dec'r 6, 1838	9 00	.....do.....
Charity Nicholson.....	Carpenter.....	Sept'r 9, 1814	10 00	.....do.....
Margaret Navarro.....	Sailmaker.....	Oct'r 2, 1823	10 00	March 3, 1817.
Sarah H. Nichols.....	Sailingmaster.....	Sept'r 12, 1822	20 00	March 3, 1837.
Rebecca Oellers.....	Seaman.....	March 21, 1839	6 00	.....do.....
Margaret Osborn.....	.....do.....	August 16, 1834	6 00	June 30, 1834.
Eliza A. Oliver.....	Gunner.....	March 30, 1834	10 00	.....do.....
Elizabeth O'Hare.....	Carpenter's mate.....	August 28, 1838	9 50	March 3, 1837.
Catharine Ann Price.....	Carpenter's mate.....	Sept'r 10, 1829	9 50	.....do.....
Eliza L. Pierce.....	Lieutenant.....	August 7, 1822	25 00	March 3, 1817.
Frances Pottenger.....	.....do.....	Feb'y 7, 1833	25 00	June 30, 1834.
Maria Page.....	Surgeon.....	March 15, 1832	25 00	.....do.....
Nancy Patch.....	Seaman.....	Oct'r 29, 1812	6 00	March 3, 1817.
Frances W. Parker.....	Carpenter.....	August 26, 1830	10 00	March 3, 1837.
Nabby Pippen.....	Coxwain.....	April 20, 1815	9 00	.....do.....
Mary Proctor.....	Steward.....	July 1, 1837	9 00	.....do.....
Abigail Parrott.....	Ordinary seaman.....	March 3, 1832	5 00	.....do.....
Lydia G. Pinkham.....	Lieutenant.....	Oct'r 27, 1839	25 00	.....do.....
Eleanor H. Prentiss.....	.....do.....	July 5, 1840	25 00	.....do.....
Elizabeth C. Perry.....	Captain.....	August 23, 1820	50 00	March 3, 1817.
Margaret Parcels.....	Sailmaker.....	August 20, 1819	10 00	.....do.....
Sarah T. Phillips.....	Carpenter.....	Oct'r 9, 1839	10 00	March 3, 1837.
Rachel Patton.....	Ordinary seaman.....	August 11, 1835	5 00	.....do.....
Mary Preble.....	Captain.....	August 25, 1807	50 00	.....do.....
Lucret.....	Purser.....	May 8, 1832	20 00	June 30, 1834.
Eliza.....	Sailingmaster.....	Sept'r 16, 1826	20 00	.....do.....
Sarah Potts.....	.....do.....	May 8, 1839	20 00	March 3, 1837.
Georgiana A. Peacq.....	Surgeon.....	May 23, 1827	25 00	June 30, 1834.
Sarah Phillips.....	Marine.....	Oct'r 22, 1834	3 50	.....do.....
Mary Ann Patterson.....	Boatswain.....	Dec'r 13, 1836	10 00	March 3, 1837.
Eliza C. Porter.....	Master commandant.....	Sept'r 2, 1831	30 00	June 30, 1834.
George Ann Patterson.....	Captain.....	August 25, 1839	50 00	March 3, 1837.
Henrietta M. Prather.....	Marine.....	Sept'r 14, 1834	3 50	June 30, 1834.
Catharine S. M. Ray.....	Surgeon.....	Sept'r 7, 1835	35 00	.....do.....
Rebecca Rainey.....	Ordinary seaman.....	Nov'r 11, 1804	5 00	March 3, 1837.
Eliza Rumney.....	Sailingmaster.....	March 31, 1823	20 00	.....do.....
Ann I. Ross.....	Lieut. marine corps.....	Dec'r 11, 1836	15 00	.....do.....
Sally Russell.....	Master's mate.....	Oct'r 17, 1803	10 00	.....do.....
Elizabeth J. Russell.....	Lieutenant.....	July 21, 1838	25 00	.....do.....
Mary Russell.....	Sergeant marine corps.....	July 7, 1829	6 50	June 30, 1834.
Martha Rose.....	Seaman.....	Sept'r 10, 1813	6 00	March 3, 1817.
Catharine Rinker.....	Sailingmaster.....	July 10, 1823	20 00	.....do.....
Elizabeth Roberts.....	Sergeant marine corps.....	Feb'y 14, 1838	8 00	March 3, 1837.
Sarah Ross.....	Marine.....	Dec'r 18, 1840	3 50	.....do.....
Catharine C. Read.....	Lieutenant.....	Jan'y 6, 1812	25 00	.....do.....
Ann M. Rodgers.....	Captain.....	May 21, 1832	50 00	June 30, 1834.
Sarah Richardson.....	Boatswain's mate.....	Jan'y 9, 1837	9 50	March 3, 1837.
Minerva Rogers.....	Captain.....	August 1, 1832	50 00	.....do.....
Mary W. Rose.....	Master commandant.....	August 27, 1830	30 00	June 30, 1834.
Catharine Rossmusoin.....	Pilot.....	July 22, 1813	20 00	Jan'y 20, 1813.
Nancy Riggs.....	Seaman.....	Dec'r 27, 1814	6 00	March 4, 1814.

## 1—Continued.

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Phebe Reynolds.....	Boatswain.....	May 21, 1823	\$10 00	March 3, 1817.
Eliza Sitcher.....	Drummer.....	Feb'y 28, 1841	4 00	March 3, 1837.
Eliza Stevens.....	Captain.....	Jan'y 21, 1841	50 00	.....do.....
Hannah Stricker.....	Sergeant marine corps	Oct'r 1, 1820	6 50	.....do.....
Eleanor Smart.....	Seaman.....	Oct'r 15, 1814	6 00	March 4, 1814.
Louisa Ann Smith.....	Lieutenant.....	Nov'r 30, 1836	25 00	March 3, 1837.
Patty Smith.....	Boatswain.....	June 17, 1815	10 00	.....do.....
Elizabeth L. Stallings.....	Lieutenant.....	April 26, 1841	25 00	.....do.....
Mary H. Stockton.....	.....do.....	Nov'r 20, 1836	25 00	.....do.....
Mary C. Spence.....	Captain.....	Sept'r 26, 1826	50 00	June 30, 1834.
Mehitable Smith.....	Lieutenant.....	Sept'r 10, 1829	25 00	.....do.....
Sarah Smith.....	Steward.....	Dec'r 19, 1820	9 00	March 3, 1837.
Hannah Stone.....	Seaman.....	July 1, 1815	6 00	March 3, 1817.
Mary B. Shaw.....	Captain.....	Sept'r 17, 1823	50 00	.....do.....
Harriet H. Sanders.....	Lieutenant.....	Dec'r 7, 1816	25 00	Jan'y 30, 1813.
Sally Schlosser.....	Seaman.....	Feb'y 5, 1821	6 00	March 3, 1837.
Catharine Smith.....	Marine.....	March 13, 1837	3 50	.....do.....
Elizabeth A. Starke.....	Corporal marine corps	Dec'r 10, 1839	4 50	.....do.....
Louisa Sherburne.....	Lieutenant.....	Nov'r 20, 1830	25 00	June 30, 1834.
Ann E. Sardo.....	Musician marine corps	Dec'r 20, 1835	4 00	.....do.....
Rachel Steel.....	Orderly serg't m. corps	Nov'r 28, 1832	8 00	March 3, 1837.
Mary Stellwagen.....	Sailingmaster.....	Nov'r 16, 1828	20 00	Jan'y 30, 1834.
Ann Stephenson.....	.....do.....	August 27, 1813	20 00	March 3, 1817.
Jane Smith.....	Midshipman.....	March 21, 1831	9 50	June 30, 1834.
Mary Stevens.....	Sailingmaster.....	April 18, 1816	20 00	March 3, 1837.
Alice Smiley.....	Seaman.....	Feb'y 27, 1813	6 00	.....do.....
Elizabeth Simmons.....	Marine.....	Jan'y 30, 1811	3 50	.....do.....
Ann Maria Stivers.....	Landsman.....	April 22, 1839	4 00	.....do.....
Mary Stone.....	Seaman.....	April 20, 1840	6 00	.....do.....
Mary Stevenson.....	.....do.....	Oct'r 8, 1828	6 00	June 30, 1834.
Elizabeth Sevier.....	Captain marine corps.	May 9, 1837	20 00	Jan'y 20, 1813.
Mary Ann Springer.....	Lieutenant.....	May 25, 1820	25 00	March 3, 1837.
Frances A. Thomas.....	.....do.....	Sept'r 10, 1829	25 00	June 30, 1834.
Ann Tight.....	Seaman.....	March 24, 1834	6 00	March 3, 1837.
Elizabeth Trapnell.....	Marine.....	Sept'r 10, 1813	3 50	March 4, 1814.
Ann Tilden.....	Seaman.....	April 20, 1815	6 00	March 3, 1837.
Eliza Toohey.....	Sergeant marine corps	Nov'r 13, 1837	6 50	.....do.....
Hannah Thompson.....	Seaman.....	April 9, 1835	6 00	.....do.....
Lucy R. Temple.....	Lieutenant.....	June 23, 1830	25 00	June 30, 1834.
Ann Taggart.....	Gunner.....	Dec'r 13, 1836	10 00	March 3, 1837.
Jane Trusty.....	Cook.....	July 24, 1839	9 00	.....do.....
Ann E. Tingey.....	Captain.....	Feb'y 22, 1829	50 00	June 30, 1834.
Emily Tupper.....	Captain marine corps.	Jan'y 18, 1838	20 00	March 3, 1837.
Elizabeth Trenchard.....	Captain.....	Nov'r 3, 1824	50 00	June 30, 1834.
Emma C. B. Thompson.....	.....do.....	Sept'r 2, 1832	50 00	.....do.....
Hannah Ulrick.....	Sailingmaster.....	June 6, 1822	20 00	March 3, 1817.
Rachel Van Patten.....	Ordinary seaman.....	April 23, 1825	5 00	March 3, 1837.
Lydia Vanhorn.....	Marine.....	Oct'r 10, 1814	3 50	March 4, 1814.
Anna Vanderfeen.....	Ordinary seaman.....	June 30, 1824	5 00	June 30, 1834.
Eleanor Wills.....	Landsman.....	August 10, 1800	4 00	March 3, 1837.
Abigail Warren.....	Marine.....	Sept'r 12, 1812	3 50	.....do.....
Hannah Webb.....	Seaman.....	Jan'y 1, 1813	6 00	March 4, 1814.
Sarah V. Waldo.....	Master.....	August 30, 1838	20 00	March 3, 1837.
Elizabeth White.....	Master-at-arms.....	May 18, 1815	9 00	.....do.....

## 1—Continued.

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Margaret C. Worth.....	Lieutenant.....	Feb'y 3, 1841	\$25 00	March 3, 1837.
Mary D. Wade.....	.....do.....	Nov'r 15, 1816	25 00	.....do.....
Catharine Walling.....	Seaman.....	Dec'r 3, 1813	6 00	.....do.....
Mary S. Wilkinson.....	Passed midshipman...	Nov'r 14, 1839	12 50	.....do.....
Edna M. Wood.....	.....do.....	Oct'r 9, 1836	12 50	June 30, 1834.
Electa Webster.....	Lieutenant.....	August 25, 1825	25 00	.....do.....
Marvel Wilcox.....	Carpenter's mate.....	August 8, 1813	9 50	March 3, 1817.
Susan C. Woolsey.....	Captain.....	May 18, 1838	50 00	March 3, 1837.
Ellen Woolsey.....	Lieutenant.....	Oct'r 25, 1840	25 00	.....do.....
Catharine Wise.....	Purser.....	Nov'r 20, 1824	20 00	June 30, 1834.
Sarah A. Willard.....	Sergeant marine corps.	May 30, 1837	6 50	March 3, 1837.
Charloite Wares.....	Sailingmaster.....	Dec'r 4, 1815	20 00	March 3, 1817.
Julia Weed.....	Captain marine corps..	March 5, 1838	20 00	March 3, 1837.
Rebecca Winn.....	Purser.....	Feb'y 18, 1836	20 00	June 30, 1834.
Drucilla Whetcroft.....	Sergeant marine corps	August 29, 1834	6 50	March 3, 1837.
Ann T. Yarnall.....	Carpenter's mate.....	April 30, 1837	9 50	.....do.....

Number of widows, 348. Annual amount of their pensions, \$64,558.

## 2.

*Alphabetical list of minor children whose pensions ceased on the 31st of August, 1842.*

Names of children.	Father's rank.	Monthly pension.	Commencement of pension.
Elizabeth Ardis.....	Carpenter's mate.....	\$9 50	September 8, 1831....
Ann Ardis.....			
Emma Ardis.....			
Franklin Armstrong.....	Sergeant marine corps..	7 50	January 23, 1825.....
Venerando Armstrong.....			
Thomas W. Adams.....			
Laura V. Anderson.....	Captain marine corps ...	20 00	January 1, 1837.....
Ann E. Armstrong.....			
Thomas P. Armstrong.....	Carpenter.....	10 00	November 27, 1839...
George W. Armstrong.....			
Virginia Armstrong.....			
Julia A. Blakeslee.....	Marine.....	3 50	July 31, 1827.....
John Bell.....			
James Bell.....	Cook.....	9 00	August 15, 1831.....
Mary Jane Bell.....			
Maria Bell.....			
Marcellus Bell.....			
Elizabeth E. A. Berry.....	Seaman.....	6 00	October 9, 1840.....
Thomas J. P. Bliss.....			
William L. Booth.....	Master commandant....	30 00	January 1, 1837.....
Thomas A. Booth.....			
George T. Bassett.....			
	Surgeon.....	25 00	August 20, 1830.....

## 2—Continued.

Names of children.	Father's rank.	Monthly pension.	Commencement of pension.
James Covenhoven .....	Marine .....	\$3 50	February 26, 1837....
Margaret T. Chamberlain .....	Sailingmaster .....	20 00	February 8, 1822.....
Emeline Cousins.....	Seaman.....	6 00	May 21, 1829.....
Delia Cousins.....			
Charles W. Conway .....	Private marine corps...	3 50	July 14, 1833 .....
William M. Caldwell.....	Lieutenant .....	25 00	June 5, 1827.....
John G. Carr.....	Lieutenant .....	25 00	April 15, 1840.....
Emma Demarest.....	Sergeant marine corps..	8 00	August 24, 1834.....
Margaret P. Darragh.....	Purser.....	20 00	January 9, 1831.....
Tere-a Davis .....	Carpenter .....	10 00	January 11, 1829.....
Eliza E. A. R. Denison .....	Purser.....	20 00	March 15, 1822.....
Mary Jane Fisher .....	Corporal marine corps..	4 50	May 18, 1829.....
Elizabeth Ann Franks .....	Sergeant marine corps..	6 50	October 27, 1840.....
Henry N. Franks.....			
Children of Timothy Griswold..	Ordinary seaman.....	5 00	July 1, 1838.....
M. A. S. Grimke.....	Lieutenant .....	25 00	November 30, 1825...
Edward Garrison.....	Seaman.....	6 00	April 2, 1825.....
Adolphus Heerman.....	Surgeon.....	35 00	April 20, 1837.....
Theodore Heerman.....			
Valentine M. Heerman.....			
Charles F. Heerman.....			
Clifford Heerman.....			
Stephen D. Hibbert.....	Gunner .....	10 00	July 9, 1832.....
George J. Hall .....	Seaman.....	6 00	December 10, 1834...
Mary Ann Hunt.....	Ordinary seaman.....	5 00	April 20, 1837.....
John Henry Harrison.....	.....do.....	5 00	August 16, 1831.....
Joseph B. Jones.....	Sailingmaster.....	20 00	May 21, 1826.....
Lucinda Jolly .....	Captain foretop .....	7 00	August 15, 1839.....
Hannah Jolly.....			
James Jolly .....			
Jane Jolly.....			
William Kidwell.....	Private marine corps....	3 50	July 1, 1837.....
John Kidwell.....			
J. B. O'H. Lightelle.....	.....do.....	3 50	December 22, 1824...
James Livingston.....	Ordinary seaman.....	5 00	June 4, 1829.....
Caroline Lord .....	Gunner .....	10 00	July 9, 1829.....
Adeline K. Lowe.....	Lieutenant .....	25 00	May 2, 1826.....
Mary F. Linscott.....	Gunner .....	10 00	May 25, 1827.....
Caroline W. Linscott .....			
William O. Martin.....	Seaman.....	6 00	October 10, 1838.....
Margaret R. Munroe .....	Boatswain.....	10 00	March 27, 1832.....
Augustus R. Macdonough .....	Captain .....	50 00	January 1, 1837.....
Thomas Macdonough.....			
Charles R. Macdonough.....			
Mary A. McCloud.....	Boatswain.....	10 00	July 1, 1837.....
Martha E. Mozart.....	Master-at-arms .....	9 00	August 16, 1839.....
Mary Ann McCoy.....	Seaman.....	6 00	October 13, 1835.....
James B. McCauley.....	Lieutenant .....	25 00	February 20, 1827....
Alexander Moran .....	Quarter gunner .....	7 50	February 10, 1829....
Maria C. Norris.....	Master commandant....	30 00	January 1, 1838.....
Shubrick Norris .....			

## 2—Continued.

Names of children.	Father's rank.	Monthly pension.	Commencement of pension.
Alexander Perry.....	Lieutenant.....	\$25 00	July 1, 1837.....
Mary R. Ritchie.....	.....do.....	25 00	June 26, 1831.....
Mary K. Reany.....	Purser's steward.....	9 00	January 3, 1831.....
Mary Roberts.....	Musician marine corps..	4 00	October 1, 1835.....
Margaret Roberts.....			
Sarah Robinson.....	Ordinary seaman.....	5 00	March 10, 1841.....
Susan Robinson.....			
Hannah T. Sanderson.....	Lieutenant.....	25 00	August 23, 1831.....
Gilberta F. Sinclair.....	Captain.....	50 00	January 1, 1837.....
Alonzo P. Smith.....	Lieutenant.....	25 00	January 1, 1840.....
Deborah Sullivan.....	Seaman.....	6 00	July 7, 1840.....
Florence Sullivan.....			
Catharine M. Smith.....	Master commandant.....	30 00	.....
Robert Townner.....	Gunner.....	10 00	September 2, 1834.....
Margaret R. Timberlake.....	Purser.....	20 00	April 2, 1828.....
Eliza J. Trimble.....	Sailmaker.....	10 00	July 1, 1837.....
John L. Thurston.....	Sergeant marine corps..	6 50	September 11, 1840.....
Children of Robert L. Thorn.....	Surgeon.....	30 00	October 12, 1838.....
Emily Vandackenhausen.....	Private marine corps.....	3 50	March 12, 1833.....
John Woods.....	Boatswain.....	10 00	January 1, 1839.....
T. G. Westcott.....	Lieutenant.....	25 00	.....
Thomas A. Young.....	Lieutenant marine corps	12 50	July 7, 1835.....

Number of minor children, 95. Annual amount of their pensions, \$11,448.

## 3.

*Alphabetical list of Widows who have received pension certificates since the 20th of November, 1841.*

Names of pensioners.	Husband's rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Mary E. Arlett.....	Marine.....	March 5, 1842	\$3 50	June 30, 1834.
Sarah A. Bacon.....	Passed midshipman...	May 1, 1839	12 50	March 3, 1837.
Mary Barry.....	Master.....	June 23, 1842	20 00	June 30, 1834.
Funice Corbit.....	Ordinary seaman.....	May 1, 1823	5 00	March 3, 1837.
Ellen Griffin.....	.....do.....	April 25, 1835	5 00	.....do.....
Dyonisia Goodrum.....	Lieutenant.....	May 9, 1841	25 00	.....do.....
Mary Ann Morrice.....	Ship's steward.....	August 2, 1841	9 00	.....do.....
Ann Palmer.....	Sergeant marine corps	Oct'r 13, 1841	8 00	June 30, 1834.
Catharine Phillips.....	Landsman.....	Feb'y 18, 1834	4 00	March 3, 1837.
Almira Pease.....	Carpenter.....	May 12, 1842	10 00	June 30, 1834.
Susan Rackliff.....	Ordinary seaman.....	July 6, 1841	5 00	March 3, 1837.
Maria Ridgeway.....	Commander.....	Nov'r 1, 1841	30 00	June 30, 1834.
Jane Sproston.....	Surgeon.....	Jan'y 21, 1842	35 00	.....do.....
Julia Snowman.....	Seaman.....	October 5, 1841	6 00	.....do.....
Maria M. Wainwright.....	Lt. Col. marine corps.	October 6, 1841	30 00	.....do.....
Mary Jane Wilson.....	Armorer.....	July 27, 1841	9 00	.....do.....
Constance Wade.....	Gunner.....	Feb'y 27, 1841	10 00	March 3, 1837.

All the pensions granted under the act of March 3, 1837, expired on the 31st August, 1842, in conformity with the first section of the act of the 16th of August, 1841, entitled, "An act to provide for the payment of navy pensions." Pensions granted under the act of June 30, 1834, are for five years, unless the widow should marry or die before the expiration of that period.

Number of widows, 17; annual amount of their pensions, \$2,724.

## 4.

*Alphabetical list of minor children to whom pensions have been granted, under the act of March 3, 1837, since the 20th November, 1841.*

Names of children.	Father's rank.	Monthly pension.	Commencement of pension.
John Brown .....	Musician.....	\$4 00	February 3, 1841.....
William Brown .....			
James Brown.....			
Richard Brown .....			
James M. Grymes.....	Captain marine corps...	20 00	September 25, 1841...
Louisa Goss .....	Carpenter's mate.....	9 50	February 6, 1842.....
John A. T. Goss .....			
Thomas Goss.....			
Thomas T. Hooper.....	Seaman.....	6 00	February 14, 1815....
Benjamin Jackson.....	Gunner .....	10 00	November 26, 1831...
Theodore Lee.....	Lieutenant .....	25 00	October 25, 1838.....
Matilda T. Lee.....			
John Moran .....	Landsman.....	4 00	April 26, 1838 .....
Lewis R. Morris.....	Lieutenant .....	25 00	August 12, 1841.....
Thomas E. Morris.....			
G. J. O'Neill Palmer .....			
John Sivers.....	Passed assistant surgeon.	17 50	January 5, 1840.....
Wilhemina Steinbogh.....	Sergeant marine corps..	6 50	January 1, 1842.....
	Boatswain.....	10 00	July 13, 1841.....

All the above-mentioned pensions expired on the 31st of August, 1842, in conformity with the first section of the act of the 16th of August, 1841, entitled, "An act to provide for the payment of navy pensions."

Number of minor children, 18; annual amount of their pensions, \$1,650.

## 5.

*Alphabetical list of widows who are now on the pension list under the act of June 30, 1834, granting five years' pensions, complete to November 19, 1842.*

Names of the widows.	Names of their husbands.	Their husbands' rank.	Monthly allowance.	Time up to which they are to be paid, &c.
Ashton, Louisa...	Gurdon C.....	Lieutenant.....	\$25 00	Commencing Oct. 11, 1840, & terminating Oct. 11, 1845..
Arlett, Mary E...	John C.....	Marine.....	3 50	Commencing Mar. 5, 1842, & terminating Mar. 5, 1847..
Bacon, Sarah A...	Frederick A.....	Passed midshipm'n	12 50	Commencing May 1, 1839, & terminating May 1, 1844...
Barry, Mary.....	Thomas.....	Master.....	20 00	Commencing June 28, 1842, & terminating June 28, 1847..
Cope, Isabella...	John.....	Seaman.....	6 00	Commencing Jan. 31, 1840, & terminating Jan. 31, 1845..
Corlette, Susan...	Edward.....	Ordinary seaman.	5 00	Commencing July 5, 1840, & terminating July 5, 1845...
Crawford, Mary..	David R.....	Passed midshipm'n	12 50	Commencing July 26, 1841, & terminating July 26, 1846..
*Coulter, Sarah ..	Mifflin.....	Surgeon.....	25 00	Commencing Oct. 12, 1840, & terminating Oct. 12, 1845..



## 5—Continued.

Names of the widows.	Names of their husbands.	Their husbands' rank.	Monthly allowance.	Time up to which they are to be paid, &c.
Lyne, Elizabeth B.	William B.....	Lieutenant .....	\$25 00	Commencing May 1, 1841, & terminating May 1, 1846...
Pease, Almira...	Levi.....	Carpenter .....	10 00	Commencing May 12, 1842, & terminating May 12, 1847..
Palmer, Ann....	Morris.....	Or. sergt. m. corps	8 00	Commencing Oct. 13, 1841, & terminating Oct. 13, 1846..
Ridgeway, Maria.	Ebenezer.....	Commander .....	30 00	Commencing Nov. 1, 1841, & terminating Nov. 1, 1846...
Snowman, Julia..	Samuel.....	Seaman .....	6 00	Commencing Oct. 5, 1841, & terminating Oct. 5, 1846...
Sproston, Jane...	George S.....	Surgeon .....	35 00	Commencing Jan. 21, 1842, & terminating Jan. 21, 1847..
Stinger, Rebec. S.	John.....	Landsman .....	4 00	Commencing July 15, 1839, & terminating July 15, 1844..
Underwood, S. J.	Joseph A.....	Lieutenant .....	25 00	Commencing July 24, 1840, & terminating July 24, 1845..
Wilson, Mary J..	Enoch .....	Armorer .....	9 00	Commencing July 27, 1841, & terminating July 27, 1846..
Wainwright, M.M.	Robert D.....	Lt. col. m. corps..	30 00	Commencing Oct. 6, 1841, & terminating Oct. 6, 1846...

\* Dead. The remainder to be paid to her children.

Number of widows, 17; annual amount of their pensions, \$3,499.

## 6.

*Alphabetical list of invalid naval pensioners, complete to November 18 1842.*

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Samuel Abbott.....	Seaman .....	March 1, 1815	\$5 00	April 23, 1800.
Zephaniah Allen.....	Marine .....	March 1, 1801	3 60	.....do.....
George Adams.....	Quarter gunner .....	Dec'r 31, 1836	5 62½	.....do.....
George Alexander.....	Ordinary seaman.....	July 19, 1814	8 00	.....do.....
William Adams.....	Seaman .....	July 25, 1838	3 00	.....do.....
Joseph Ashley.....	Ordinary seaman.....	Dec'r 18, 1835	2 50	.....do.....
James Allcorn.....	Sailing-master .....	January 1, 1815	20 00	.....do.....
Robert Andrews.....	Quarter gunner .....	August 1, 1829	4 50	.....do.....
Thomas Austin.....	Yeoman .....	Dec'r 7, 1838	7 50	.....do.....
John Adams.....	Seaman .....	Feb'y 17, 1836	6 00	.....do.....
Alexander Adams.....	... do.....	October 6, 1812	3 00	.....do.....
Gabriel Anderson.....	... do.....	August 19, 1835	1 50	.....do.....
John Anderson.....	Captain of the hold...	Oct'r 21, 1841	1 87½	.....do.....
Nathan Burr.....	Quarter gunner.....	Dec'r 30, 1814	4 50	.....do.....
Samuel Bryant.....	Seaman .....	March 5, 1830	3 00	.....do.....
John Brown.....	... do.....	July 1, 1829	6 00	.....do.....
Peter Barnard.....	Ordinary seaman.....	Dec'r 1, 1814	4 00	.....do.....
John Brannan.....	Seaman .....	June 28, 1815	5 00	.....do.....

6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John Beatty	Marine	June 1, 1830	\$4 00	April 23, 1800.
Luke Brown	Seaman	July 5, 1834	3 00	.....do.....
John Bevins	Quarter gunner	Feb'r 24, 1837	7 50	.....do.....
Isaac Bassett	Ordinary seaman	May 15, 1814	5 00	.....do.....
John Bostrom	Quarter gunner	May 30, 1834	3 00	.....do.....
Frederick Boyer	Sergeant marine corps	Sep'r 5, 1834	2 25	.....do.....
James Bird	Seaman	Nov'r 7, 1828	6 00	.....do.....
John Burnham	Master's mate	Dec'r 10, 1813	9 00	.....do.....
John Butler	Seaman	Nov'r 22, 1815	5 00	.....do.....
John Berry	Master-at-arms	March 18, 1835	4 50	.....do.....
John Brown the fourth	Seaman	August 31, 1825	3 00	.....do.....
Edward Berry	.....do.....	July 4, 1837	4 50	.....do.....
Loyd J. Bryan	Passed midshipman	Jan'y 22, 1837	3 12½	.....do.....
James Bantam	Ordinary seaman	July 5, 1833	4 00	.....do.....
James Bell	Seaman	August 23, 1823	6 00	.....do.....
Godfrey Bowman	.....do.....	Sep'r 10, 1813	6 00	.....do.....
Jonathan Bulkley	Midshipman	June 17, 1834	9 00	.....do.....
Edward Barker	Marine	May 18, 1836	3 50	.....do.....
James Barron	Captain	June 22, 1807	25 00	.....do.....
John Baxter	Seaman	Feb'y 28, 1819	6 00	.....do.....
Peter George	Captain's steward	May 19, 1834	6 00	.....do.....
John Brumley	Seaman	Sep'r 1, 1826	6 00	.....do.....
William Barker	Marine	July 1, 1802	6 00	.....do.....
William Baggs	.....do.....	March 1, 1814	3 00	.....do.....
George Boyle	Seaman	Nov'r 21, 1837	4 60	.....do.....
John Bruce	Quarter gunner	Nov'r 1, 1826	9 00	.....do.....
William Bain	.....do.....	Oct'r 22, 1833	3 50	.....do.....
David C. Bunnell	Seaman	April 27, 1813	3 00	.....do.....
Thomas Bowden	Quartermaster	Dec'r 7, 1837	4 00	.....do.....
Henry S. Baker	Seaman	Dec'r 11, 1838	4 50	.....do.....
Robert Berry	.....do.....	June 22, 1829	6 00	.....do.....
Joseph Barrett	Quarter gunner	April 17, 1813	9 00	.....do.....
John Bennett	Seaman	Dec'r 14, 1814	6 00	.....do.....
James Blake	Ordinary seaman	July 26, 1822	5 00	.....do.....
Alfred Batts	.....do.....	Oct'r 24, 1833	5 00	.....do.....
George Bennett	.....do.....	Sep'r 16, 1839	2 50	.....do.....
Lemuel Bryant	.....do.....	August 1, 1814	8 00	.....do.....
Samuel Bosworth	Seaman	July 3, 1823	6 00	.....do.....
James Barker	Quartermaster	April 10, 1836	8 00	.....do.....
Julius J. Boyle	Midshipman	Nov'r 22, 1823	4 75	.....do.....
Thomas Bartlett	Seaman	Nov'r 24, 1834	6 00	.....do.....
William B. Brown	Gunner	July 4, 1835	2 50	.....do.....
Edward Brett	Marine	June 12, 1815	3 00	.....do.....
Robert Butler	Quarter gunner	April 30, 1835	3 75	.....do.....
Robert Blair	Seaman	Jan'y 1, 1832	6 00	.....do.....
Samuel Butler	Quarter gunner	August 28, 1815	8 00	.....do.....
Thomas Buchanan	Marine	June 4, 1829	3 00	.....do.....
Thomas Brownell	Master	Dec'r 31, 1829	} 10 00	Aug. 29, 1842.
		terminating in October, 1840		
Thomas J. Clarke	Carpenter's mate	April 27, 1839	2 37½	April 23, 1800.
Horace Carter	Landsmen	Feb'y 26, 1837	2 00	.....do.....
John Clark	Boatswain's mate	Jan'y 15, 1838	7 12½	.....do.....
Robert Carson	Ordinary seaman	June 26, 1821	5 00	.....do.....
Leonsrd Chase	.....do.....	August 1, 1828	5 00	.....do.....
John Clements	Seaman	Dec. 23, 1812	6 00	.....do.....
Michael Collins	.....do.....	April 22, 1834	4 50	.....do.....
Abraham Caswell	Ordinary seaman	Sept. 30, 1838	2 50	.....do.....

## 6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
David Connor.....	Lieutenant.....	May 23, 1815	\$16 66 $\frac{2}{3}$	April 23, 1800.
Daniel H. Cole.....	Marine.....	Dec. 27, 1833	3 00	.....do.....
John S. Chauncey.....	Midshipman.....	Sept. 30, 1817	4 75	.....do.....
William Cook.....	Cabin cook.....	June 30, 1836	4 50	.....do.....
James Cole.....	Seaman.....	May 1, 1823	5 00	.....do.....
Horatio N. Crabb.....	1st lieutenant M. C.....	January 1, 1831	7 50	.....do.....
John Conklin.....	Seaman.....	Dec. 31, 1837	3 00	.....do.....
David Christie.....	Marine.....	January 1, 1841	4 00	.....do.....
Enos R. Childs.....	Midshipman.....	April 2, 1823	9 50	.....do.....
Nathaniel Coville.....	Quarter gunner.....	January 1, 1832	9 00	.....do.....
Nathaniel Chapman.....	.....do.....	June 10, 1815	9 00	.....do.....
George Cornell.....	Carpenter's mate.....	Sept. 10, 1813	9 00	.....do.....
John C. Champlin.....	Seaman.....	May 21, 1831	6 00	.....do.....
John Clark.....	.....do.....	May 31, 1825	3 00	.....do.....
Thomas R. Clarke.....	Ordinary seamen.....	Feb. 18, 1823	3 75	.....do.....
John Cole.....	.....do.....	Feb. 6, 1832	5 00	.....do.....
John Clough.....	Sailingmaster.....	June 4, 1829	15 00	.....do.....
Edward Cardevan.....	Seaman.....	Feb. 28, 1836	3 00	.....do.....
Francis Covenhoven.....	Ordinary seaman.....	June 22, 1807	3 75	.....do.....
Stephen Champlin.....	Lieutenant.....	Sept. 3, 1814	10 00	.....do.....
R. B. Cunningham.....	.....do.....	March 25, 1840	12 50	.....do.....
R. C. Cogdell.....	Passed midshipman.....	Feb. 24, 1839	6 25	March 3, 1837.
Robert Cathcart.....	Seaman.....	Sept. 20, 1816	6 00	April 23, 1800.
John Collins.....	.....do.....	Feb. 9, 1813	6 00	.....do.....
George Coomes.....	.....do.....	July 1, 1825	8 00	.....do.....
William Cantrill.....	Marine.....	April 8, 1830	2 00	.....do.....
Edward Carr.....	Seaman.....	May 13, 1835	6 00	.....do.....
William Clark.....	Ordinary seaman.....	August 29, 1842	5 00	.....do.....
John Conklin.....	.....do.....	August 8, 1840	5 00	.....do.....
John Carrick.....	Landsman.....	Sept. 16, 1842	4 00	.....do.....
John Collins.....	Seaman.....	Feb. 28, 1839	3 00	.....do.....
William Dunbar.....	.....do.....	May 31, 1840	4 50	.....do.....
Richard Dunn.....	.....do.....	January 1, 1829	6 00	.....do.....
James Dixon.....	.....do.....	Nov. 11, 1835	3 00	.....do.....
Daniel Denvers.....	Marine.....	Oct. 22, 1835	3 00	.....do.....
Marmaduke Dove.....	Sailingmaster.....	April 20, 1833	5 00	.....do.....
Stillman Dodge.....	Ordinary seaman.....	May 1, 1831	3 33 $\frac{1}{3}$	.....do.....
John Downes.....	Master commandant.....	Nov. 28, 1813	10 00	.....do.....
John A. Dickason.....	Carpenter.....	Aug. 19, 1835	3 33 $\frac{1}{3}$	.....do.....
Timothy Donigan.....	Ordinary seaman.....	April 27, 1837	2 50	.....do.....
William Dunn.....	Gunner.....	October 8, 1835	10 00	.....do.....
Joseph Dalrymple.....	Seaman.....	Feb. 24, 1814	4 50	.....do.....
Owen Deddolph.....	Gunner.....	June 25, 1814	5 00	.....do.....
Matthias Douglass.....	Seaman.....	April 23, 1814	10 00	.....do.....
James Dunham.....	Gunner.....	July 4, 1828	5 00	.....do.....
John Daniels.....	Quartermaster.....	Sept. 7, 1816	9 00	.....do.....
John Dunn.....	Marine.....	July 1, 1818	3 00	.....do.....
John Davidson.....	Lieutenant.....	March 1, 1801	20 00	.....do.....
Samuel Daykin.....	Marine.....	Oct. 22, 1834	3 00	.....do.....
John Diragen.....	Seaman.....	Dec. 22, 1815	5 00	.....do.....
James Darley.....	Ordinary seamen.....	March 1, 1838	5 00	.....do.....
William Darrington.....	Yeoman.....	Oct. 18, 1841	3 75	.....do.....
Thomas Edwards.....	Quartermaster.....	January 1, 1823	9 00	.....do.....
Standish F. Edwards.....	Seaman.....	May 11, 1837	3 00	.....do.....
Francis Elgiott.....	Marine.....	April 20, 1838	3 50	.....do.....
Ebenezer Evans.....	Seaman.....	March 2, 1813	6 00	.....do.....
Jesse Elam.....	Marine.....	August 1, 1828	6 00	.....do.....
William Evans.....	.....do.....	May 1, 1827	3 00	.....do.....

## 6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Abner Enos.....	Master's mate .....	June 4, 1830	\$6 00	April 23, 1800.
Gardner Edmonds.....	Ordinary seaman.....	June 4, 1814	5 00	.....do.....
D. S. Edwards.....	Surgeon's mate.....	June 28, 1822	7 50	.....do.....
James Eddo.....	Captain of the fore-castle	Jan. 16, 1835	1 75	.....do.....
Alvin Edson.....	1st lieutenant M. C....	Feb. 6, 1832	7 50	.....do.....
Thomas English.....	Ordinary seaman.....	May 14, 1832	5 00	.....do.....
George Edwards.....	Boy (1st class).....	May 21, 1837	4 00	.....do.....
Francis H. Ellison.....	Sailingmaster.....	Dec. 27, 1830	15 00	.....do.....
Nicholas T. Farrell.....	Marine.....	May 10, 1830	3 00	.....do.....
William Farrell.....	Seaman.....	June 4, 1829	6 00	.....do.....
Alfred Fisher.....	.....do.....	May 15, 1835	5 00	.....do.....
Warren Fogg.....	Marine.....	June 1, 1813	87½	.....do.....
Jack Flood.....	Seaman.....	July 7, 1837	6 00	.....do.....
James Furguson.....	Sailingmaster.....	Feb'y 19, 1827	10 00	.....do.....
Andrew W. Fleming.....	Seaman.....	Dec'r 20, 1839	4 50	.....do.....
Robert Forsaith.....	Marine.....	May 18, 1799	3 00	.....do.....
William Flagg.....	Lieutenant.....	Oct'r 31, 1800	18 75	.....do.....
John Fallerhee.....	Landsman.....	August 1, 1827	4 00	.....do.....
George Fitzgerald.....	Seaman.....	Oct'r 11, 1838	2 00	.....do.....
Michael Fitzpatrick.....	Master-at-arms.....	June 4, 1829	9 00	.....do.....
Moses French.....	Seaman.....	April 14, 1834	6 00	.....do.....
Peter Foley.....	Marine.....	June 27, 1837	3 50	.....do.....
William Fitzgerald.....	Seaman.....	Dec'r 31, 1836	6 00	.....do.....
John Falvey.....	.....do.....	August 29, 1842	3 00	.....do.....
Henry Fry.....	Purser.....	Jan'y 1, 1838	20 00	August 29, 1842.
George Fields.....	Gunner's mate.....	Jan'y 28, 1841	4 75	April 23, 1800.
L. C. F. Fatio.....	Midshipman.....	March 25, 1825	2 37½	.....do.....
Benjamin Franklin.....	Seaman.....	Jan'y 1, 1840	6 00	June 1, 1842.
William M. Goodshall.....	.....do.....	July 15, 1825	6 00	.....do.....
Chester Goodell.....	Ordinary seaman.....	Dec'r 12, 1834	3 00	.....do.....
Charles Gordon.....	.....do.....	May 11, 1835	5 00	.....do.....
James Good.....	Seaman.....	Jan'y 1, 1829	12 00	.....do.....
Anthony Gerome.....	.....do.....	Jan'y 1, 1832	6 00	.....do.....
William Gregory.....	Marine.....	May 25, 1830	4 00	.....do.....
Samuel H. Green.....	Quartermaster.....	Jan'y 1, 1819	9 00	.....do.....
John Geyer.....	Seaman.....	April 6, 1815	6 00	April 2, 1816.
Daniel Gardner.....	Ordinary seaman.....	March 28, 1814	2 50	April 23, 1800.
Anthony Gale.....	Lieut.col.marine corps	Jan'y 5, 1835	25 00	.....do.....
John Grant.....	Seaman.....	May 20, 1813	6 00	.....do.....
William Gunnison.....	Ordinary seaman.....	Nov'r 24, 1833	5 00	.....do.....
James Glass.....	Sergeant marine corps	Oct'r 24, 1836	3 25	.....do.....
James Grant.....	Seaman.....	April 9, 1829	8 00	.....do.....
Patrick Gilligan.....	Marine.....	June 4, 1829	3 50	.....do.....
John Granso.....	Captain main-top.....	March 30, 1833	3 50	.....do.....
John Grant.....	Ordinary seaman.....	July 1, 1831	4 00	.....do.....
Peter Green.....	Seaman.....	April 3, 1827	5 00	.....do.....
William Gillen.....	.....do.....	Jan'y 1, 1832	6 00	.....do.....
Jerry Gardner.....	Ordinary seaman.....	Jan'y 14, 1818	5 00	.....do.....
Richard Gilbody.....	.....do.....	Jan'y 14, 1826	4 00	.....do.....
Amaziah Goodwin.....	Seaman.....	Jan'y 1, 1840	6 00	.....do.....
Jacob Greaves.....	.....do.....	.....do.....	8 00	August 29, 1842.
James Hatch.....	Quarter gunner.....	July 1, 1814	12 00	April 23, 1800.
William Herringbrook.....	Seaman.....	Feb'y 18, 1814	6 00	.....do.....
John Hogan.....	.....do.....	March 4, 1830	3 00	.....do.....
John J. Hardy.....	.....do.....	June 25, 1813	6 00	.....do.....
John Harris.....	Quarter gunner.....	August 1, 1827	4 50	.....do.....

## 6--Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John Hussey.....	Ordinary seaman.....	Jan'y 1, 1832	\$5 00	April 23, 1800.
Simon Hillman.....	.....do.....	July 3, 1815	4 00	.....do.....
Horatio N. Harrison.....	Passed midshipman.....	July 15, 1838	6 50	.....do.....
Elijah L. Harris.....	Marine.....	Sept'r 25, 1833	3 00	.....do.....
John Hamilton.....	Seaman.....	May 1, 1827	6 00	.....do.....
John Hoxie.....	.....do.....	August 15, 1800	8 50	.....do.....
Samuel F. Holbrook.....	Carpenter.....	Sept'r 30, 1820	5 00	.....do.....
Isaac Harding.....	Seaman.....	May 9, 1834	5 00	.....do.....
Garret Hendricks.....	.....do.....	August 9, 1834	6 00	.....do.....
Uriah Hanscomb.....	Ordinary seaman.....	Oct'r 16, 1799	6 00	.....do.....
Samuel Hambleton.....	Purser.....	Sept'r 10, 1813	20 00	.....do.....
John Hall.....	Quartermaster.....	Oct'r 20, 1830	4 00	.....do.....
Roswell Hale.....	Ordinary seaman.....	Dec'r 25, 1819	5 00	.....do.....
Thomas Huntley.....	Seaman.....	August 31, 1837	3 00	.....do.....
Ephraim Hathaway.....	Landsman.....	June 15, 1838	4 00	.....do.....
J. L. C. Hardy.....	Midshipman.....	July 31, 1821	4 00	.....do.....
Alexander Hamilton.....	Boatswain's mate.....	May 31, 1838	7 12½	.....do.....
William Hamilton.....	Seaman.....	July 1, 1829	6 00	.....do.....
Joshua Howell.....	Ordinary seaman.....	June 30, 1836	5 00	.....do.....
William L. Hudson.....	Sailingmaster.....	July 6, 1817	15 00	.....do.....
Elias Hughes.....	Ordinary seaman.....	August 28, 1837	5 00	.....do.....
Robert Hazlett.....	Musician marine corps.....	Dec'r 12, 1836	2 00	.....do.....
Henry Hampton.....	Ordinary seaman.....	June 14, 1840	1 66½	.....do.....
John Hamilton.....	Seaman.....	Oct'r 5, 1837	6 00	.....do.....
William Hampson.....	Marine.....	August 29, 1842	2 62½	.....do.....
Michael Johnson.....	Seaman.....	Jan. 31, 1812	3 00	April 3, 1800.
David Jenkins.....	Seaman.....	Aug. 1, 1828	6 00	.....do.....
Richworth Jordan.....	Seaman.....	March 15, 1836	6 00	.....do.....
Gilbert Jones.....	Ordinary seaman.....	June 30, 1815	2 50	.....do.....
James Jackson.....	Seaman.....	March 4, 1816	5 00	.....do.....
Thomas Ap. C. Jones.....	Lieutenant.....	Dec. 14, 1814	25 00	.....do.....
William Jones.....	Boy.....	Aug. 24, 1814	2 25	.....do.....
Thomas Irwin.....	Private marine corps.....	Jan. 31, 1837	1 75	March 3, 1837.
Lewis Jones.....	Seaman.....	Oct. 27, 1835	6 00	April 23, 1800.
John Joyce.....	Ordinary seaman.....	Aug. 30, 1839	3 75	.....do.....
Ichabod Jackson.....	Seaman.....	Jan. 25, 1837	4 50	.....do.....
John Johnson.....	Seaman.....	March 23, 1814	6 00	.....do.....
Joseph Jackson.....	Cook.....	Oct. 29, 1839	4 50	.....do.....
Joseph Jennette.....	Captain of mizen top.....	June 12, 1838	2 33½	.....do.....
Thomas Jackson, 2d.....	Quartermaster.....	June 1, 1813	9 00	.....do.....
Sylvester Jameson.....	Seaman.....	Aug. 1, 1828	6 00	.....do.....
Edward Ingram.....	Boatswain.....	April 1, 1831	5 00	.....do.....
James Jeffers.....	Ordinary seaman.....	Dec. 7, 1805	6 00	.....do.....
Henry Jackson.....	Captain fore top.....	Sept. 20, 1836	3 75	.....do.....
Henry Irwin.....	Marine.....	Feb. 20, 1837	1 75	.....do.....
John Jones.....	Seaman.....	Sept. 16, 1842	3 00	.....do.....
Nicholas Kline.....	Sergeant marine corps.....	Jan. 1, 1832	5 00	.....do.....
William C. Keene.....	Master-at-arms.....	Sept. 10, 1813	9 00	.....do.....
William Kinnear.....	Marine.....	April 3, 1834	3 00	.....do.....
Daniel Kleiss.....	Ordinary seaman.....	May 6, 1829	5 00	.....do.....
Andrew Key.....	Boatswain's mate.....	July 9, 1839	19 00	.....do.....
James Kelly.....	Marine.....	Aug. 24, 1814	4 50	.....do.....
John Kiggan.....	Ordinary seaman.....	April 30, 1838	2 50	.....do.....
Henry Keeling.....	Gunner.....	Aug. 30, 1834	5 00	.....do.....
John Kenny.....	Quarter-gunner.....	July 1, 1825	4 50	.....do.....
George Kensinger.....	Master-at-arms.....	May 22, 1819	9 00	.....do.....
Thomas Kelly.....	Seaman.....	April 25, 1815	4 00	.....do.....
Joseph Kelly.....	Seaman.....	Oct. 31, 1835	4 50	.....do.....
John Keegan.....	Quartermaster.....	March 27, 1830	6 00	.....do.....

## 6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John Luscomb .....	Ordinary seaman.....	Jan. 15, 1838	\$2 50	April 23, 1800.
John Lang .....	Seaman .....	July 27, 1837	6 00	.....do.....
Edward Libbis .....	Ordinary seaman.....	June 11, 1836	1 66½	.....do.....
John Lewis .....	Boatswain's mate .....	Jan. 1, 1832	9 00	.....do.....
John Lovely .....	Seaman .....	April 23, 1835	6 00	.....do.....
Henry P. Leslie .....	Carpenter .....	Feb. 18, 1840	5 00	March 3, 1837.
James Lloyd .....	Marine .....	April 5, 1834	2 00	April 23, 1800.
Isaac Langley .....	Ordinary seaman.....	Dec. 1, 1814	5 00	.....do.....
John Lloyd .....	Marine .....	June 8, 1819	3 00	.....do.....
John Lagrange .....	Seaman .....	Nov. 30, 1834	4 50	.....do.....
Robert Lewis .....	Steward .....	Sept. 5, 1830	6 75	.....do.....
Richard Lee .....	Quartermaster .....	July 1, 1820	6 00	.....do.....
Timothy Lane .....	Cook .....	March 25, 1816	8 00	.....do.....
Peter Lewis .....	Ordinary seaman.....	July 30, 1837	5 00	.....do.....
John Leonard .....	Seaman .....	July 1, 1829	9 00	.....do.....
John G. Lanman .....	Quarter-gunner .....	June 20, 1836	7 50	.....do.....
John Lynch .....	Quartermaster .....	Dec. 7, 1838	9 00	.....do.....
Edward Martin.....	Seaman.....	March 3, 1837	3 00	.....do.....
Jacob Marks .....	Marine .....	June 30, 1810	43½	.....do.....
Richard Merchant.....	Marine .....	June 30, 1824	1 75	.....do.....
Charles Morris .....	Lieutenant .....	Aug. 19, 1812	12 50	.....do.....
James Mount.....	Sergeant marine corps	June 7, 1837	3 25	.....do.....
James Moses .....	Purser's steward .....	April 23, 1816	9 00	.....do.....
James McDonald.....	Corporal marine corps	Dec. 31, 1814	2 25	.....do.....
Joseph Marks .....	Seaman .....	May 1, 1827	6 00	.....do.....
Edward Myers .....	Seaman .....	May 27, 1837	3 00	.....do.....
Thomas Murdock.....	Seaman .....	June 30, 1836	6 00	.....do.....
William McKeever.....	Ordinary seaman.....	Oct. 14, 1835	2 50	.....do.....
John Munroe.....	Seaman .....	July 22, 1835	4 50	.....do.....
John Meigs .....	Seaman .....	July 1, 1819	10 00	.....do.....
John McGarr .....	Steward .....	Nov. 11, 1832	4 50	.....do.....
J. T. McLaughlin.....	Passed midshipman..	Feb. 8, 1837	9 37½	.....do.....
M. F. Maury .....	Lieutenant .....	Oct. 18, 1839	12 50	.....do.....
Archibald Moffatt.....	Ordinary seaman .....	June 1, 1832	5 00	.....do.....
Enoch M. Miley.....	Quarter-gunner .....	March 28, 1814	8 00	.....do.....
Peter McMahan .....	Ordinary seaman .....	Nov. 2, 1807	6 00	.....do.....
Samuel Meade .....	Seaman .....	Oct. 19, 1837	3 00	.....do.....
Andrew Mattison.....	Seaman .....	Sept'r 10, 1813	\$5 00	.....do.....
Patrick Murphy .....	Ordinary seaman.....	Oct'r 19, 1836	5 00	.....do.....
Giles Manchester.....	.....do.....	May 1, 1827	5 00	.....do.....
James Merrill.....	.....do.....	Oct'r 23, 1819	5 00	.....do.....
Colton Murry .....	Boatswain's mate .....	August 1, 1831	9 00	.....do.....
John HeMahon.....	Ordinary seaman.....	July 9, 1836	5 00	.....do.....
George Marshall.....	Gunner .....	March 31, 1825	2 50	.....do.....
William P. McArthur.....	Midshipman .....	Jan'y 15, 1838	4 75	.....do.....
Matthias McGill.....	Seaman .....	May 28, 1814	8 00	.....do.....
Samuel Miller .....	Captain marine corps.	April 24, 1814	10 00	.....do.....
John Marston, jr.....	Midshipman .....	Dec'r 31, 1814	4 75	.....do.....
William Mervine.....	.....do.....	Nov'r 28, 1812	3 16½	.....do.....
John Myrick .....	Gunner .....	August 7, 1837	5 00	.....do.....
John Metzger.....	Seaman .....	Feb'y 26, 1839	3 00	.....do.....
John Moore .....	.....do.....	January 9, 1838	4 50	.....do.....
James McDonald.....	.....do.....	Dec'r 31, 1826	3 00	.....do.....
John Malprine.....	Landsman .....	January 1, 1839	3 00	.....do.....
Patrick McLaughlin.....	Ordinary seaman.....	Nov'r 1, 1815	5 00	.....do.....
John Myers .....	Seaman .....	Nov'r 1, 1828	6 00	.....do.....
Samuel McIsaacs.....	Boy .....	July 30, 1814	5 00	.....do.....
William Moran .....	Seaman .....	Dec'r 5, 1815	6 00	.....do.....
Enos Marks .....	Ordinary seaman.....	Feb'y 16, 1815	5 00	.....do.....

6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John H. McNeale.....	Seaman.....	June 1, 1832	3 00	April 23, 1800.
John Mitchell.....	Quartermaster.....	June 11, 1832	8 00	.....do.....
Matthew McMurray.....	Seaman.....	Sept'r 1, 1827	6 00	.....do.....
Thomas Miller.....	.....do.....	Oct'r 23, 1829	4 00	.....do.....
John Moore.....	.....do.....	Dec'r 4, 1817	6 00	.....do.....
William Middleton.....	.....do.....	January 1, 1837	8 00	.....do.....
Henry J. Mercier.....	Ordinary seaman.....	May 20, 1837	1 25	.....do.....
John McLaughlin.....	Quarter gunner.....	October 3, 1842	7 50	.....do.....
James Nickerson.....	Seaman.....	Jan'y 15, 1815	6 00	.....do.....
James Nagle.....	.....do.....	June 30, 1834	5 00	.....do.....
John F. Noyer.....	Marine.....	July 1, 1826	5 00	.....do.....
John Nugent.....	Seaman.....	August 14, 1813	6 00	.....do.....
Francis B. Nichols.....	Midshipman.....	June 1, 1818	4 75	.....do.....
William Napier.....	Corporal marine corps.....	July 1, 1826	4 00	.....do.....
David Newbury.....	Ordinary seaman.....	April 15, 1836	2 50	.....do.....
William Newton.....	.....do.....	Sept'r 11, 1814	1 25	.....do.....
John Neilson.....	Quarter gunner.....	January 1, 1832	9 00	.....do.....
John Nicholson.....	Ordinary seaman.....	August 30, 1842	5 00	.....do.....
Josiah Needham.....	Quarter gunner.....	May 4, 1842	7 50	.....do.....
Asael Owens.....	Seaman.....	Jan'y 22, 1838	3 00	.....do.....
Samuel Odiorne, jr.....	.....do.....	Dec'r 24, 1825	6 00	.....do.....
Isaac Omans.....	.....do.....	June 26, 1821	6 00	.....do.....
Charles T. Platt.....	Lieutenant.....	June 4, 1829	25 00	.....do.....
Stephen Phyfer.....	Ordinary seaman.....	April 4, 1825	7 00	.....do.....
David Porter.....	Captain.....	January 4, 1825	40 00	.....do.....
Peter Pierson.....	Seaman.....	March 20, 1836	6 00	.....do.....
James Perry.....	Ship's corporal.....	Sept'r 1, 1827	9 00	.....do.....
Thomas Payne.....	Sailingmaster.....	Feb'y 7, 1834	20 00	.....do.....
William Perry.....	Seaman.....	April 9, 1825	6 00	.....do.....
Charles Pasture.....	.....do.....	March 4, 1815	5 00	.....do.....
Neal Patterson.....	.....do.....	July 1, 1820	3 00	.....do.....
John Peterson.....	Ordinary seaman.....	Sept'r 10, 1813	5 00	.....do.....
John Percival.....	Lieutenant.....	Dec'r 23, 1825	21 50	.....do.....
N. A. Prentiss.....	Sailingmaster.....	Nov'r 30, 1814	10 00	.....do.....
Edward Power.....	Ordinary seaman.....	May 27, 1834	5 00	.....do.....
Henry Powell.....	Seaman.....	Feb'y 10, 1840	3 00	.....do.....
Usher Parsons.....	Surgeon.....	Feb'y 7, 1816	12 50	.....do.....
Thomas B. Parsons.....	Seaman.....	Sept'r 1, 1808	9 00	.....do.....
Payne Perry.....	.....do.....	April 6, 1815	6 00	April 2, 1816.
Joseph Peck.....	.....do.....	Oct'r 19, 1836	2 50	April 23, 1800.
Charles Perry.....	.....do.....	Nov'r 30, 1837	4 50	.....do.....
John Price.....	.....do.....	May 11, 1835	6 00	.....do.....
John Piner.....	Ordinary seaman.....	Nov'r 6, 1828	5 00	.....do.....
Daniel Peck.....	Seaman.....	July 1, 1829	6 00	.....do.....
John Price.....	.....do.....	August 30, 1842	6 00	.....do.....
David Quill.....	Quartermaster.....	Feb'y 20, 1815	5 00	.....do.....
John Randall.....	Marine.....	Sept'r 2, 1805	3 00	.....do.....
John Roberts.....	Seaman.....	June 1, 1813	3 00	.....do.....
John Robinson.....	Master's mate.....	Jan'y 31, 1814	1 25	.....do.....
James Reid.....	Ordinary seaman.....	Jan'y 14, 1838	5 00	.....do.....
Thomas Richie.....	Seaman.....	May 14, 1839	3 00	.....do.....
James Roberts.....	Quarter gunner.....	April 14, 1832	1 87½	.....do.....
Jasper Read.....	Seaman.....	March 28, 1814	3 00	.....do.....
John Rogers.....	Captain's yeoman.....	May 18, 1832	4 50	.....do.....
John Romeo.....	Ordinary seaman.....	April 6, 1838	5 00	.....do.....
John Revel.....	.....do.....	August 26, 1833	2 50	.....do.....

## 6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Burnet Rogan.....	Landsman.....	June 6, 1838	\$2 00	April 23, 1800.
James Rankin.....	Seaman.....	June 8, 1839	4 50	.....do.....
James Rogers.....	Sailingmaster.....	July 27, 1815	15 00	.....do.....
James C. Reed.....	Ordinary seaman.....	May 5, 1837	2 50	.....do.....
Alonzo Rowley.....	.....do.....	March 15, 1836	5 00	.....do.....
Edward Ross.....	Boy.....	Jan'y 1, 1827	3 00	.....do.....
Edward Rowland.....	Ordinary seaman.....	Sept'r 11, 1814	5 00	.....do.....
Rosuanti Rhodes.....	Seaman.....	Dec'r 5, 1815	6 00	.....do.....
Samuel Riddle.....	.....do.....	June 30, 1836	3 00	.....do.....
Thomas Riley.....	Gunner.....	June 23, 1837	7 50	.....do.....
B. S. Randolph.....	Midshipman.....	Oct'r 7, 1815	6 00	.....do.....
Daniel Riggs.....	Ordinary seaman.....	May 18, 1836	3 75	.....do.....
Samuel Rose.....	Seaman.....	May 24, 1836	4 50	.....do.....
Nathan Rolfe.....	.....do.....	Dec'r 14, 1813	6 00	.....do.....
John Rice.....	.....do.....	July 19, 1830	6 00	.....do.....
William Robinson.....	Marine.....	June 15, 1817	6 00	.....do.....
John Riley.....	.....do.....	July 1, 1831	3 00	.....do.....
John Richards.....	Quarter gunner.....	Oct'r 20, 1829	9 00	.....do.....
Benjamin Richardson.....	Master's mate.....	Oct'r 8, 1829	10 00	.....do.....
John Richmond.....	Marine.....	July 31, 1816	1 75	.....do.....
Stephen B. Roath.....	Gunner's mate.....	August 22, 1842	4 75	.....do.....
Nathaniel Staples.....	Seaman.....	May 1, 1833	3 00	.....do.....
Patrick Scanton.....	Ordinary seaman.....	Jan'y 1, 1811	6 00	.....do.....
Benjamin Stevens.....	Master's mate.....	June 27, 1814	10 00	.....do.....
Stephen Simpson.....	Marine.....	Nov'r 16, 1835	3 50	.....do.....
William Smith.....	Ordinary seaman.....	June 1, 1827	5 00	.....do.....
Eli Stewart.....	Master's mate.....	May 20, 1814	7 00	.....do.....
Harmon Sutton.....	Seaman.....	July 1, 1829	3 00	.....do.....
Thomas J. Still.....	Marine.....	Jan'y 1, 1832	3 00	.....do.....
Charles Sheeter.....	Boatswain's mate.....	Nov'r 1, 1832	6 00	.....do.....
Thomas Smith.....	Seaman.....	April 5, 1839	2 00	.....do.....
Joseph Smith.....	Boatswain.....	Dec'r 31, 1837	5 00	.....do.....
Alfred Smith.....	Ordinary seaman.....	Sept'r 27, 1837	2 50	.....do.....
John Stevens.....	Quartermaster.....	May 21, 1831	4 50	.....do.....
Jeremiah Sullivan.....	Seaman.....	June 30, 1837	6 00	.....do.....
Thomas Smith.....	Boatswain.....	April 6, 1815	10 00	April 2, 1816.
Aaron Smith.....	Ordinary seaman.....	August 1, 1828	2 50	April 23, 1800.
Joseph Smith.....	Lieutenant.....	Sept'r 11, 1814	18 75	.....do.....
John Smith, 5th.....	Seaman.....	May 5, 1837	3 00	.....do.....
William Stockdale.....	Marine.....	July 26, 1816	6 00	.....do.....
William Smart.....	Ordinary seaman.....	July 1, 1829	5 00	.....do.....
John Smith.....	Seaman.....	August 31, 1834	3 00	.....do.....
James Smith.....	Ordinary seaman.....	Dec'r 2, 1837	2 50	.....do.....
James Shanklin.....	.....do.....	June 1, 1813	2 50	.....do.....
Robert Speddin.....	Lieutenant.....	Dec'r 5, 1823	25 00	.....do.....
William Smith.....	Sergeant marine corps.....	Jan'y 7, 1841	6 50	March 3, 1837.
John Strain.....	Seaman.....	Feb'y 28, 1837	4 50	April 23, 1800.
James Spiers.....	Ordinary seaman.....	May 5, 1837	3 75	.....do.....
John Smith.....	Boatswain.....	Dec'r 31, 1827	5 00	.....do.....
John Scriver.....	Seaman.....	April 10, 1811	5 00	.....do.....
John Schrouder.....	.....do.....	June 29, 1819	6 00	.....do.....
Horace B. Sawyer.....	Midshipman.....	June 3, 1813	4 75	.....do.....
Otis Sage.....	Corporal marine corps.....	Nov'r 16, 1835	4 50	.....do.....
Samuel Spooner.....	Ordinary seaman.....	Oct'r 15, 1838	1 66½	.....do.....
William Seymour.....	Seaman.....	Feb'y 17, 1836	6 00	.....do.....
Jonas A. Stone.....	.....do.....	April 4, 1829	9 00	.....do.....
Alexander Smith.....	.....do.....	July 26, 1836	3 00	.....do.....
Thomas Stallings.....	Ordinary seaman.....	Nov'r 7, 1826	2 50	.....do.....
Leonard Stevens.....	Sergeant marine corps.....	Jan'y 27, 1837	3 25	.....do.....



## 6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
R. S. Suter.....	Midshipman.....	Dec'r 16, 1814	\$9 50	April 23, 1800.
James Stockwell.....	Seaman.....	Feb'y 28, 1829	4 50	.....do.....
Charles Smith, 3d.....	.....do.....	August 19, 1841	3 00	.....do.....
Frederick Smith.....	Captain forecastle.....	June 14, 1842	7 00	.....do.....
Russell Smith.....	Carpenter's mate.....	August 2, 1842	7 12½	.....do.....
Charles Staunton.....	Boatswain's mate.....	Feb'y 19, 1838	9 50	.....do.....
Lewis Thomas.....	Marine.....	May 11, 1839	2 66½	.....do.....
John Tarlton.....	Ordinary seaman.....	May 8, 1833	4 00	.....do.....
James Turnbull.....	Ordinary seaman.....	April 6, 1815	5 00	April 2, 1816.
Owen Taylor.....	Seaman.....	Aug. 19, 1812	6 00	April 23, 1800.
B. R. Tinslar.....	Surgeon.....	Jan. 31, 1830	6 50	.....do.....
Thomas Findley.....	Seaman.....	April 6, 1815	3 00	April 2, 1816.
John Taylor.....	Quartermaster.....	May 31, 1839	8 00	April 23, 1800.
Jacob Tonkins.....	Marine.....	May 31, 1840	3 50	.....do.....
Samuel Taylor.....	Ordinary seaman.....	Nov. 30, 1839	5 00	March 3, 1837.
George Tunstall.....	Seaman.....	April 14, 1836	3 00	April 23, 1800.
Isaac Thomas.....	Marine.....	Oct. 30, 1826	6 00	.....do.....
William Thompson.....	Ordinary seaman.....	May 20, 1826	7 50	.....do.....
James Thompson.....	Seaman.....	June 30, 1836	6 00	.....do.....
Julius Terry.....	Ordinary seaman.....	Aug. 31, 1812	5 00	.....do.....
James Tull.....	Sergeant marine corps.....	June 29, 1816	5 00	.....do.....
Henry Townsend.....	Ordinary seaman.....	Dec. 18, 1814	5 00	.....do.....
David Thomas.....	Marine.....	Jan. 1, 1806	3 00	.....do.....
Philip Tulley.....	Seaman.....	Jan. 10, 1816	6 00	.....do.....
Peter Tooley.....	Marine.....	Jan. 27, 1837	3 50	.....do.....
Lewis Thomas.....	Marine.....	May 11, 1839	2 62½	.....do.....
George Turry.....	Boatswain.....	Aug. 9, 1839	3 33½	.....do.....
Benjamin Underwood.....	Ordinary seaman.....	April 24, 1815	5 00	.....do.....
George Upham.....	Marine.....	July 12, 1816	3 00	.....do.....
Gabriel Van Horn.....	Marine.....	Dec. 23, 1837	3 50	.....do.....
William Venable.....	Boatswain mate.....	May 2, 1834	4 75	.....do.....
William Whitney.....	Seaman.....	Nov. 1, 1818	8 00	.....do.....
John A. Webster.....	Sailing master.....	Sept. 13, 1814	20 00	June 30, 1834.
Peter Woodbury.....	Quartermaster.....	March 18, 1813	9 00	April 23, 1800.
Robert Woods.....	Seaman.....	Dec. 31, 1836	3 00	.....do.....
Charles W. White.....	Ordinary seaman.....	Feb. 17, 1837	5 00	.....do.....
Reuben Wright.....	Carpenter's mate.....	Aug. 30, 1814	8 00	.....do.....
Caleb J. Wiggins.....	Ordinary seaman.....	May 23, 1814	3 00	.....do.....
Henry R. Williams.....	Yeoman.....	Aug. 2, 1840	7 50	March 3, 1837.
John Williams.....	Seaman.....	July 1, 1818	6 00	April 23, 1800.
Joseph Ward.....	Seaman.....	July 1, 1818	6 00	.....do.....
William Williams.....	Marine.....	July 9, 1838	3 50	.....do.....
William S. Welsh.....	Seaman.....	May 1, 1827	6 00	.....do.....
James Wilson.....	Quartermaster.....	July 1, 1817	9 00	.....do.....
James B. Wright.....	Quartermaster.....	May 1, 1831	9 00	.....do.....
Charles Weeks.....	Seaman.....	Feb. 23, 1830	6 00	.....do.....
Thomas Williamson.....	Surgeon.....	Dec. 31, 1835	15 00	.....do.....
Francis Williams.....	Landsman.....	Jan. 15, 1838	1 00	.....do.....
John W. West.....	Lieutenant.....	Nov. 30, 1830	6 25	.....do.....
Job G. Williams.....	1st lieut. marine corps.....	June 30, 1828	7 50	.....do.....
George Wiley.....	Seaman.....	March 1, 1837	3 00	.....do.....
John Waters.....	Seaman.....	Sept. 30, 1838	3 00	.....do.....
James Woodhouse.....	Seaman.....	March 17, 1836	6 00	.....do.....
George Wilson.....	Seaman.....	March 23, 1838	6 00	.....do.....
John Williams.....	First captain fore top.....	Sept. 9, 1836	1 87½	.....do.....
Daniel Watson.....	Carpenter's mate.....	May 10, 1838	4 75	.....do.....

## 6—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension	Acts of Congress under which allowed.
Charles Wheeler .....	Seaman .....	Oct. 3, 1836	\$3 00	April 23, 1800.
Henry Ward .....	Quarter-gunner .....	May 27, 1833	9 00	.....do.....
Henry Walpole .....	Seaman .....	Oct. 2, 1820	3 00	.....do.....
Henry Williams .....	Ordinary seaman .....	March 3, 1838	5 00	.....do.....
Solomon White .....	Seaman .....	Feb. 29, 1812	4 00	.....do.....
Thomas Ward .....	Captain fore top .....	Jan. 14, 1835	7 50	.....do.....
William Ward .....	Seaman .....	Aug. 1, 1832	6 00	.....do.....
William Welsh .....	Ordinary seaman .....	Jan. 1, 1822	2 50	.....do.....
Samuel E. Watson .....	Major marine cops .....	Feb. 4, 1837	18 75	.....do.....
John Wright, 2d .....	Ordinary seaman .....	May 1, 1822	5 00	.....do.....
William A. Weaver .....	Midshipman .....	June 1, 1813	9 50	.....do.....
James Williamson .....	Armorer .....	Sept. 1, 1831	6 00	.....do.....
John Wright .....	Quarter-gunner .....	Nov. 7, 1836	5 62½	.....do.....
John Waters .....	Ordinary seaman .....	April 24, 1824	5 00	.....do.....
James Wines .....	Seaman .....	March 28, 1824	6 00	.....do.....
William Wicks .....	Ordinary seaman .....	Aug. 4, 1813	4 00	.....do.....
Elias Wiley .....	Ordinary seaman .....	Sept. 10, 1813	2 50	.....do.....
William Wright .....	Seaman .....	Aug. 31, 1832	3 00	.....do.....
Edward Watts .....	Seaman .....	Dec. 31, 1828	3 00	.....do.....
Thomas Welsh .....	Quarter-gunner .....	Feb. 26, 1820	12 00	.....do.....
Samuel Williams .....	Quartermaster .....	Sept. 1, 1827	6 00	.....do.....
William Wagner .....	Quarter-gunner .....	Dec. 3, 1819	9 00	.....do.....
Daniel Whitehorn .....	Quarter-gunner .....	June 21, 1842	7 50	.....do.....
Jack Williams .....	Seaman .....	March 22, 1828	6 00	.....do.....
John J. Young .....	Lieutenant .....	May 21, 1829	25 00	.....do.....
Richard G. York .....	Seamen .....	Jan. 13, 1839	3 00	.....do.....

The number of invalid pensioners is 503; annual sum to pay them, \$35,363 63.

No. 10.

TREASURY DEPARTMENT,  
Fourth Auditor's Office, Nov. 14, 1842.

Sir: I have the honor to transmit, herewith, a statement (in triplicate) of the receipts and expenditures on account of the navy pension fund, from the 1st of October, 1841, to the 30th of September, 1842, inclusive; together with the balance in the Treasury to the credit of the fund, and in the hand, of pension agents on the 1st of October, 1842, per the last settlement of their accounts.

I have the honor to be, sir, very respectfully, your obedient servant,  
A. O. DAYTON.

Hon. A. P. UPSHUR,  
Secretary of the Navy.

A statement showing the balances in the hands of agents, and on the books of the Treasury, to the credit of the Navy Pension Fund, on the 1st of October, 1841; also, the amount of receipts and expenditures on account of the fund, from that date to the 20th September, 1842, inclusive; and the balances due by agents, per last settlement of their accounts.

I.	Balances in the hands of the agents on the 1st of October, 1841 - - - - -	\$75,791 57
II.	Balance in the Treasury to the credit of the fund, on the 1st of October, 1841 - - - - -	\$65,152 29
III.	Amount received into the Treasury since 1st October, 1841, from whom, and on what account, viz:	
	1842.	
June	13. From Secretary of the Navy, trustee, for interest on Cincinnati corporation stock - - -	\$2,500
July	9. Secretary of the Navy, for dividend of the stock of the Union Bank of Georgetown - - -	900
	14. J. P. Henry, late navy pension agent, deceased, paid by his executor - - -	114 30
	16. J. P. Henry, late navy pension agent, deceased, paid by his executor - - -	32 57
Aug.	Appropriation by Congress, per act approved 23d August, 1842 - - - - -	84,951
		88,497 87
IV.	Expenditures on account of the fund, per settlements made between the 1st of October, 1841, and 30th September, 1842, viz:	
	1841.	
Oct.	21. Elias Kane, deceased, late navy pension agent at Washington, for payments to pensioners, and for stationery, printing, and postage - - -	\$7,750 52

1841.			
Oct.	22.	John Thomas, late navy pension agent at Baltimore, for payments to pensioners, and for stationery, printing, and postage - - -	\$9,463
Nov.	2.	President Mechanics' Bank, New York, for payments to pensioners, and for stationery, printing, and postage - - -	1,568
	24.	J. H. McJ. Madison, for pension to 5th May, 1841 - - -	104 16
Dec.	10.	Wm. C. Anderson, navy pension agent at St. Louis, for payments to pensioners - - -	150
	10.	Jacob Alrichs, navy pension agent at Wilmington, Del., for payments to pensioners - - -	120
	10.	J. B. Perrault, navy pension agent at New Orleans, for payments to pensioners - - -	969 66
	10.	President Arcade Bank, navy pension agent at Providence, R. I., for payments to pensioners - - -	1,906 99
	10.	President Savings Institution, Louisville, Ky., for payments to pensioners - - -	555
	10.	President Farmers and Mechanics' Bank, Hartford, Conn., for payments to pensioners - - -	744
1842.			
Jan.	3.	Mary Ryall, for balance of pension due her late husband - - -	3 73
	4.	Thomas T. Hooper, for pension due him as the child of Greenfield Hooper - - -	1,286 60
	13.	George Loyall, navy pension agent, Norfolk, for payments to pensioners - - -	4,405 37
	15.	President Merchants and Manufacturers' Bank, Pittsburg, for payments to pensioners - - -	204
	15.	Timothy Upham, navy pension agent, Portsmouth, N. H., for payments to pensioners - - -	951
	17.	Thomas Hayes, navy pension agent, Philadelphia, for payments to pensioners - - -	7,150
	22.	John P. Henry, navy pension agent, Savannah, for payments to pensioners - - -	150
	22.	President Farmers and Mechanics' Bank, Hartford, Conn., for payments to pensioners - - -	300
	25.	John Sivers, for pension due him as one of the children of John Sivers, deceased - - -	900 36
	25.	Nancy Sivers, for pension due her as one of the children of John Sivers, deceased - - -	668 74
Feb.	8.	J. V. Browne, navy pension agent at Boston, for payments to pensioners - - -	271 87
	8.	George Loyall, navy pension agent at Norfolk, for payments to pensioners - - -	535 50
	8.	Thomas Hayes, navy pension agent at Philadelphia, for payments to pensioners - - -	925 33
	10.	President Maine Bank, Portland, for payments to pensioners - - -	3,232 36
	10.	President Trenton Bank, N. J., for payments to pensioners - - -	2,332 40
	11.	R. C. Wetmore, navy pension agent at New York, for payments to pensioners - - -	1,388 32

1842.

<b>Feb.</b>	11. R. C. Wetmore, navy pension agent at New York, for payments to pensioners	\$10,549 02
	12. S. McClellan, navy pension agent at Baltimore, for payments to pensioners	2,636 38
	12. L. Jarvis, late navy pension agent at Boston, for payments to pensioners	5,344 92
<b>April</b>	11. Eliza Stevens, widow, for pension due her late husband	47 33
	13. J. B. Perrault, late navy pension agent at New Orleans, for payments to pensioners	1,152
	16. Margaret Denton, for pension due her as a child of R. M. Desha, deceased	109 50
	16. President Savings Institution, Louisville, Ky., for payments to pensioners	639
	16. B. D. Heriot, navy pension agent at Charleston, S. C., for payments to pensioners	1,878
<b>May</b>	3. Catharine Phillips, for pension as the widow of Michael Morgan	192 94
<b>June</b>	10. Jacob Alrichs, navy pension agent at Wilmington, Del., for payments to pensioners	168
	10. J. P. Henry, late navy pension agent, Savannah, for payments to pensioners	150
	13. President Exchange Bank, Pittsburg, for payments to pensioners	72
	13. W. C. Anderson, navy pension agent, St. Louis, for payments to pensioners	150
	17. President Farmers and Mechanics' Bank, Hartford, Conn., for payments to pensioners	1,444
	17. President Arcade Bank, Providence, R. I., for payments to pensioners	1,620
	17. L. Jarvis, late navy pension agent, Boston, for payments to pensioners	1,172 53
	22. Thomas Hayes, navy pension agent, Philadelphia, for payments to pensioners	4,285 10
	24. J. V. Browne, navy pension agent, Boston, for payments to pensioners	6,676 75
	24. George Loyall, navy pension agent, Norfolk, for payments to pensioners	4,439 14
	25. R. C. Wetmore, navy pension agent, New York, for payments to pensioners	11,361 89
	27. Wm. B. Scott, navy pension agent, Washington, for payments to pensioners	17,668 51
<b>July</b>	6. Timothy Upham, navy pension agent, Portsmouth, N. H., for payments to pensioners	871 50
	6. Thomas Hayes, navy pension agent, Philadelphia, for payments to pensioners	443 08
	8. President Maine Bank, Portland, for payments to pensioners	1,143
	8. President of the Exchange Bank, Pittsburg, for payments to pensioners	36
	11. R. C. Wetmore, navy pension agent, New York, for payments to pensioners	896 05

1842.			
July	15.	George Loyall, navy pension agent, Norfolk, for payments to pensioners	\$567 18
	30.	J. B. Perrault, navy pension agent, New Orleans, for payments to pensioners	75
August	2.	J. V. Browne, navy pension agent, Boston, for payments to pensioners	199 29
Sept.	5.	President Exchange Bank, Pittsburg, for payments to pensioners	108
	14.	Henry Harvey, deceased, for pension due him, paid to his executor	349 60
	22.	Samuel McClellan, navy pension agent, Baltimore, paid pensioners	4,824 97
Total			<u>129,398 64</u>

V. Balances due by pension agents, per last settlement of their accounts, and including advances to 1st October, 1842.

1842.			
Oct.	25.	From W. C. Anderson, N. P. agent, St. Louis	\$53
Aug.	26.	J. V. Browne, do Boston	9,917 69
Oct.	7.	Thomas Hayes, do Philadelphia	1,272 56
Aug.	26.	B. D. Heriot, do Charleston	2,472
	26.	George Loyall, do Norfolk	834 57
	9.	Wm. McKay, do Savannah	150
Sept.	17.	Samuel McClellan, do Baltimore	5,682 82
	26.	Thomas G. Morgan, do New Orleans	2,310 75
July	20.	Wm. B. Scott, do Washington	12,894 28
Sept.	16.	R. C. Wetmore, do New York	15,402 25
Aug.	26.	Timothy Upham, do Portsmouth,	1,702 50
	26.	Pres. Farm. and Mechs. Bank, Hartford, Ct.	1,191
Oct.	25.	Louisville Savings Institution, Ken.	30
	4.	Bank of Maine, Portland, Me.	1,357
Aug.	26.	Arcade Bank, Providence	1,530
Sept.	5.	Exchange Bank, Pittsburg, Pa	288
Aug.	26.	Trenton Banking Company, N. J.	460
	26.	L. Jarvis, late N. P. agent, Boston	543 93
	26.	Michael W. Ash, do Philadelphia	915 95
	26.	John N. Todd, do Boston	91 92
	26.	Elias Kane, deceased, do Washington	1,119 50
Total			<u>60,219 72</u>

*Recapitulation.*

I. Amount of balances in the hands of agents, 1st October, 1841	-	\$75,791 57	
II. Balance in the Treasury, to the credit of the fund, on the 1st October, 1841	-	65,152 59	
III. Amount received at the Treasury since 1st October, 1841	-	88,497 87	
		<hr/>	\$229,441 73
IV. Expenditures on account of the fund, as per settlements from 1st of October, 1841, to 30th September, 1842, inclusive	-	129,398 64	
V. Balances due by pension agents, per last settlements of their accounts, and including advances to the 1st of October, 1842	-	60,219 72	
		<hr/>	189,618 36
Balance in the Treasury, 1st October, 1842	-	-	<hr/> <hr/> 39,823 37

TREASURY DEPARTMENT, FOURTH AUDITOR'S OFFICE,  
November 14, 1842.

A. O. DAYTON.

No. 11.

## R E P O R T

*Of Researches on the Character and Tests of Sheathing Copper.*

BY WALTER R. JOHNSON.

## PART I.

PHILADELPHIA, *November 23, 1842.*

SIR: In compliance with a request from your department through Commodore Lewis Warrington, the president of the late Board of Navy Commissioners, under the date of the 20th of January last, I have given attention to the subject of the proofs to which copper ought to be subjected, in order to ascertain its purity.

In the communication referred to, it was remarked that the examinations heretofore made at the different yards had not led to the same results in regard to the acceptance or the non-acceptance of copper of the same qualities; it was therefore my first object to ascertain what had in fact been the methods of proving at the different yards.

With this view I asked for the information which was subsequently furnished under direction of the board, from the navy-yards at Norfolk, New York, and Boston. I obtained, also, by personal inquiry, the same kind of information from the navy-yard at Philadelphia, and have since ascertained by similar means the method of testing formerly practised at the Washington navy-yard. The result of this inquiry explains the diversity of practice which has led to the rejection, at some of the navy-yards, of copper of the same kinds which have been accepted at others. It proves that the standard is not the same at all the naval stations, and consequently that the judgment of the several master-mechanics has been formed upon different species of evidence.

Thus, the naval constructor at the Philadelphia navy-yard informed me that the test there applied was mainly the eye of the inspector (the master blacksmith), who judged by the color, and the general uniformity of surface, whether the copper was fit for the purpose or not; and that, occasionally, when the surface was covered with oxide, a small space was scraped clean with a view to discover, by the aid of a magnifier, any porousness or irregularities of grain which might chance to exist.

The answer furnished by Captain Shubrick, of the Norfolk navy yard, refers to no other test than that contained in an order from the Board of Navy Commissioners of March 28, 1826, and which is in these words:

“In inspecting copper with reference to its purity, the following process is to be pursued: Melt small portions and dip into them a polished iron rod; when the rod is drawn out, a portion of the copper will adhere to it, then dip the rod in cold water, and if the copper immediately falls off, it is pure.”

The letter of Captain Downs, commandant of the navy-yard at Charlestown, states the following as the practice on that station:



"The copper has been received when the weight and sizes have corresponded with the contract, judging of the quality only by its appearance."

The letter from Captain Perry, commanding at the Brooklyn navy-yard, was accompanied by two papers, one a letter from Mr. S. Hart, the naval constructor, and the other signed N. H., presumed to be from Mr. Hendricks, the contractor referred to by Mr. Hart.

The following is Mr. Hart's letter :

"NAVY-YARD, NEW YORK,  
February 3, 1842.

"SIR: In accordance with your letter of January 28th, I would respectfully state that the mode of inspecting sheathing copper has been by examining its surface, to see if any scratches, indentations, scales, or blisters, existed; no test is known at the yard to establish its purity; and I do not know of a chemist being employed but once; he pronounced the material pure or nearly so. None has been rejected for impurity, and all that has been rejected, has been on account of imperfections in the surface, so far as my knowledge extends.

"Complaints have been made by the contractors that 'acids' and a microscope have been used in the inspection. There is no truth in this statement, and the only case when acid was used was on a sheet or two of Mr. Hendrick's, *after* it was rejected, and by his consent, for the purpose of proving to him the reason of its being rejected, and a magnifying glass (about 101.1) has been frequently used after rejection, to show the improper surface.

"The copy of a paper from the storekeeper, of November, 1840, will show the method pursued in the examination, and I trust will be satisfactory.

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

"S. HART.

"Commodore M. C. PERRY, *Commanding.*"

The other paper, to which I have referred, is as follows :

"Having been informed the last lot of sheathing copper (1,040 sheets) sent to the yard has not passed inspection from an opinion expressed that the copper contained iron and tin.

"Now, sir, *as I know* that the copper is as free from those ingredients as any other than pure copper, as the purest copper may be; I beg leave to demand a reinspection of the lot sent.

"If the reinspection corroborates the opinion, I ask for that opinion in writing, that I may make no mistake in representing the facts at Washington, together with a sworn analysis of the *copper in question.*"

"N. H."

The paper from the naval storekeeper, mentioned by Mr. Hart, did not accompany the letter, from which I am led to presume, that the substance of it is embraced in his communication to Commodore Perry.

From all the preceding statements, it must be evident that different results may well have been arrived at in different yards without implying any design to defraud on the part of contractors, or any undue prejudice on that of inspectors, whom we must presume to feel bound to vigilance in guarding the interests of the country in so important an item as the expensive article of sheathing copper.

You have desired to have furnished a proof which may be easily applied and be made efficacious in the hands of "skilful, but not scientific" master workmen.

The sheathing of ships being mainly affected by corrosion from chemical agency, the inquiry seems to resolve itself into finding a mechanical means of detecting chemical properties.

This problem, when applied to any substance with a view to ascertain its purity, must be acknowledged to present numerous difficulties, and in the case of determining the value of sheathing copper, the difficulty is increased by the fact, now pretty well ascertained, that pure copper is less durable in salt water than many of its alloys.

Among the properties to which we might appeal for some information in regard to the purity of copper, may be mentioned—

1. Its density or specific gravity.
2. Its tenacity or toughness.
3. Its hardness.
4. Its color.
5. Its texture in freshly fractured surface.
6. The aspect of its polished surface.
7. Its behavior under the graver.
8. The surface left by the rolls, or developed by dissolving away adhering scales.
9. Its ductility as wire and *laminability* as sheet.

In regard to the *density* of copper, I may state that of seven trials which I made some years ago on boiler-plate copper, manufactured by McKim, of Baltimore, the highest specific gravity was 8.9866, the lowest 8.7388, and the mean 8.8642.

By thirteen trials recently made on sheathing copper, I have found the highest specific gravity to be 9.050, the lowest 8.484, and the mean 8.805.

M. Dumas gives the specific gravity of cast copper 8.788, and that of rolled copper 8.878.

Berzilius gives for common-cast copper 8.830; for small cast cylinders, two lines thick, 8.946; and for rolled cylinders or bolts 8.958.

In general high specific gravity may be regarded as presumptive evidence of the purity of copper; but this must of course depend on the nature of the impurity, when any is present. If it be red oxide of copper, for example, this substance having a specific gravity of only 6.093, can only diminish the specific gravity of *adulterated* below that of *pure* copper.

The density of *zinc* is 7.01; and some of its alloys with copper have higher specific gravities than the mean of their constituents. But this will not necessarily make the density of brass greater than that of pure copper. In fact the density of the alloy varies from 8.20 to 8.89, according to the greater or less proportion of zinc employed in its composition.

*Tin* has a specific gravity of 7.291, and can not therefore increase the specific gravity of copper when mixed with it in whatever proportion. According to Klaproth, the metal of which gongs are fabricated, composed of 78 copper to 22 tin, has a specific gravity of 8.815.

*Iron* has a specific gravity of 7.77, and its power of forming alloys with copper has been proved by Mushet, Krilowski, and others; but the compounds are often united with one or the other metal in excess. The density of these mixtures of alloy and simple metal will not *exceed* that of copper.

*Antimony*, another metal of not unfrequent occurrence in combination

with copper, has a still lower specific gravity than either of the preceding, being only 6.702, and of course inadequate, in any proportion, to form an alloy denser than pure copper.

*Lead*, the only other metal which claims much attention as an impurity in copper, has a specific gravity of 11.352, or 27.5 per cent. greater than that of copper. This is the only one of the ordinary impurities of commercial copper which is liable to impart a density above that of copper chemically pure.

*Silver*, with a specific gravity of 10.51, will give alloys having a higher degree of density than pure copper; but there is little probability that enough of this metal will be found in sheathing or other commercial copper to produce an appreciable effect on the specific gravity of the latter, and none whatever that it would be intentionally added for that purpose.

Beside the above metals, trivial quantities of other foreign materials have sometimes been detected in copper. Thus: M. Berthier analyzed a specimen of copper from Switzerland, very soft and malleable, in which he detected impurities to the amount of  $\frac{1}{100}$  of one per cent.; of which .38 were potassium, .33 calcium, and .17 iron. All these ingredients must have tended to reduce the density of the alloy below that of pure copper. Since, therefore, the specific gravity of copper is liable to be augmented by only one of its ordinary impurities (lead), and that one usually existing in very minute quantities, we can not infer that a high density, when found, has been imparted by the foreign ingredients, but, as above stated, are led to consider it rather the index of purity. Still, as the state of aggregation of copper is different under different circumstances, even when no other metal is present, we can not admit that the determination of this property alone, even were the process of taking specific gravity less delicate and tedious than it is, would afford the desired test. When the specific gravity approaches 9.00, we may infer that no great amount of impurity is present. In one of my experiments, a sample of cold-rolled sheathing copper had its specific gravity reduced from 8.967 to 8.741 by the simple process of annealing at a red heat.

2. The next physical property to which we may appeal for information respecting the purity of copper, is its tenacity, or the power to resist fracture by tensile force. In this property it exceeds all other metals, except iron and steel. All the impurities ordinarily found in copper, with the exception, perhaps, of iron, tend to diminish its tenacity, toughness, and pliability.

The absolute tenacity of rolled copper, at ordinary temperatures, is from 31,468 to 33,780 pounds per square inch, as shown in the report on the strength of materials for steam-boilers, submitted to the Treasury Department in 1837. In the course of the same research, it was proved that above the freezing point, and thence up to a red heat in daylight, copper diminished in tenacity by every increase of temperature; but the law of the diminutions has this peculiarity—that the third powers of the temperatures above  $32^{\circ}$  are proportionate to the second powers of the losses of tenacity corresponding; the tenacity at  $32^{\circ}$  being assumed as unity.

The method of testing copper and other metals by a machine adapted to show the absolute strength, as generally applied in researches on tenacity, requires perhaps too many precautions to admit of its being recommended for universal adoption by practical mechanics. An apparatus more simple

than that commonly employed might doubtless be found useful for occasionally verifying the results obtained by other methods.

In seeking a substitute for this method, I have had recourse to one often applied to test the goodness of other metals, which consists in determining the extent or the number of times they can be bent or folded together, without causing rupture. A simple method of applying this test will be described in a subsequent part of this report.

In comparing together several samples of copper, of different shades of color, much diversity in their tenacities will be found to prevail. Some modification of toughness also results from the temperature at which it may have been rolled, and from the consequent hardness or softness which it may possess. Hence, in testing the tenacity of copper, with a view to discover its degree of purity, it is well to bring it to a fixed condition, by first subjecting the sample to a full red heat, and, if possible, without the contact of air. This may be effected in a common smith's fire, burying the pieces in a thin bed of ashes, in the bottom of the hearth, in which they can receive sufficient heat, and from which they may be drawn immediately into a mass of cold ashes, sand, loam, or charcoal dust.

3. The *hardness* of chemically pure copper deposited by the process of galvanotype from a solution of the sulphate, was found, by my experiments superior to that of any ordinary sheathing copper, as it scratched them all, and could be scratched by none. It is much greater than that of sheet zinc, but somewhat inferior to that of sheet brass, which readily scratches and abrades it; iron, of course, does the same with greater ease, and it is readily cut with a knife. The hardness of copper rolled at ordinary temperatures is greater than that which has undergone the same operation only at a red heat. Hence, this property is of little or no avail in deciding the question of purity between specimens as nearly alike as the best and the worst of sheathing copper.

4. The *color* of copper free from all impurities is a light, yellowish red. This is most favorably exhibited either on a freshly formed specimen of galvanotype, or on a recent fracture of pure copper, in sheet, bolt, or bar. When large bolts are cut with powerful shears, the pure, uniform, silky lustre displayed by the parts which separate without touching the steel, is indicative of the purity of the metal. If a deeper red display itself, it indicates the presence of protoxide, interspersed among the metallic copper. A slight admixture of zinc is also found to be accompanied by a dirty red color. When sheets of copper are broken, either by direct longitudinal strain, or by repeated bending in the manner above referred to, they will frequently exhibit on their edges, when carefully inspected, a nearly brick red appearance, and the fractured edge will be seen to be traversed by irregular waving lines, having the true color and metallic lustre of copper, parallel to the lines of deeper red just referred to. In other cases nearly the whole thickness of the sheet will be found brick red. I have uniformly found copper of this color very brittle, whether in bolts or sheets. The *cut* edges or ends can not exhibit the texture and variety of colors above mentioned, for the obvious reason that the displacement of parts by the shears or other cutting tool, crushes the whole mass into so constrained a position as to destroy the natural appearance.

The color of the exterior surface of rolled copper is not much to be relied on for indicating the composition of the metal. According to the nature of the corroding material will be the color of the stains or coats of compound with which it will be marked. What is popularly known as "copper color" is a much deeper tint of red than that of the pure metal. Indeed, it verges

on brown, and when produced at elevated temperatures, the oxide becomes rapidly black by conversion to a higher state of oxidation. If the metal in minute division be exposed to a red heat with access of air for a considerable time, it entirely passes into the state of black oxide.

In heating a smooth plate of copper gradually up to redness it will be found to pass successively through nearly all the tints of the solar spectrum.

Subjected to the action of air, moisture, or carbonic acid, the surface of copper may become covered with three different colors under as many different circumstances, all varying from any of the above-mentioned. It may be *brown* when no water accompanies the acid, fine *blue* when the hydrated sesquibasic carbonate is formed, or apple green when precipitated from an acid solution by an alkaline carbonate.

If an alkaline phosphate, as that of soda, for example, precipitate copper from solution, it will give an artificial blue phosphate. Common vinegar, acetic acid, or pyroligneous acid, may form on the surface of copper a dinacetate of copper, or verdigris of a pale *grass green*. This is sometimes found on old ship's copper derived from the acid of the timber, together with red oxide, green chloride, and green carbonate. Verdigris is more frequently seen on bolts than on sheathing, especially at the joints between the planks and the timbers to which they are bolted. When a soluble salt of copper is acted on by ammonia, a superb blue color is obtained due to the ammoniazet of copper. If an excess of water be added, the latter deprives the oxide of copper of part of its ammonia, and lets fall an insoluble greenish hydrated oxide.

Muriatic acid may impart to the surface of copper either a deep green or a yellowish liver-brown color according to the proportion of chlorine in the compound. If copper be dissolved in any acid, and sulphuretted hydrogen or the hydro sulphate of ammonia be mixed with the solution, the color will be either black or dark brown. The presence of nitric or sulphuric acid on copper, would soon cover its surface with a blue soluble salt.

In addition to all these various colors derived from the combinations of pure copper with non-metallic bodies, there may be modifications of tint received from the oxides and salts of other metals.

Hence without entering on the wide range of compounds called alloys, with tints shading off gradually from the true color of this metal to that of the other ingredient, we have as just described a very great diversity of shades liable to affect the exterior appearance of sheet copper.

From all this, it may be inferred that the mere exterior color of copper as found in commerce, is not to be taken as a sure standard to regulate our estimate of its purity. Some of the colors and stains to which it is liable, are but imperfectly removed even by sulphuric and hydrochloric acids. Strong nitric and *boiling* sulphuric acids are the most effective means of removing all its ordinary discolorations, and the former is on several accounts to be preferred. If no organic matter, such as oil, pitch, varnish, or similar substances be present, it will only be necessary to plunge the sample for a few seconds into concentrated nitric acid at ordinary temperature, and when the metal appears all over of uniform color, to withdraw and dip it at once into a large quantity of water, washing it effectually, and drying it at once a little above a boiling temperature. This process not only displays the color of the copper, but also reveals such imperfections as may chance to exist in the texture of the surface, and exhibits any elevations and depressions which may have been caused by scales of oxide impressed into the red hot copper during the process of rolling.

5. The *texture* of copper is best revealed by fracture. This may be effected either by a direct longitudinal strain as already described, or by alternate flexures. The former gives perhaps the more certain indications, because it exhibits a nearly uniform aspect throughout the whole breadth and thickness of the section of fracture; but the breaking by flexures, gives also a very marked distinction in regard to the texture of different samples of copper. The structure of metallic copper seen in such fractures is granular before rolling, and usually more or less fibrous afterward. The granules have a spherical or octohedral figure. These grains generally present themselves in good rolled copper, interspersed with small portions of more minutely divided particles of a deeper red color. Not only do *fractures* reveal this last-mentioned circumstance, but solution is likewise capable of developing it in a still more decided manner.

Through the kindness of Mr. Lenthal, naval constructor at Philadelphia, I obtained a piece of sheet copper, which had been originally of the weight of 16 $\frac{2}{3}$  ounces to the square foot, and which had been in the year 1806 put between the keel and the false keel of the British sloop of war "Cyane," at the time she was built, and removed in 1815, on repairing that vessel after her capture by the Americans. This sheet of copper I found covered, nearly all over its surface, with minute spherical particles of pure copper, intermixed with a little chloride of copper, the whole so loosely cohering to the sheet as to fall off readily on slightly brushing or tapping it. Not less than three fourths of an ounce of such particles were obtained from the two faces of the sheet which, by the joint effects of chemical solution and mechanical disintegration, had become very uniformly diminished in thickness throughout its whole extent. In this case, the salt water reached the copper by penetrating the joint between it and the timber; and was thus enabled to act chemically upon it, and dissolve the more soluble parts, probably the dinoxide and adhering portions of copper, leaving the undissolved particles simply sticking to the surface.

The *texture* is, therefore, observed, when the surface has been acted on by any solvent of copper and of its oxides. A pitted and flaky appearance may by this means be rendered evident, which would escape notice in the fracture. Such irregularities not only betray imperfections in the manufacture, but expose a greater space on which the solvent action of sea water can be exerted, and therefore facilitate destruction. They also allow a lodgment for mud, marine plants, and insects, constituting the foulness of a ship's bottom. The variations of texture, indicating also variable composition in the several parts of the same sheet, are frequently seen in samples of worn-out sheathing, in which extensive slits and numerous round holes are caused by the unequal corrosion. An exterior indication of good texture in copper adopted by the refiners, may also guide the judgment in examining sheathing copper. In toughening the melted mass, by cementation in contact with charcoal, or other similar material, they consider the process complete, when, on taking out and cooling a proof-piece, the surface presents to the eye, or under a magnifier, a striated appearance, nearly resembling that of the skin at the tips or on the inner sides of the fingers. In some very pure and tough specimens of sheathing copper manufactured in Baltimore, I have remarked the prevalence of a similar appearance.

6. The *aspect of polished surfaces* is a test of the uniformity in structure of copper much employed by the manufacturers of engravers' plates. In applying this proof, the surface of the rolled plate is first scraped with a sharp

tool, which removes all oxide, scale, or other blemishes of the *milled* surface. It is next planished by hammering, to give a plane surface, and more density to the body. It is next rubbed with a piece of pumice stone, to remove whatever irregularities may have been caused by the hammer, and to display a fresh surface of copper, free from oxide. Solid pieces of charcoal, from some compact wood like that of the willow tree, are next employed, to smooth down the asperities left by the previous treatment; then, with a buff of felt, dusted with finely powdered charcoal, and moistened with oil, the rubbing is continued until the surface is brought to the desired degree of polish. It is finally cleaned off with dry polishing powder of rotten stone, or other suitable material, until the whole exhibits a uniform, dark, mirror-like lustre. If, instead of this uniformity, there be found a sort of net-work of a light gray color, traversing the plate, the copper is rejected. These meshes, or little veins, are liable, by use, to become cavities of various figures. Plates containing them are especially avoided, whenever the object is *etching* with nitric acid, which penetrates wherever they exist with more readiness than in the other parts of the plate. These grayish lines or spaces are sometimes so intimately blended through the whole metallic mass, as to give a nearly uniform gray tint to the smooth surface, and to prevent the bringing out of a fine polish in any part. Plate having this character is also not unfrequently pitted with deeper cavities, which can scarcely be concealed by the process of polishing.

The practice of etching is instructive, not only in regard to the texture of copper thereby revealed, but likewise to the difference of destructibility between one sample of copper and another.

A very intelligent and skilful engraver of Philadelphia\* has shown me many of the impressions taken from his etchings, together with the time employed to "bite in" the work of each marked on the sheet. The depth of tone in the print is a good index by which to judge of the susceptibility of corrosion in the plates. A sensibly deeper impression was, in some instances, obtained in 45 minutes than could be procured in other plates in 65, 70, and even 85 minutes, though, in the latter cases, an acid was employed 20 per cent. stronger than in the former. Hence, it appears that one plate may be more than 100 per cent. more difficult of solution in nitric acid than another. The same artist also exhibited to me several plates which had been rejected by him on account of the imperfection of their surface; all betraying the reticulated structure after receiving an adequate polish.

Another eminent engraver (Mr. Charles Toppan), whose productions have gained a high celebrity, has stated to me that he is accustomed to inspect copper plates by observing whether the polished (not burnished) surface presents a clear uniform aspect without pin-holes, which are exceedingly detrimental. Burnishing is sometimes resorted to by fraudulent manufacturers of engravers' *plate* to hide this species of imperfection. He had, early in life, been grossly deceived by a large piece of burnished copper, sold to him in England as good engravers' plate, but which, when used, was found to be full of holes, and that, instead of giving a clear impression of the work placed upon it, it produced a print almost entirely black. To prove the absence of this species of imperfection, this artist makes, on any convenient part of the plate, a fine but long continuous cut

\* Mr. Joseph Yeager.

with the engraving tool, and observes whether the filament of copper removed be coherent, or whether it can be stretched like a wire. If it parts spontaneously before the graver, or if it have no decided tenacity, the plate is inferred to be either brittle throughout, or marked with "pin-holes," breaking the continuity of surface. Mr. Toppan finds the French copper the best for his purposes. Much of the English is wholly unfit for the engraver's use. When English manufacturers of engravers' plates desire to obtain a superior article, they resort to Birmingham and procure old plates made more than 50 years ago, at a time when the copper manufactured in England was far better than at present. Of the copper manufactured in this country, Mr. T. finds that from Baltimore decidedly the best for his purpose.

It may be remarked that the chemical action and the abrading power of sea-water are very analogous in character to the etching by acid and the rubbing off of the copper-plate while taking the impressions of engravings; and hence could this method of testing sheathing copper be easily or expeditiously applied, it might be one of the best indications of the adaptedness of that article for its destined purpose. As a general test it would be too tedious and expensive for application. As a subsidiary to other means of determining the quality of sheathing, it may be occasionally applied by polishing a small spot a few inches in diameter, on which, after obtaining a good surface, the graver may be tried, and the length of filament, which can be cut continuously, may be observed. Nitric acid may be also applied in case the polishing fails to bring out the deep lustre already alluded to, and will render still more sensible the mottled or gray appearance and reticulated structure at points where the filaments are apt to part.

8. The test by a *polished iron rod*, directed by the commissioners in 1826, appears to have been adopted under the belief that pure copper can form no alloy with, and therefore can not adhere to, pure iron. The opinion that such is the fact was formerly put forth with much confidence. It is advanced, without qualification, in Dr. Lardner's book on manufactures in metals.

In a letter from Dr. Thomas Harris to the president of the Navy Board, dated Philadelphia, March 25, 1826, on which the direction for inspecting copper is believed to have been predicated, is contained the following remark: "In the reduction of copper ores of Neusol, in Hungary, lead is added in the refining part process. A very simple method of determining the purity of this metal is employed at this great work. To ascertain whether or not the metal be sufficiently pure, a *polished iron rod* is dipped into it when melted. When the rod is drawn out, a portion of the copper is found adhering to it, but which, if pure, immediately falls off upon being immersed in cold water."

In Germany, also, as well as at Seville, in Spain, to determine when the proper degree of toughening, which is the last stage in the purification of copper, has been attained, a similar method of collecting a little of the metal on the rounded end of an iron rod or bolt is employed by the workmen. This rod, previously heated, having been dipped two or three inches into the melted mass, so as to immerse the hemispherical end, is withdrawn and immersed in cold water. A few blows of a hammer then detach the thin cup-shaped piece of copper which adhered to the iron. It is then broken and inspected. If it be brownish red on the outside, and copper-red within, having a reticulated structure, and a tenacity so defective that it will



not bear bending, the refining is finished. These proofs are called "*mon-tres*." The first ones drawn out will usually have numerous small holes, indicating a want of homogeneity in the metal, and consequently an incompleteness of the process. As the refining approaches its termination, the color of the specimens assumes a deeper tint of red on the outside, and a more uniform copper color, with an absence of yellow spots, on the inside, which has been in contact with the iron. A dark crimson indicates the highest degree of refining.

If left to cool in the open air, the test specimens would become nearly or quite black. This, and not the dropping off of the case, is the reason why they are dipped into the water, by which means they are cooled so suddenly as to preserve the surface in the color of deep red, and prevent it from passing into that of black oxide.

The iron rod appears to be no otherwise important in this mode of testing the degree of purification which the copper has undergone, than as a convenient collector of the melted metal, rapidly congealing it, in consequence of the high specific heat and conducting power of the rod, together with the moderate degree in which the two metals alloy each other, affording a greater facility of detaching the cup.

That this is the true use of the iron, and not to serve primarily as a test of the purity of copper, is rendered highly probable, from the proofs which have negatived the supposition that pure copper can not be alloyed with iron.

In examining the practicability of alloying iron with copper, Mr. David Mushet, so extensively known for his experimental and practical researches on iron and steel, has, in the 49th volume of the *Philosophical Magazine*, referred to an assertion in Lardner's treatise on metals, above mentioned (volume 3, page 174), in which it is asserted that, "As to alloying copper with iron, the notion not only appears absurd, but unsupported by evidence." This dictum Mr. Mushet proceeded to confute by a variety of experiments, from which he deduces the conclusion that pure malleable "iron may be united with copper in any proportion until it equals or exceeds the weight of the copper," and that with 50 per cent. of iron, the alloy possesses great strength.

He finds that cast iron and steel are not so easily, if at all, alloyed with copper.

To the same effect we find, in the 16th volume of the *Annales des Mines*, an account of various experiments by Mr. Krilowski on the compounds of iron and copper, obtained from the mixed sulphurets of the two metals employed at the copper smelting works on the western slope of the Oural mountains; where are annually produced not less than 400 tons of coppery iron, which has heretofore been an incidental product of the copper works, thrown away on account of its supposed unfitness for any useful purpose. It occurs, of course, not in the malleable state, but in that of foundry or pig metal. In this state it appears that a large portion of the copper will separate mechanically from the iron. By melting the mass and keeping it for half an hour in a state of repose, and then drawing out at separate tap-holes, the one above the other, the iron and the copper, the latter was found to contain but twenty per cent. of iron and the former from one half to two per cent. of copper. The iron had strong distinctive characters. It was very fusible, ran with ease, and filled with accuracy, the smallest cavities of the moulds. It received a fine-polish; could be tempered like steel; when cooled rapidly

had a bright lamellar fracture, and was very hard; while, if slowly cooled, its structure became fine, granular, mat, soft enough to be wrought in the lathe, and even to a certain degree malleable. It may be inferred that, beyond certain narrow limits, mechanical mixtures are the chief results of attempts to combine cast iron and copper; an inference entirely consistent with the previous experience of Mr. Mushet. Polished rods of gray cast iron may, therefore, probably be found most suitable for taking up the test cups or "*montres*" in the refiner's operations.

In order to test, however, by experiment how far wrought iron could be relied on, for the purpose indicated in the direction formerly issued by the board, I melted in a crucible a portion of a bolt of navy copper which had been remarked for its brittleness, and its deep, almost brick red color in the fracture, and which was afterward proved by analysis to contain 2.275 per cent. of impurities, tin, lead, and zinc, with a trace of iron; and having provided four polished iron rods, three eighths of an inch in diameter, proceeded to test the copper by dipping them successively into it, and immediately plunging them into cold water.

The rod first dipped was immersed but little, if at all, above the hemispherical part, and was instantly withdrawn, bringing out but a small quantity of copper rather irregularly disposed over the surface. When plunged in water this soon came off, leaving but a faint blackish stain upon the iron.

The second rod being held a little longer in the crucible, gathered a thimble of copper, covering the end of the rod, and which did not fall off when dipped in cold water, but left a slight coppery stain when forcibly removed.

The third rod, in a still longer time, accumulated a thicker thimble, which, after immersion in water, continued to adhere so firmly as to require considerable force to detach it, and left behind a stain of copper on all that part which had been covered.

The fourth and last rod, being held for four or five seconds in the melted copper, brought out a large cone-shaped mass, which adhered very firmly to the iron, and required much hammering to detach it.

Hence it appears that this specimen of copper either did or it did not adhere to the rod after plunging in water, according to the time it was allowed to remain in the melted metal, that is, to the *temperature* acquired by the iron during its immersion in the copper.

2. Having cleaned and repolished the bars of iron, I melted a quantity of copper which had been reduced from the sulphate by the process of galvanotype, and which was therefore chemically pure. With this, I repeated the foregoing series of trials, and obtained results which were exhibited to the board, and which coincide in all respects with those previously obtained. The rod which was kept longest immersed took up an irregular cone of copper, which, on being forcibly detached, left the surface of iron coated with a film of copper. In the others this coating was left distinctly marked; but in all the adhesion was sufficient to prevent the falling off of the copper on immersion in cold water, except when the rod had been barely touched to the melted metal and instantly plunged into water.

In this case the proofs were, externally, about as red as cochineal, and, internally, of a fine copper yellow. When broken they displayed a somewhat regular structure, being radiated outward, from the centre of the rod, and had a pure copper color, without any variation between the outer and the inner portion of the fractured edge. Though possessing a good degree

of toughness, they were manifestly inferior in this respect to pure rolled copper—submitting to but very little bending backward and forward before they gave way.

It appears from the above two sets of trials, that copper chemically pure, and that which has about the medium purity of commercial copper, behave in the same manner toward the rod of polished iron.

This is conformable with the experience of a practical refiner with whom I have conversed upon the subject in Baltimore. It also coincides with the results of trial at the Philadelphia navy-yard, where it was formerly attempted to apply this method of proof, but where it was laid aside from a conviction that it did not furnish the information desired.

Mr. Davis, master plumber at the Washington navy-yard, who is there charged with the inspection of copper, stated that he had formerly applied the polished iron rod to brass and bronze as well as to copper, and had found a difference in its action in the several cases. This is highly probable, since both zinc and tin are capable of alloying pure iron at a lower temperature than that at which copper will begin to combine with it, lower indeed than the melting point of pure copper.

The experience of Mr. Davis coincided with the result of my experiment in respect to the influence of the temperature of the rod at the time it is withdrawn from the melted copper. He found that, in order to have the copper easily detached, it was necessary to dip the rod into the fused metal while the latter was but little above the point of congelation, as indicated by the cloudy film which at that time plays changeably over the surface. This confirms the position that the action of the rod depends on other causes than the purity of the copper.

Having now presented some general views of the several characteristics of copper, by which its purity may be judged of, I will offer an account of some experimental examinations of sheathing copper.

The only way in which the correctness of any of those methods can be proved, is by chemical analysis. The resources of chemistry are now so abundant and varied that few simple bodies exist which there are not appropriate methods of separating from all their combinations. Alloys of the ordinary metals are in general not very difficult to be assayed, unless a great number of different metals enter into the same compound. Though the total amount of impurity in commercial copper is not very great, the number of ingredients is considerable. Tin, lead, zinc, iron, antimony, arsenic, and the protoxide of copper, together with pure copper, are the chief ingredients which are found in the article as it comes to us in commerce.

In the maritime relation of the subject, whether commercial or naval, the great question which it is important to solve is, how these impurities, either severally or together, affect the durability of copper when exposed to the action of salt water.

Another question of great interest connects itself with this inquiry, viz : What circumstances, other than the *purity* of sheathing copper, is it necessary to take into account, in determining its durability under the action to which it is subjected? This inquiry involves the electrical state of the copper, both by itself and when variously alloyed, and also the influence of other metallic masses about a vessel modifying the electrical state of her sheathing. This, again, includes the question of *protection* from corrosion by the reaction of materials more corrodible than the sheathing, and likewise

that of keeping the protected copper free from over-protection, and from the consequent foulness arising from the adherence of marine plants and animals.

To answer these various inquiries has been the aim of many elaborate investigations by different authors.

To solve the problem of finding a substitute for copper combining the advantages of greater economy and superior durability, with an equable distribution of electrical influence between the sheathing and the fastenings of a vessel, has also been the object of some ingenious modern inventions.

My own experiments have of course had primary reference to the inquiry presented by the board, which, indeed, opens the whole ground of the qualities of copper for the navy; but they have of necessity embraced many incidents to the main inquiry, without a reference to which any information that might be imparted would be vague and unsatisfactory.

My experiments were performed on ten or twelve varieties of sheathing, and two or three of bolt copper, besides galvanotype copper and sheathing brass. Five samples of the sheathing copper were procured at the Philadelphia navy-yard, and all the bolts were selected from fragments at the same place. One specimen was a sheet of 22-ounce copper, manufactured in Baltimore; another was 24-ounce metal, from Liverpool. Two other pieces, one a fragment of 18-ounce copper, part of a sheet which had been recently laid on the bottom of a brig in Philadelphia, and the other a specimen procured for galvanic purposes, and remaining in my laboratory, both believed to be from Liverpool, were also among the samples examined, as was another just taken from the bottom of the above brig (called the *Elizabeth*), and which she had worn almost three years in almost constant use between Philadelphia and the West Indies. This latter was stated to have been manufactured in London. To these may be added the specimen of British navy copper from the *Cyane*, already referred to, and one of precipitated sheet copper, obtained by the galvanotype process.

The steps taken in the examination of each sample were designed to bring into view both the mechanical and the chemical properties of each sample. Though not precisely the same, for every specimen they had in general the following order.

They consisted:

- 1st. In determining the weight per square foot.
- 2d. " " the specific gravity.
- 3d. " " the toughness by bending till fracture was produced.
- 4th. In an optical inspection with the lens of the fractured edges either separately or in packs.
- 5th. In an inspection of the surface after cleaning it with acid.
- 6th. In ascertaining the loss of weight by exposure for a definite period to the action of strong hydrochloride acid.
- 7th. In exposing each specimen for a certain time to the action of solution of salt in water of different degrees of strength.
- 8th. In making a chemical analysis of a portion of each specimen.
- 9th. In determining by appropriate apparatus the electrical relations of the several samples.

*Specimen No. 1.*—This sample was procured from the navy-yard at Philadelphia, and was from the clippings of a sheet which had been used in coppering some vessel at the yard, but what one is uncertain. Its exterior color was reddish brown.

1.—A strip of this specimen 3.48 inches in length, 1.455 inch in breadth, and having, therefore, an area of 5.0634 square inches, weighed 537,4512 grains, being 15,265 grains per square foot, which is equal to 34.89 avoirdupoise ounces.

2.—The specific gravity of this sample was 8.783, which compared with 8.876 the mean average of 4 independent sets of determinations of rolled copper already cited, shows an inferiority of 1.04 per cent.

3.—When placed between two flat pieces of hard timber, each 1.5 inch wide, and 1 inch thick, the strip of copper one inch wide standing vertical, while the bars of wood were placed horizontal between the jaws of a bench vice, the copper was bent from its vertical position *forward* from the operator until it came down and touched the outer edge of the inch-thick bar; this was counted *one* bend. It was then brought up again to the perpendicular position, which was counted *one and a half*. It was then bent *backwards* or towards the operator, until it touched the outer edge of the other bar, and the count was then *two*; then carried up to the vertical position again and counted *two and a half*; down forwards again, *three*; and so on, till the metal parted, leaving the piece gripped between the bars, which was then relieved, taken out, and preserved for inspection; and the strip again put in to the depth of about one inch as before, and the operations repeated. In this way were tried strips cut in both directions; that is, corresponding with and transverse to the direction of the rolling. The cutting of strips to the breadth of exactly one inch was not deemed important. Some were a little more and some a trifle less. It is a point of no importance, nor that the pieces broken off should be exactly one inch long; but it was only considered desirable that the cutting and breaking together should separate the copper into fragments having an average area of about one square inch.

The first *length-sheet* strip was broken three times, as follows:

	Giving at the first fracture	4½	bends or contacts.
	second	3½	"
	third	3½	"
The second strip broken five times gave	first	6½	"
	second	7½	"
	third	5½	"
	fourth	6	"
	fifth	6½	"
The third strip broken three times gave	first	4	"
	second	4½	"
	third	4½	"
The fourth strip broken four times gave	first	6½	"
	second	6½	"
	third	6½	"
	fourth	6½	"

The mean of these 15 fractures of length-sheet strips, is 5.55.

The maximum being 7½ and the minimum 3½.

In practice it may be well to modify the counting so as to call the first contact with the edge of the bar *one*, the first return to perpendicular *two*, the second contact with the bar *three*, the second return to perpendicular *four*, and so on; then the odd numbers would be all contacts with the bar, and the even ones returns to the perpendicular, and every unit counted would represent a rectangular flexure. When the strip parted at an intermediate point between its contact on one side and its return to the perpendicular, or



5. When treated with strong nitric acid, to clean the surface, this copper exhibited occasional depressions, but the grain appeared fine and free from scales. The cavities were of course cleared of the oxide above referred to, and became distinctly perceptible under the magnifier.

6. A strip about two inches long, and one inch wide, weighing 12.92 grams (*Fr.*), exposed for 72 hours to the action of one fluid ounce of strong hydrochloric acid, at a temperature of  $60^{\circ}$ , *Fah.*, lost 1.52 grams, or 11.76 per cent., of its whole weight—of which, only 2.16 per cent. was dissolved in the first 24 hours. This is 5.852 grains, troy, per square inch of the surface exposed, for the whole time, or 1.95 grains per square inch per day, of 24 hours.

7. To prove the action of salt water on this copper, and, particularly, to verify the accuracy of an opinion heretofore advanced, that a *saturated* solution of salt in water, was not so efficient as a weaker one, the same piece which had been treated with hydrochloric acid, was exposed for 48 hours to the action of ten fluid ounces of a strong solution of salt in water, the density of which, at  $60^{\circ}$ , *Fah.*, was such as to mark 26 degrees on Cartier's hydrometer, while the gravity bottle was found to give a specific gravity of 1.21385. During this exposure, the strip lost .055 gram, which is at the rate of .1058 of a gram, troy, per inch of surface, in 24 hours.

8. A dilute, or *decimal liquid*, was now prepared, composed of one part, by measure, of the above saturated solution, but a fresh portion of that liquid, and nine parts pure water. Ten fluid ounces of this mixture were poured into a jar, and the same piece of copper immersed and kept in it for 168 hours, during which it lost only .015 gram, which is at the rate of .000825 grain, troy, per square inch, in 24 hours.

The successive treatment with hydrochloric acid, with a strong, and with a decimal solution of chloride of sodium, had developed a granular structure, with the striæ caused by rolling, clearly visible on one side.

9. The chemical examination of this copper was effected by dissolving two grams of it, well cleaned from oxide, in strong nitric acid, by long digesting in the cold. A greyish white residuum was left, which being separated and washed by decantation, dried and weighed, was found to be .05 gram. This was ascertained to be oxide of tin, with a little antimonious acid. The clear blue liquid was treated with ammonia, in excess, taking up, of course, the oxide at first dissolved, and leaving a trace only of the oxide of iron, undissolved, which was separated in the same manner as the oxide of tin had been before. The excess of ammonia was then expelled by heat, and the liquid treated with sulphuric acid, decomposing the nitrates of copper and lead. On carefully drying up this mixture the salt of ammonia was expelled, and the sulphates of copper and lead remained. The drying was carried so far as to render the salts anhydrous, and then, on treating the residuum with water, the sulphate of copper was re-dissolved, but that of lead remained, was allowed to subside, and was then separated as before. The sulphate of copper was again dried, and being rendered anhydrous at a temperature above  $600^{\circ}$ , was weighed while warm in a closed crucible, and found to be 4.91 grams, equivalent to 1.9495 grams of metallic copper, or 97.47 per cent. of the quantity dissolved, leaving 2.53 per cent. for impurities.

The sulphate of lead when separated, dried and ignited at a dull red heat, weighed .0225 gram, which is equivalent to 1.04 per cent. of metallic lead. The oxides of tin and antimony above obtained, were in the state of hydrate, which, being separated and ignited, yielded of the oxide of tin 0.62 per cent., and of antimony 0.4 per cent. From this it would appear that this sample

of sheathing was composed of copper,	-	-	-	-	97.47
lead,	-	-	-	-	1.04
tin,	-	-	-	-	0.62
antimony,	-	-	-	-	0.40
oxygen and loss,	-	-	-	-	0.47
					<hr/>
					100.00
					<hr/> <hr/>

10. The electrical relations of this and other samples of sheathing copper were examined by immersing to the depth of one inch the lower extremity of a strip about one inch wide, in either dilute nitric, or hydrochloric acid, or in strong salt and water, and at the same time, dipping to the same depth, in the same liquid, either a strip of platina or a plate of galvanotype-precipitated copper, and by means of a wire attached to each piece of metal, connecting them respectively with the two opposite cups of a galvanometer.

When the apparatus is so arranged that the wire leading from the platina plate in the liquid, in traversing the coil of the galvanometer, passes *over* the needle from north to south, and returns under it from south to north, the north end of the needle is deflected to the east. When the current was reversed the north was deflected to the west. By noting the degree at which it stood in either case, the intensity of galvanic action, and consequently that of chemical decomposition was ascertained. Every piece of copper alloy tried, manifested some degree of electrical excitement when compared with platina, and all deflected the needle in the same direction when similarly connected with the galvanometer. But when, in place of the platina, was put a plate of zinc, of iron, of Muntz's sheathing brass, or of galvanotype copper, the samples of sheathing copper manifested the reversal of their electric state from what it had been when used in connexion with platina. The needle was deflected in the same direction as it would have been had the platina plate stood in the place of the strip of copper sheathing. Indeed, the sample of pure precipitated copper appeared to be more highly electro-positive than almost any other sample of the same metal.

When, instead of opposing to sheathing copper in the galvanic pair, either a piece of platina, of zinc, iron, brass, or precipitated copper, there was employed another strip of sheathing copper, the deflection was sometimes on one side, and sometimes on the other of the due north and south direction of the needle.

In examining, therefore, the copper which is to constitute the sheathing of any given vessel, dock, or other submerged body, it is important to ascertain that all portions of the metals which enter into her coating and fastenings have the same electrical state, under similar circumstances. This remark applies as well to the nails which fasten the sheathing, as to the bolts which secure the timbers of a ship.

It is true that, though one sheet of copper might possess a higher electro-negative condition than another, and though the latter might consequently undergo corrosion, while the former received *protection*, yet the presence of a metal highly electro positive, like zinc or iron, may make *all* the sheets of copper incapable of corrosion. It is certain that, in such a case, the sheets least liable to corrosion would most easily accumulate foulness from seaweed and marine animals. This statement embraces the principle, and, also, the cause of failure of Davy's attempts at protection.

The method which has been adopted in comparisons, made during my experiments, may, in practice, be modified by using true sea water as the



fluid in which to immerse the samples of copper, and forming the galvanic pair of platina and copper, transmitting the current through a galvanometer coil of copper ribbon, with the edges vertical or toward the needle. The latter may be compound, made up of two or three strongly magnetized needles, arranged on a common support, and so disposed as to be nearly *astatic*—that is, having little directive force. They may be suspended with unspun silk, or rest by a jewelled cap on a delicate point.

In all comparisons by this electro-magnetic method, it must be borne in mind that copper, rendered positively electric by being opposed to platina, is not always capable of exhibiting, at the first immersion, its maximum divergency of the needle; and that, in comparing two samples of copper, together that which is covered with oxide will always appear electro negative to that which has been cleaned from its coating by a previous immersion in the saline liquid. Owing to this cause, it will not unfrequently happen that a divergency of the needle in one direction will, after a time, be converted either into a neutral state (the needle remaining in the magnetic meridian), or into a divergency in an opposite direction to that first assumed. The employment of an *astatic* needle has the advantage of using very strong magnets to oppose to the current of electricity, by which the efficiency of the latter is much augmented, while the opposite positions of the north and south poles in the system reduce the earth's directive power to any desirable extent. If, instead of suspending a needle perfectly *astatic* on a metallic point, we prefer to suspend it by unspun silk; the torsion of the latter may be the only force opposed to the current of galvanism generated between the salt water and the copper.

*Specimen No. II.*—This was, likewise, a sample of sheathing copper procured from the Philadelphia navy-yard. Its exterior was of a reddish color, hardly approaching to brown.

1. Its weight, per square foot, was 35.4 ounces.

2. Three trials of *specific gravity*, made on different fragments of the specimen, gave the following results, viz:

1st sample	-	-	-	-	8.895
2d sample	-	-	-	-	8.818
3d sample	-	-	-	-	8.967

The mean of which is - - - 8.893

As this was cold rolled metal, and its density not inferior to that of good copper, it was deemed advisable to make trial of the effect of annealing. After its specific gravity had been obtained, the third sample was, therefore, annealed at a red heat, cooled off in coal cinders, and then its specific gravity again taken, and found to be 8.741—showing a loss of  $2\frac{1}{2}$  per cent. of its density by the process.

3. Its toughness, as proved by the test vice, was found exceedingly defective.

Thus the highest of 7 results on length sheet strips

was -	-	-	-	2.50	rectangular bends.
The lowest	-	-	-	2.00	“ “
and the mean	-	-	-	2.214	
The highest of 4 trials on <i>cross sheet</i> strips was	-	-	-	-	2.50
The lowest	-	-	-	-	2.00
and the mean	-	-	-	-	2.125

The mean of the two means is 2.169% and the difference of the two means is 4.1 per cent. of this last number. This shows that when the strips had been barely bent over from the perpendicular to a horizontal position and then returned a very little beyond the vertical, they were broken. This had the least toughness of any sample tried during my experiments. The difference between it and others is very striking. If placed on the bottom of a vessel, this copper must have been exceedingly liable to crack from the slight working of the planks and timbers to which every vessel is liable, particularly in rough weather. A sample of copper almost precisely similar in character was found at the Washington navy-yard, which had been worn for some time, and had long cracks in different parts of the sheets. When a narrow strip was bent to a right angle between the fingers and again straightened, it uniformly parted.

4. The color of the fractured edges of this exceedingly brittle specimen of copper, is a dirty brick red. A mere film of metallic copper on one or the other side of the sheet was visible in places. The grain appears compact. The face of the sheet though generally smooth, displays in parts striated appearances corresponding with the direction of rolling. It possessed, in an eminent degree, the rigidity imparted by rolling at a low temperature.

5. The inspection, after cleaning with nitric acid, showed a mat appearance with innumerable small punctures penetrating the surface, an aspect altogether different from that of many other samples when subjected to the same test.

6. A strip two inches long and one inch wide, and weighing 13.74 grams, exposed for 72 hours in a fluid ounce of strong hydrochloric acid at 60° Fah. lost 1.77 gram, or 12.88 per cent., showing a greater corrodibility than the specimen No. I., by about 1.14 per cent. Less than one eighth of the loss, or 1.53 per cent. occurred in the first 24 hours.

7. In 10 measured ounces of the saturated solution of salt in water, the same piece afterward lost 0.02 gram in 48 hours.

8. In the same bulk of the dilute or decimal solution before-mentioned, this sample lost in 168 hours only .01gram. Hence the trial in strong hydrochloric acid evidently left this specimen less sensible to the action of salt and water than No. I. After the application of that acid, the sample exhibited a nearly uniform mat surface as above mentioned, when describing the effect of nitric acid. Minute spherical granules were seen under the magnifier, and the same striated appearance as before described. The strong acid left a soluble crystallized chloride interspersed among these grains, which were however entirely removed by continued washing.

In order to determine the influence of "cold rolling" on the destructibility of copper by strong acid, two pieces were cut each containing 1.1 square inch, and weighing 7.1537 grams. Previously to adjusting their weights, one of these had been annealed at a red heat and cooled off under ashes. The other remained as it came from the rolls.

These were both placed at the same instant in a basin containing about 2 ounces of strong nitric acid, without allowing them to touch each other, being kept apart by a piece of plate glass laid between them on the bottom of the basin. In this situation they remained five minutes, evolving, of course, very copiously, the fumes of nitric oxide.

At the end of that time they were simultaneously withdrawn, washed in a large quantity of clean water, dried at 212°, and then weighed. The an-

nealed piece weighed 6.55 grams, and the unannealed one 6.60, consequently the former had lost - - - - - .6037 gram,  
and the latter had lost - - - - - .5337 gram,

showing a difference of - - - - - .07 gram,  
or 13.1 per cent. more was corroded away in a given time from the annealed than from the unannealed sample.

To ascertain how far the influence of the annealing extended beneath the surface, the two pieces were again plunged simultaneously into the same basin of acid, with a like precaution as to keeping them apart. At the end of 18 minutes, the annealed piece, being washed, dried, and weighed, had lost - - - - - 2.2075 grams,  
the unannealed one had lost - - - - - 2.1550 grams,

showing a difference of only - - - - - .0525 gram,  
or 2.49 per cent.

Hence it appears, that while corroding away 7.46 per cent. of the unannealed specimen near the surface, the acid had dissolved of the annealed metal 8.43 per cent. The difference 0.97, is 11.4 per cent. of the latter number, and expresses the amount of advantage gained by rolling at low temperature in hardening the *surface* and preventing corrosion. Afterward, however, when acting on the deeper portions of the sheet, it appears that the acid dissolved of the hard metal 29.46 per cent. of its substance, while the other lost 30.19. The difference .73, is only 2.41 per cent. of the latter number.

From this it may be inferred that the effect of annealing was chiefly confined to a thin film on the surface of the copper, or we may consider that the advantage of cold rolling is limited to a slight superficial crust of the sheet, while the rest of its substance is in nearly the same state of corrodibility as it would have been left if rolled at a red heat. The effect of annealing, when tested by other means, will be seen in a subsequent experiment.

9. When polished by a copper-plate manufacturer, this specimen displayed a surface extremely unfavorable, according to the test which engravers would apply for discovering its purity. It was of a grey and reticulated appearance, with few dark and highly reflecting portions. Laid by the side of a good sample of engraver's plate, with the same degree of polish, it produced a very striking contrast, the brightness of the latter giving a distinct image of any object placed before it, while the dulness of the former rendered the image very indistinct.

10. The chemical analysis of this specimen was effected by dissolving it in strong nitric acid, which left of antimonious acid 0.62 per cent., equivalent to 0.496 per cent. of metallic antimony.

The nitrate of copper converted into sulphate, and then precipitated at a boiling temperature by pure potassa, gave of black oxide of copper, after ignition, 2.44 grams, from 2 grams of metal dissolved. This is equivalent to 1.94937 grams, or 97.468 per cent. of metallic copper.

Previously to precipitating the sulphate, however, the salt had been dried up and redissolved, to separate the sulphate of lead, which was reduced to oxide, and in that state ascertained to be equivalent to 0.73 per cent. of metallic lead. A trace of oxide of zinc was also obtained. From this it

would appear that this sheet was composed of copper	-	97.468 per cent.
lead	-	0.73
antimony	-	0.52
zinc	-	trace
		98.718,

leaving a deficiency of 1.282 per cent. to be accounted for, which we must probably regard as oxygen in the ether of the dinoxide of copper or that of the oxides of lead and antimony existing along with the metallic copper of the specimen. That the brittleness of these brick-red samples of copper is in fact owing to the presence of the red oxide of copper, is rendered still farther apparent by an experiment which I performed on two samples of copper bolt. They were selected on account of their striking difference in color and texture, the one being, like the specimen of sheathing under consideration, of a dull red color, verging on that of peroxide of iron, and nearly void of lustre, the other having the lively yellowish red of copper freshly precipitated by the galvanic process.

Both bolts were gashed to the depth of little more than one eighth of an inch all around, for the purpose of obtaining a fresh fracture of each, and particularly to obtain their relative toughness.

To produce the fracture they were laid upon two iron supports four inches apart and struck over the gashed part, which was centrally placed between the two supports. The deep red bolt broke at the first blow of a two-pound hammer, while the other resisted not only numerous violent blows with the same hammer, but even many heavy strokes of a ten-pound sledge, wielded with all the power of an able-bodied workman. Even this did not produce the desired effect, until the cold chisel had been resorted to a second time to deepen the gash round the bolt. When it finally parted, the grain was found coarser and the lustre far brighter than that of the first bolt.

The brittle bolt was now melted down in a crucible partly filled with crumbs of charcoal, through which the fused copper was allowed to descend. Having been kept for fifteen minutes in fusion, and stirred with a wooden rod to bring the metal effectually into contact with the combustible, it was at length poured into an iron mould forming an ingot nine or ten inches in length, one inch wide, and half an inch in thickness. On breaking this, the copper was found to have lost its distinctive red color, and with it the brittleness which had before been so remarkable. Several blows were required to break the ingot when notched round as the bolt had been before. It showed a clear metallic lustre in all parts of the fracture, and was slowly tarnished when exposed to the air. Under the microscope the difference in its appearance, before and after treatment in the crucible, was quite as remarkable as to the naked eye. Instead of the brick red, pulverulent, or earthy appearance, it shows spherical granules with a bright metallic lustre, pervading both the cavities and prominences of the fracture.

When treated in the same manner in the crucible, the other bolt gave an ingot very similar in texture to the one just described. It underwent but little or no change of properties from the action of charcoal, because there was apparently no oxide to be reduced. The toughness and pliability of both ingots was all that could be desired in good cast copper. If the inference be just, that the brittleness in these cases is due to the presence of oxygen, the cause may probably be found in a deficiency in that part of the refining process which is technically called "poling," or "toughening." More minute

details, in regard to the nature and effect of this process, will be given in a subsequent section.

*Specimen No. III.*—This was a sample, likewise, from the Philadelphia navy-yard.

1. A strip 3.5 inches long, by 1.5 inches wide, weighed 636.29 grains, troy, which gives 39.94 ounces, avoirdupoise, per square foot. It is, therefore, called 40-ounce copper.

2. Its specific gravity is 8.723.

3. In the trial of toughness by the test-vice it was broken twelve times, the strips being cut lengthwise of the sheet, and ten times on those cut in the transverse direction.

The <i>maximum</i> number of bends for the former was	-	-	12
The <i>minimum</i> “	“	-	7
The average “	“	-	9.25
For the latter the number of bends at a maximum was			8.5
	at a maximum was	-	7
	and the average was	-	7.07
The mean of the two averages is	-	-	8.16

and their difference, 2.18, is 26.6 per cent. of that mean.

4. The fragments of this specimen exhibited a more granular texture than those of either of the two preceding. Slight portions of brownish red matter are seen distributed through the body of the metal. But the complexion of the copper when several fragments are placed so as to exhibit their edges, forms a striking contrast with a similar pack of the fragments of No. II. Compared with freshly-deposited galvanotype copper, as a standard, the colors of the two are found to approximate very nearly.

5. After cleaning the rolled faces from oxide with strong nitric acid, the surface was rough, and depressions formed by scales of oxide were apparent; but the color was uniform, having the true tint of copper, with a mat ground.

6. A strip 2 inches long and 1 inch wide, weighing 15.39 grams, exposed to 1 ounce measure of strong hydrochloric acid, lost, in 72 hours, 2.35 grams, or 15.2 per cent. of its whole mass; and of this, only 2.7 per cent. were lost in the first 24 hours. This proves that the rate of corrosion was  $2\frac{3}{8}$  times as great after the acid had removed the exterior film of oxide as it had been at first. This is consistent with what we know of the galvanic action of a pile or battery long disused and much oxidized. As the oxide becomes dissolved, the effective surface on which the acid can act becomes greater, for all the irregularities then furnish grounds of attack. It will be seen hereafter that similar, and even greater inequalities of actions between the first and second stages of solution were found in all the other samples of copper subjected to this kind of examination. After this exposure to hydrochloric acid, the strip was nearly as rough and as thickly studded with salient points as the back of a galvanotype model. The direction of rolling was easily traced by the linear cavities or furrows which appeared to have been originally filled with oxide.

7. The same strip of copper, now reduced to 13.04 grams, was exposed for 48 hours to 10 ounces of the saturated solution of salt in water, and lost .02 gram.

8. In 10 ounces of the decimal liquid formed from the saturated solution, the same strip afterward, in 168 hours, lost .015 gram.

9. By polishing, in the manner above described, this specimen was made

to exhibit a surface with which an engraver would have far less cause to complain than with many others which were examined during this inquiry—even less than with some samples of engravers' plate which came under examination.

10. Two grams dissolved in strong nitric acid, left a grayish-white residuum, which, when thoroughly roasted and dried, weighed .02 of a gram of the hydrated oxide of tin.

The nitrate was then converted into sulphate, and dried up, to obtain any sulphate of lead which might be present, but no appreciable quantity was procured. The re-dissolved sulphate of copper was then precipitated by potassa, and yielded 2.48 grams of oxide, equivalent to 1.9797 grams, or 98.98 per cent. of metallic copper. The tin was 0.59 per cent., and consequently the oxygen and loss were 0.43 per cent.

This high degree of purity is in accordance with the indications afforded by the other tests above applied.

11. The electrical trial by the galvanometer manifested that this copper was more easily attacked by dilute muriatic acid than the English sheathing from the Cyane, but less so than a sample of pure galvanotype metal, as it became electro-positive when compared with the former, making the needle diverge about 20 degrees on one side of the meridian, while with the latter the diverging was 15 degrees in the opposite direction.

*Specimen No. IV.*—This was from a sheet of cold-rolled navy copper, weighing 32.5 ounces per square foot.

1. Its color on the rolled faces was a dark brown, almost black.

2. Its specific gravity was 8.778.

3. When this copper was tried in the test vice fifteen times in the length-wise direction, the maximum number of bends required to produce any one fracture was	12
The <i>minimum</i>	6
The mean	8.33
Of 31 fractures on cross-sheet strips, the maximum number of bends was	9
The <i>minimum</i>	3
The mean	5.61

The mean of the two means is 6.97; a much lower number than that obtained from No. III., though the latter had one fourth more in thickness of the sheet. The difference of the two means ( $8.33 - 5.61 = 2.72$ ) is 39 per cent. of 6.97, and this expresses the amount of inequality in the two directions.

4. On inspecting the edges of the fragments there was generally observed a central line of dull red matter of an aspect approaching that of "red chalk;" and exterior to this were lines of metallic copper. In certain parts were seen specks of black oxide penetrating beneath the surface, and some of the black streaks, which on the face of the sheet mark the direction of rolling, were, at their sections on the length-sheet fractures, observed to extend nearly half way through its thickness.

5. On applying strong nitric acid to remove the blackish coat which adhered to the surface, it was found pitted in hemispherical cavities, but often elongated in the direction of the rolling. On one side of the sheet the black matter adhered with such pertinacity that the acid did not, even after long application, wholly remove it; and those portions of black scale which were at length detached remained floating in the acid, indicating a carbon-

aceous nature, probably derived from the oil employed upon the rolls, and which sends forth a flash of flame when a pack of thin sheets is passed through the mill. If this conjecture be right, the surface could not have been thoroughly cleaned previously to the cold rolling.

6. A strip, two inches long by one inch wide, weighing 13.08 grams, lost, in the first 24 hours of exposure, in one fluid ounce of strong hydrochloric acid, 0.38 gram, and in the succeeding 48 hours 2.22 grams, being 2.9 times as much loss per hour in the second as in the first period of action. The total loss, 2.6 grams, is 19.87 per cent of its weight.

At the conclusion of this trial in hydrochloric acid, this sample showed, not only ridges and furrows, but also deep circular cavities, and some considerable prominences rising above the general level of the face. It may with great propriety be denominated pitted copper. The extent of surface exposed to the action of acid is evidently much increased by this roughness, and that may in part account for the very rapid corrosion during the latter period of action.

7. When the same strip was subsequently exposed for 48 hours to 10 fluid ounces of strong salt and water, it lost but .01 gram, or .000208 gram per hour.

8. In 10 fluid ounces of the decimal solution it lost, in 168 hours, .015 gram, or .000089 gram per hour. This proves that the strong solution acted  $2\frac{1}{2}$  times as energetically as the weaker decimal liquid.

9. When planished and polished this specimen displayed, over nearly the whole surface, a gray cloud, which appeared to show itself through some transparent medium, like the dints of an engraving seen through the glass which covers it. Slight depressions are still perceptible, presumed to correspond to the little pits developed by acids. It would of course be soon rendered *mat* by an attempt to etch upon it; and the polishing incident to taking off impressions would wear the softer more rapidly than the harder points, and speedily render the prints cloudy and indistinct. A filament cut by the graver broke into pieces, but a few inches in length, while cutting.

10. After dissolving two grams of this specimen in concentrated nitric acid, separating a trace of tin which remained drying up the solution, expelling the excess of acid, redissolving the nitrate and converting it into sulphate, separating the sulphate of lead, and then obtaining the oxide of copper, the latter was found to be 2.49 grams, equivalent to 99.38 per cent. of metallic copper. Traces of iron and of zinc were detected but too indistinct to render their quantitative determination important. The lead proved to be equal to .46 per cent., thus leaving for oxygen .16 per cent.

In this, as in all the other assays, the samples dissolved were carefully cleared from adhering films of oxide, before being put into the nitric acid.

11. The electrical trial proved this sample to be rather more highly electro-positive than any of the preceding, though decidedly inferior in this respect to the galvanotype plate. It was, of course, electro-negative to iron and zinc.

*Specimen No. V.*—This was from a portion of a sheet two feet long, procured at the Philadelphia navy-yard. Its color was bluish black. It was like all the preceding, "cold rolled."

1. Its weight per square foot was 35.3 ounces.

2. Three trials of its specific gravity resulted as follows:

The first fragment gave	-	-	9.050
The second	-	-	8.845
And the same, after annealing	-	-	8.929

3. In the test-vice this copper exhibited a very near relation in toughness to the first specimen above given.

On strips cut lengthwise of the sheet, 25 trials gave—  
 a *maximum* number of 13 rectangular bends,  
 a *minimum* of 7,  
 and a *mean* of 10.16.

On cross sheet strips, 15 trials gave a maximum of 8,  
 a minimum of 4.5,  
 and a mean of 5.43;

hence the mean of the two means is 7.79,  
 and their difference, 4.73;  
 showing that the difference in toughness in the two directions of the rolling is 60.7 per cent. of the average of the two.

This great inferiority of toughness in the direction transverse to the rolling, may be of some importance in view of the disposition of the sheets on the sides of a vessel.

As, in the two directions, the difference in tenacity was in this specimen far more striking than in the generality of hot rolled sheets, I made another set of comparative trials, on strips cut in the two transverse directions, and *annealed* at a red heat.

At 12 trials, the longitudinal strip then gave a *maximum* of 15.00  
 a *minimum* of 10.00  
 and a *mean* of 12.375.

The cross sheet strip, at 12 trials, gave a *maximum* of 8.5,  
 a *minimum* of 6.5,  
 and a *mean* of 7.23.

The mean of these two means is 9.802.

Comparing these results with those obtained before annealing, we find that the mean gain is  $9.802 - 7.79 = 2.012$ .

On length sheet strip alone, the difference is  $12.375 - 10.16 = 2.215$ .

On the cross sheet strip alone, it was  $7.23 - 5.43 = 1.80$ .

The last two differences do not, however, prove, that in the direction of rolling the annealing process is relatively more advantageous than in the other. The reverse is in fact demonstrated. The gain in the transverse, was greater, compared with its total amount, than that in the longitudinal direction.

Thus,  $10.16 : 5.43 :: 2.215 : 1.183$ ; instead of which, we have 1.80 as the actual gain in the transverse direction, or 52 per cent. more than its due proportion. From this it appears, that though the tenacity in the two directions is not equalized by annealing, the difference is relatively diminished. Instead of 60.7, it is now 52.4 per cent. of the mean.

The constrained position into which the particles of copper are brought by rolling, particularly at a low temperature, contributing to its rigidity and brittleness, is, by annealing, more effectually obviated in the transverse than in the longitudinal direction.

4. The fractured edges exhibit on the exterior a pretty deep copper red, with a fair metallic lustre, having a rather darker red in the middle. In some parts, the thickness is nearly equally divided between a metallic ply on one side, and an ochrey red on the other.

5. An application of strong nitric acid to the surface of this copper left a nearly polished face, with the exception of here and there a spot less brilliant than the rest.



6. In strong hydrochloric acid, the strip, 1 inch wide by 2 long, weighing 13.71 grams, lost, in the first 24 hours, only 0.16 gram, and in the succeeding 48 hours, .96 gram; thus showing exactly three times as much activity during the second as in the first period of its application.

The action of this acid developed the striæ caused by rolling, in a manner to render them very distinct on both faces of the sheet. The line of oxide, which had been impressed, and had in part caused the striæ, was completely removed.

7. In 10 ounces of a saturated solution of salt in water, the above strip lost, in 48 hours, .025 gram, or .000521 gram per hour.

8. In the same measure of the decimal solution, it lost, in 168 hours, .023 gram, or .000137 gram per hour. Hence, the saturated liquid corroded this copper 3.8 times as rapidly as the decimal solution.

9. In order to ascertain how far the solubility of this specimen might be affected by annealing, two other strips were cut of the same size as the one just described. Of these, the strip numbered 1 was left unannealed; that numbered 2 was annealed at full redness and cooled off gradually in ashes. Each was then placed in three measured ounces of strong hydrochloric acid, in similar jars, and in the same exposure as to access of air, temperature, &c.

At the beginning of this exposure, No. 1 weighed 13.55 grams.

At the beginning of this exposure, No. 2 do. 13.60 do.

At the end of the period, No. 1 do. 10.63 do.

At the end of the period, No. 2 do. 11.08 do.

Hence it appears that the unannealed copper had lost	-	2.92	grams,
the annealed	-	2.52	do.

being a difference in favor of the latter of	-	.40	gram,
or 13.7 per cent. of the loss by the unannealed sheet.			

They were next exposed, for 160 hours, to action of 10 ounces of saturated solution of salt in water, after which,

No. 1 weighed 10.3475 grams, and had lost - - - .2825,

No. 2 do. 10.82 do. do. - - - .2600,

Leaving still a difference of	-	.0225,
or a little less than 8 per cent. in favor of the annealed sample.		

It was remarked that, during this experiment, as the strips could not, on account of the narrowness of their containing jars, lie flat upon the bottom, but stood partly inclined, the lower end of each, and, particularly, of No. 1, became, by the action of the liquid, bevelled off on both sides, so as to form a sharp edge, and continued bright, while the upper end was still square as cut by the shears, and the whole upper portion remained of a brownish color.

Immediately after the last weighing had been completed, they were again placed in the salt and water, with the square ends downwards, where they remained 173 hours longer when—

No. 1 weighed - - - - - 10.3275,

No. 2 weighed - - - - - 10.805,

the former having lost .020, the latter .015; giving still a difference of .005 gram in favor of the annealed copper.

Hence, it appears that, in every stage of the corrosion, No. 1 was more

rapidly acted on than No. 2; for while the former lost in all 3.2225 grams, the latter lost but 2.795 do.

showing a difference of 4275 gram, which is 12.95 per cent. of the corrosion of the unannealed copper.

10. When polished and prepared for the graver, this specimen displayed less of the dull or gray color than some of the preceding specimens, and when tried with the graver, a fine filament could be cut continuously across in both directions, on a plate 4 inches long and 3 wide. These filaments could not in all cases be straightened, without parting. They were, however, in this respect, about equal to those cut from a piece of good engraver's copper.

11. The metallic copper in this specimen proved to be 97.5 per cent., and the tin 0.52 per cent. The other ingredients, of which lead was one, were accidentally lost, and time did not permit me to repeat the analysis; which, however, is not of particular importance, since the degree of purity is known.

12. By the galvanometer this copper appeared to be scarcely distinguishable from the deposited plate of pure metal. It would therefore rank next to common brass, which, together with iron and zinc, was higher in the electro-positive scale.

*Specimen No. VI.*—This was a sheet of 22-ounce copper manufactured in Baltimore, and procured at the warehouse of Nathan Trotter, at Philadelphia. Its color was a bright, yellowish red—that of freshly-pickled, hot-rolled copper, with only a slight tarnish on certain parts of the surface.

2. Its specific gravity was found to be 8.784.

3. By twenty-four fractures in the test-vice, in the direction of the rolling, the maximum number of flexures, through a right angle, was 24.00

The minimum - - - - - 15.00

And the mean - - - - - 19.396

By twenty-three fractures, in the transverse direction—

The maximum number was also - - - - - 24.00

The minimum - - - - - 15.00

And the mean of the 23 is - - - - - 18.10

The mean of the two means is - - - - - 18.748

Hence it appears that, though the *maxima* and the *minima* in both directions are the same, yet that the *mean* of the length-sheet strips is 1.296 more than that of the cross-sheet ones; or, in the former direction this copper has a toughness superior by 6.91 per cent. of the mean, to that which it possesses in the latter. These experiments also prove how greatly superior both, in absolute tenacity and in uniformity for the two directions, this specimen is to all which have preceded. It is true that specimen No. II. gave a *difference* which was only 4.1 per cent. of the *mean*; but the exceeding brittleness of that metal, in both directions, should seem only to prove what we ought to expect, that when all toughness disappears, all its differences must likewise vanish.

With the exception of specimen V, it will be seen that none of the preceding samples gave half as many rectangular bends, before breaking, as the one now under consideration.\*

\* It is perhaps worthy of notice here, that the absolute tenacity of rolled plate-iron, in the longitudinal direction, is, by the mean of seventy-five trials on ten different varieties of that material, almost exactly 6 per cent. greater than in the transverse direction.—See report by sub-committee on explosions, of Franklin Institute, "On Strength of Materials for Steam-boilers,"—Philadelphia, 1837—page 232.

4. The edges of fragments produced in the experiments just cited exhibited a light copper complexion, with very trifling intermixtures of a darker red color, such as had been observed in several other specimens.

5. When the slight film of red oxide was removed from this specimen by nitric acid, the surface exhibited in some parts moderate depressions produced by the scale which had covered the copper in rolling. In other parts were to be seen the reticulated figures already referred to, in speaking of the texture of refined copper, as resembling the configuration of skin at the inside of the human fingers.

6. A strip of this copper 2 by 1 inch, weighing 8.61 grams, having been exposed for 24 hours to the action of one ounce of strong hydrochloric acid, afterward weighed 8.14 grams, losing in that time .47 gram; almost exactly three times as much as the specimen No. V. had lost during the same period.

In the second period, which was 48 hours, the loss of the specimen now under consideration was 1.18 grams, which is 1.25 times as much waste per hour as had occurred during the first period.

When compared with either of the five preceding specimens, we find that the difference is but about half as great in the Baltimore copper between the first and the second periods of action as in any of the cold-rolled samples; the average rapidity per hour on these latter being 2.83 times as great for the last two days as it had been during the 24 hours preceding. This greater difference in the hard-rolled copper is doubtless to be explained by referring to the high electro negative character of the coat of oxide with which, in all cases, the cold-rolled sheets were covered, opposing an effectual barrier to the action of the acid. A more striking illustration of this point will be seen hereafter. The Baltimore copper, on the contrary, was so little coated with oxide, that it took almost immediately the normal rate of corrosion.

When perfectly washed from the hydrochloric, and its surface was bright and granular, like the backs of galvanotype specimens, some of the more deeply corroded portions displayed, in a strong light, chatoyant or iridescent tints.

7. An exposure for 48 hours to 10 fluid ounces of strong salt and water, caused in the above-mentioned strip no diminution of weight.

8. In 168 hours of exposure to the decimal solution it lost .0125 gram.

9. The properties of this copper appeared to adapt it to the purpose of experiments on the protective effects of iron and zinc. Two strips were therefore cut seven inches long and one inch wide; each was bent into the form of a V, the extremities being brought within about two inches of each other; a hole was punched in the lower part of the curve to receive a nail.

No. 1 weighed 28.82 grams, and received an iron nail weighing 1.45 gram.

No. 2 weighed 28.47 grams, and received a zinc nail weighing 1.005 gram.

Each strip was placed with the curved part downwards in a jar about 12 inches in diameter, the elasticity of the copper keeping the strip at any desired elevation. The nails were not allowed to touch the bottom of the jar. Eight fluid ounces of a saturated solution of salt in water were then poured into each jar, which came to the top of the strips. After 49 hours they were taken out, carefully washed, dried, and examined. No. 1 had the same bright copper color as when first put in. No. 2 had acquired a dark gray tint. The strips and nails were then weighed separately.

No. 1 weighed 28.82 grams, and its iron nail 1.45—loss .00.

No. 2 weighed 28.471 grams, and its zinc nail 0.98—loss .025.

From which it appears that the greater surface of copper precisely counteracted the superior corrodibility of iron, while the higher affinity of zinc for chlorine caused an attack of that metal and a deposition of a small quantity on the surface of the copper, giving it a change of color and a slight increase of weight.

After this weighing the strips and nails were replaced in the jars, and the action suffered to go on for 210 hours longer, when they were again taken out, washed, dried, and weighed.

No. 1 now weighed 28.8275 grams, and its iron nail 1.43—loss .02.

No. 2 now weighed 28.4725 grams, and its zinc nail 0.95—loss .03: hence it should seem that a part of the iron and zinc corroded from the nails became fixed upon the surface of the copper, since the latter, instead of losing weight, showed an appreciable gain in both cases. This experiment may throw some light on the nature of over-protection; which, instead of leaving the copper of a ship merely passive, causes it to attract to itself some of the ingredients of sea-water, fixing them by galvanic agency firmly to the surface, and thus constituting the nidus for marine insects, plants, &c.

10. By chemical analysis, it appeared that this metal was composed of—

Copper	-	-	-	99.76	per cent.
Tin	-	-	-	.166	
Oxygen and loss	-	-	-	.074	

100.

This high degree of purity indicates the reliance which may be placed on the test of toughness, as indicative of the absence of those impurities which can impair the usefulness of copper.

11. Compared with galvanotype plate, the Baltimore copper appeared, by the usual test, to be but slightly electro-negative.

*Specimen No. VII.*—1. This was a sheet of English sheathing, stated to be from Liverpool, and called 24 ounce copper. The surface was in some parts rough and unsightly, with black spots, and other stains. It formed a rather striking contrast with No. 6.

2. Its specific gravity was 8.973, and, consequently, it ranks among the densest varieties of copper.

3. Strips cut lengthwise of the sheet were tried in the test-vice, making 16 fractures, of which the *maximum* number of bends was - - - 29.00

the *minimum* - - - - - 19.00

and the *mean* - - - - - 22.30

Twenty five trials on cross-sheet strips gave—

a *maximum* of - - - - - 24.00

a *minimum* of - - - - - 16.00

and a *mean* of - - - - - 19.96

The mean of the two means is - - - - - 21.13

and the difference of the two is - - - - - 2.34

or 11 per cent. of the mean tenacity in the two directions.

4. The complexion exhibited at the fractures is light, with a generally clear metallic lustre; though there is occasionally seen a slight portion of dull, reddish matter interspersed among the granular parts.

5. A strip, one by two inches, weighed 8.48 grams; and when exposed twenty-four hours in an ounce of hydrochloric acid, lost .10 gram. In the next forty-eight hours it lost, in addition, .96 gram; showing, therefore, 4.8 times as much rapidity of action per hour in the second, as in the first period of exposure.

6. By exposure to ten fluid ounces of strong solution of common salt in water, this sample lost, in forty-eight hours, .01 gram.

7. In one hundred and sixty-eight hours it lost, in the decimal solution of the same, .01 gram; showing that the rate of corrosion per hour, in the concentrated liquid, was 3.5 times as great as in the weaker solution.

8. The proportion of ingredients obtained from this copper by chemical analysis was—

Copper	-	-	-	-	-	97.81
Zinc	-	-	-	-	-	1.75
Tin	-	-	-	-	-	.16
Antimony	-	-	-	-	-	.27
Iron	-	-	-	-	-	trace
						<hr/>
						99.99
						<hr/>

The high specific gravity of this specimen, its superior toughness, and the slow rate of its corrosion in hydrochloric acid as well as in salt and water, all seem to indicate that the metals were in their reguline state, and not in that of oxide. The metal appears to have been well *toughened*, rather than thoroughly *purified*.

9. By the galvanometer this copper proved so far positive to No. 6, as to cause a divergency of the needle to the extent of six degrees. When the Baltimore and the Liverpool sheets were successively compared with one of platina, the former produced a positive divergency of twenty-five, and the latter of twenty-seven degrees, on the same galvanometer. When the two strips of copper were compared with each other, the usefulness of the galvanometer as a test of the amount of corrosion taking place, was illustrated by letting fall on the Baltimore copper a drop or two of strong acid, which, for a few moments, produced a divergency in an opposite direction; again to be reversed as soon as the acid had run down and become fully incorporated with the rest of the corroding liquid. With the galvanotype plate, this specimen of Liverpool sheathing was *electro-negative* to the extent of seven degrees; and with that of the Cyane it was *positive* ten degrees. In these experiments the corroding liquid was dilute hydrochloric acid; or the same with a little nitric acid, to increase its activity.

*Specimen No. VIII.*—This was a sample of the piece above mentioned as having been taken from the bottom of a vessel (the brig Elizabeth) after being worn three years between Philadelphia and the West Indies, and for a great part of the time *at sea*. It was in general very evenly worn, but had holes in some parts, and was too much reduced in substance to allow of any satisfactory experiments on its toughness. It was represented to have been manufactured in London. It had been originally 18-ounce copper. A strip 3.5×1.5 inch was found to weigh 131.274 grains, which is 25 grains per square inch, or 8.22 ounces avoirdupoise per square foot. This shows a loss of 9.78 ounces per square foot in all, or 3.26 ounces per foot per annum. If we suppose the copper put on our public armed vessels to wear as evenly and at the same rate as this had done, and possess at the end of its service the same weight per foot as the copper under consideration, then the metal of 28 ounces ought to last 6.06, and that of 35 ounces 8.2 years.

On dissolving this copper in nitric acid, there was left a trace only of oxide of tin. Subsequent treatment proved the presence of 1.3 per cent. of zinc and a minute portion of iron, but no lead was detected.

*Specimen No. IX.*—This was English copper, from Liverpool, part of a

sheet substituted for that of which a sample was examined in the preceding trial.

1. It was found by trial to weigh 18.3 ounces per square foot.

2. Its exterior was marked with spots of a bluish tint, while the surface was as smooth as the generality of merchantable sheathing copper.

3. Tried in the test-vice, length sheet strips gave the following numbers of rectangular bends before parting, viz :

The <i>maximum</i> -	-	-	-	20.5
The <i>minimum</i> -	-	-	-	16.0
The <i>mean</i> of six	-	-	-	17.832
Cross sheet strips gave at a <i>maximum</i>	-	-	-	20
<i>minimum</i>	-	-	-	6
<i>mean</i> of 11 trials	-	-	-	13.272

This presents a remarkable difference between the cross sheet and the length sheet strips in regard to uniformity; for while the latter show between the maximum and the minimum a difference of 20.5—16 or 4.5, which is 25.2 per cent. of 17.832, the former show a difference between the extremes which is actually greater the whole mean tenacity. Thus,  $20 - 6 = 14$ , which is 105.4 per cent. of the mean tenacity in this direction.

4. The fragments exhibited along their edges a tolerably uniform structure and color, though some redness deeper than that of pure copper is perceptible along the central line.

5. A strip 2 inches long by 1 inch wide weighed 7.15 grams. Exposed for 24 hours to 1 fluid ounce of strong hydrochloric acid, it lost 0.13 gram, and in the succeeding 48 hours it was reduced 0.59 gram, showing that the corrosion was 2.25 times as great per hour during the second as it was in the first of these two periods.

6. Exposed for 48 hours to 10 ounces of the saturated solution of salt in water, the same strip lost .03 gram.

7. The decimal solution of the same salt in 168 hours dissolved away an additional portion of .01 gram, which proves that the strong solution was 10½ times as active as that which had been diluted to one tenth of its maximum strength.

8. After corrosion by hydrochloric acid, this copper presented a clearly characterized granular texture much resembling that exhibited by well-formed plates deposited by galvanism.

*Specimen No. X.*—This was a sheet of English copper weighing 18.1 ounces per square foot, which had been used in my laboratory for constructing galvanic apparatus. It was tested only for toughness and corrodibility.

1. Its specific gravity was 8.464.

2. The highest number of rectangular flexures was 12.5, and the lowest 9.5, and the mean of five trials 11.3.

3. Along their edges the fragments present a rather irregular line of dull red, approaching to brick red, with some occasional spots of brown or greenish. The lines of metal at the two rolled surfaces appear brighter, and more formerly metallic than the rest of the thickness of the sheet. One or two specks, decidedly black, occur in the interior parts of the metal.

4. A strip two inches long, by one inch wide, weighed 6.52 grams; and, in 24 hours, lost, in one ounce measure of hydrochloric acid, .11 gram; and, in the next 48 hours, .63 gram, showing 2.82 times as much corrosion per hour in the second as in the first period of action. The striæ from rolling were distinctly marked after corrosion, and some pits of considerable depth were visible.

5. In an exposure for 48 hours, to 10 ounces of strong salt and water, the same strip lost .03 gram; and, in 168 hours, the decimal solution of the same bulk took away .018 gram, which indicates that the strong solution took away 5.84 times as much copper per hour as that having but one tenth the strength. From a comparison with the other samples, it will appear that this copper, which was but moderately tough, as proved by the above experiments, and which manifestly contained oxide distributed in various parts, underwent as rapid a solution in salt and water as any sample tried, if we except No. I.

*Specimen No. XI.*—Another sample of English copper, still thinner than the preceding, was tried in the test-vice, and gave, at six fractures of strips cut in the longitudinal direction of the sheet, an average of 21.5 rectangular bends; the highest number being 24, and the lowest 20.

At eight fractures of strips cut crosswise of the sheet, the *maximum* was 19, and the *minimum* was 15, while the average was 18.25. Hence the mean tenacity in the two directions is represented by 19.875; and the difference of the two average numbers is 3.25; so that the difference is 16.3 per cent. of the mean strength.

*Specimen No. XII.*—In order to test the character of copper chemically pure, a plate two inches long and one inch wide was deposited by the galvanotype process upon a surface of pure silver. The back, of course, presented the usual aspect of such deposits, exhibiting a *crystalloid* structure, with numerous prominences and depressions; and the surface which had been in contact with polished silver, had an equal degree of polish with that on which it had been deposited.

1. By exposure for 24 hours to one ounce of strong hydrochloric acid, this plate was reduced from 4.83 to 4.1 grams, losing .73 gram. During a further exposure to the same portion of acid for 48 hours, it lost 1.39 grams, being reduced to so thin a sheet as scarcely to bear handling without crumbling to pieces.

From the preceding trial, it is evident that the rate of corrosion did not increase in the later period of action; for, during the first 24 hours, it was .03 gram; and, in the last 48 hours, .0289 gram per hour. The diminished activity of the acid may probably be ascribed to its approach to saturation.

As this copper was free from oxide, we may find in this circumstance a probable cause why it differed so widely from them in the rate of its corrosion at different periods, and why they were so sluggish in arriving at their maximum rate of corrosion.

By referring to preceding statements, it will be observed that this sample of pure copper underwent solution with greater rapidity than other specimens, except Nos. II, III, and IV. The only one which approaches in corrodibility during the first stage of the action, is the comparatively clean and pure Baltimore copper, and even on *that* the hydrochloric acid had scarcely more than two thirds as much corrosive power as on this, during the first 24 hours.

In order to prove the justness of the method of estimating the weight of copper in analysis, from that of the dry sulphate, a portion of this plate, cut off when freshly precipitated, was heated with pure and strong nitric acid, in a matrass, giving a perfectly clear solution. This was evaporated nearly to dryness, and then heated with sulphuric acid, and again evaporated quite to dryness, expelling all excess of both nitric and sulphuric acid. The weight of sulphate was 4.9 grams from 2 grams at first dissolved. The sulphate had a greyish appearance, and was suspected to contain a small portion of

oxide set free from sulphuric acid, or possibly not withdrawn from the nitric in the prior process. It was therefore re-dissolved, and heated with a small additional portion of sulphuric acid. The salt, when again made anhydrous by a heat of about 600° Fahrenheit, was whiter than before, and weighed 4.913 grams, differing from the first weight by about one fourth of one per cent.

To estimate the amount of oxide which this contains, we may have recourse to the analysis some years since given by Berzelius, quoted by Henry, which showed the composition of the dry sulphate to be 103.66 parts of black oxide of copper to 100 of sulphuric acid. From this it should appear that the oxide was 2.50064 grains.

If, in the composition of the black oxide of copper, we suppose with Doctor Ure that there are 63.415 parts of metallic copper to every 79.441 of oxide, then the above quantity will be the equivalent of 1.99604 grams of metallic copper. The atomic weight assigned by Thenard gives the copper 1.9962 grams, and those of Turner make it 1.09566. From the first of these three the per centage of copper recovered is 99.802, by the second it is 99.810 and by the third 99.773.

Hence, whichever number we adopt in the calculation, the loss is only about one fifth of one per cent. So that if we may assume as correct the proportions given by Berzelius for oxide of copper and sulphuric acid in the dry sulphate of copper, and adopt the atomic constitution of the black oxide on which chemists are now so nearly agreed, we may obtain results not differing from the truth by more than one five hundredth part of the quantity assayed.

The loss observed is possibly referable, at least in part, to a very thin film of oxide which had formed on the copper previously to solution in nitric acid; in part to a little moisture which may have adhered to the metal at the time of first weighing it; and in part to the unavoidable residuum of dry salt adhering to the evaporating basin.

From this and similar experiments, I am induced to give a preference for practical purposes to this method of estimating copper in analysis, over that which depends on reducing it to the state of black oxide. It avoids the tedious process of precipitating with caustic alkali, at a boiling temperature, of filtering, washing, calcining, and the like. It requires only that the liquid sulphate should be evaporated at a sand heat, dried in the same basin, stirred when nearly dry, to ensure desiccation (but without approaching a red heat, to prevent any decomposition), and weighed in the basin or crucible in which it has been dried, to avoid the loss by transference; and to secure it against imbibing moisture by cooling down to a temperature at which vapor could be absorbed from the air. It has already been seen with what readiness hydrochloric acid dissolved this specimen of pure copper, and we have consequently a confirmation, as far as it goes, of the statements often advanced, that perfectly pure copper does not resist corrosion with so much force as many of its alloys.

*Specimen No. XIII.* This was a sample of bolt copper about three quarters of an inch in diameter, which had been selected from a large number of fragments, on account of its deep red color. On cutting gashes about one tenth of an inch deep all round the bolt, it was broken with one or two blows of a two-pound hammer. A chip cut off from this bolt, and weighing two grams, was dissolved in strong nitric acid, leaving a white residuum of the oxide of tin, and also a small fragment of the copper covered with mercury. The observation of the latter metal having given rise to a suspicion



of adulteration in the acid, a portion equal to that used in the analysis was evaporated to dryness, and left off the pernitrate of mercury a quantity equivalent to that of the metal reduced on the copper. As the acid had been procured for a pure article of great strength, it suggested the query, whether this adulteration is ever resorted to for fraudulent purposes, to increase the specific gravity of the liquid, and thus enhance its price? When completely covered with mercury, the fragment of copper ceased to be acted on by the acid, though by no means saturated; thus confirming a principle exemplified by the action of sulphuric acid on amalgamated zinc, as applied in the construction of one form of galvanic apparatus, and to a certain extent also confirming the statements already alluded to, respecting the action of acids and of sea-water on copper and its alloys. That zinc is thus rendered less corrodible by alloying it with copper than it would be alone, is very certain. Occasion will hereafter be taken to illustrate this and other points of the subject to which the examination of this specimen gave rise.

Having separated the various impurities, the sulphate of copper was found to be 4.92 grams from the 2 grams of metal dissolved, and consequently the metallic copper was 97.725 per cent. Of the foreign ingredients, the zinc was found to be 0.75 per cent., and the lead .0035—iron .007, with a trace of tin, and consequently exhibiting a deficiency of about 1.4 per cent. of the weight required to make up the original assay, which will be readily assigned to the oxygen in the different metals. As a bolt entirely similar to this in appearance and brittleness had before been proved capable of an entire change of appearance and of toughness by the application of a deoxidizing agent, there seems no doubt that to this cause, mainly, are we to attribute the imperfect tenacity of this and all similar specimens of copper.

In further proof of the durability of true alloys when subjected to the action of salt water, I may add that I obtained a sample of sheet brass composed according to the proportions assigned by Mr. Muntz,\* viz: 60 parts by weight of copper to 40 of zinc. A strip of this brass (which is capable of being rolled at red heat, and which is in fact extensively manufactured into bolt and sheathing) was compared directly with a strip of the copper, No. V., of the above series, and also, with a strip of the same length and breadth of very defective engraver's copper marked over with gray and reticulated portions, and therefore unfit for the intended purpose.

Each strip was about 6 inches long, and 1.16 inches wide.

The engraver's plate weighed, at first, 76.98 grams.

The sheathing copper (No. V) weighed, at first, 45.80 grams.

And the Muntz's sheathing brass weighed, at first, 51.37 grams.

Each was put into a separate glass jar, with ten ounce measures of a saturated solution of salt water, in which they remained 211 hours, at the end of which time they were taken out, washed, and dried.

The engraver's plate then weighed 76.96.

The sheathing copper 45.79.

And the sheathing brass 51.35.

The sheathing copper had previous to immersion in salt and water been effectually cleaned with nitric acid. It will be seen that the engraver's copper and the sheathing brass were corroded, at the same rate, and each doubly as fast as the clean strip of sheathing copper.

\* See Repertory of Patent Inventions, vol. xvi., series 3d, p. 12.

In order to understand clearly the character of the copper of commerce it is necessary to refer to the processes by which it is made to assume the state in which we see it. Without such reference it would be next to impossible to convey any just notion of the cause, which modify the character of the metal, or of the indications by which that character may be judged.

Copper which comes to the market in the state of pigs, which have been produced in the smelting works, is of a purplish red color, sometimes blue, and possesses but little of the true metallic lustre.

To bring it to the desired state for rolling into bolts or sheets, it undergoes first a process of refining by calcination. This consists in placing the pigs upon the hearth or "sole" of a reverberatory furnace, heating them gradually, and, finally, having oxygenated the foreign metals into scoria, melting the copper and causing it to run into a liquid mass, which may be stirred with a species of hoe (or *rake* without teeth), skimming off the film of oxides which rise to the surface, and thus preparing it for "toughening." The cinders raked off are red, foliated, very dense, and contain, evidently, much dinoxide of copper. A sample of the metal withdrawn at this period, will be found brittle and "dry," that is, destitute of the fibrous texture which indicates extensibility; the color is of that deep red which borders on purple, and which indicates a considerable intermixture of dinoxide, passing into protoxide. The "grain" is then coarse, open, and semi-crystalline. Besides these indications that the refining process has been sufficiently prolonged, a quantity may be taken out in a ladle and allowed to cool. When it congeals or "sets," it ought to present a pure red face. If it become black and slobby, the refining is to be still further prosecuted.

In some manufactories, the action of an air furnace for oxygenating the impurities of copper, during the refining process, is aided by one or two powerful bellows, which, as soon as the copper is melted, are set in action, and continue to direct a strong blast obliquely downwards on the surface of the copper during the continuance of refining. The blast oxidizes the *lead, nickel, cobalt, iron, or arsenic*, which may chance to be present, together with a small quantity of the copper. While the bellows are in motion, and the temperature is very elevated, there occurs, near the conclusion of the refining process, a very peculiar appearance of boiling, which causes the projection upwards, of small drops of metal. This appearance seems to be due to the escape of one or more of the volatilizable metals, which can be sublimed only at a temperature considerably above the melting point of copper. This appearance is a favorable indication, and not until it ceases does the refiner think proper to commence proving the copper, by means of the "mon tres," or test specimens already referred to.

Subsequent to refining is performed the process of "*toughening*," the necessity of which will be understood when we consider that the high temperature required to volatilize arsenic, antimony, zinc, &c., causes the formation of some oxide of copper and of the other metals which remain in minute portions, such as iron, tin, and lead. If not separated during the refining, these oxides must be reduced to the metallic state, by presenting to the mixture while in fusion some re-agent which has a higher affinity for oxygen than the metals in question. The re-agent adopted is either *carbon* derived from the charcoal with which the melted copper is completely covered, or *carbon combined with hydrogen*, supplied from the rods of wood with which the fluid is stirred during the process called *poling*. This brings the dry, semi-crystalline, dark-purple, copper to its proper consistence, brightness, and fine, close

texture, silky fracture, and light-red color. A small quantity taken out and cast in a mould will then bear forging while still red-hot. Its softness under the hammer, its freedom from cracks on the edges, and its easy pliability, are all indications that the toughening is completed, after which the copper is drawn off or ladled out, and cast into moulds of the required forms.

When pig copper contains much iron, the oxidation of the latter is effected with some difficulty. To facilitate this operation a few pounds of lead are sometimes added.

M. Frerejean, of Vienne, in Dauphiny, has ascertained that "too low a temperature, or too much charcoal employed in toughening copper, gives to the metal a cubical structure, or one possessing divergent rays; in both cases interfering with its tenacity. Too high a temperature, too rapid a supply of oxygen, or what is the same thing, the absence of the requisite quantity of charcoal, gives it a brick-red color, a radiated crystallization without lustre, or a very fine grain, without determinate form."

This is unsuitable for copper to be worked under the hammer, by the rolls, or more especially by the wire plate. The form which indicates most tenacity is radiated with minute fibres glistening in mass. Melted copper will pass from the *cubical* through the *amorphous* grain to the *glistening fibrous* structure sometimes in the course of ten minutes. This involves the necessity of great care in seizing the proper moment to arrest the process. When overpoled, copper withdrawn, and cooled in a ladle, will be found to shoot up into cones sometimes several inches high.

M. Mushet has examined with much care the fusion and appearance of refined and of unrefined copper. His object was to ascertain what would be the effect of retaining the tin and lead, discharged in refining copper, upon the strength and malleability of the latter metal.

Rough "shotted" copper (unrefined) melted in a black lead crucible with charcoal, and poured into an open iron mould, possessed a crystallized structure with converging striæ and a pale color inclining to gray. Bars cast as above, when remelted and poured at the moment of putting on a creamy appearance, exhibited a degree of toughening and more of the true aspect of copper.

Pure (refined) shotted copper melted in a crucible with an equal bulk of charcoal, afforded an ingot with striæ from circumference to centre, brittle and unfit for rolling; but when another portion of the same copper, melted in the same way, was poured into a mould at the moment when it was just ready to set, it gave a bar with little or no crystalline structure, but having far more of the granular texture and peculiar light-red or orange-tint which belongs to pure metallic copper, as seen in galvanotype samples.

This result, in regard to casting copper hot and cold, accords with my experiments on tin cast in the two modes referred to; that is, in the one case cast at a red heat into a hot mould, and in the other at a temperature but little above the congealing point, into a mould at the ordinary temperature of the air. The former produces in the tin a crystalline structure, and a low degree of tenacity; the latter gives an amorphous structure and a tenacity much exceeding that of the hot cast bars.\*

One of the bars procured by Mr. Mushet in each of the four modes above mentioned, was exposed in burnt lime, within the same crucible, to a heat of

\* See Journal of the Academy of Natural Sciences, vol. VII., page 200.

cementation. This opened the grain, diminished the density, but did not alter the internal arrangement of particles. It increased the softness of the copper. In subsequent trials the unrefined metal was exposed to a slower fusion and longer action of charcoal, and the effect was, that, the more protracted was the exposure, the more yellow and refined did the copper become.

The effect of cementation, as above described, may probably be accounted for by supposing that before cementation some portion of oxide of copper remained unreduced and diffused throughout the mass, which by that treatment was gradually reduced to the metallic state.

Attempts were made to roll the bars produced from both kinds of copper by the above described treatment, but in neither case was the result satisfactory. From this M. Mushet concluded that English copper can not be relied on to produce from the crucible copper which can be rolled, while he asserts that Swedish and Russian copper can be cast from large crucibles into cakes or thick sheets, and then rolled into boiler plates. This, he states, is due to the fact that English copper crystallizes when cast from the crucible, but that Swedish and Russian copper becomes granular and malleable. On the above subject may be consulted volume vi., of the *Philosophical Magazine*, 3d series, page 324.

I will, however, refer to some results of experiments made in this country, which seem to render the inference respecting a difference between English and Swedish copper at least doubtful.

Mr. Joseph Saxton, of the United States' Mint, at Philadelphia, has given me samples of two specimens of copper cast from the crucible into ingot moulds and then subjected to rolling. Both were produced by melting up scraps of galvanotype deposits, and were, of course, chemically pure copper. In melting them no charcoal had been put into the crucibles. In attempting to roll one of the ingots at a full red heat, it cracked all along the edges, and also peeled asunder or expoliated in the middle for nearly the whole extent, making the two bars nearly the same length and breadth as the original ingot, but of half its thickness. The interior parting showed a highly granular or crystalloid structure, and the surfaces which had been in contact with the rolls were marked all over with the projections and depressions like those of a crystallized surface with numerous summits rising above the general level.

From the foregoing description of the art of refining copper, and of the several stages through which the metal passes—from that of a bright, granular, crystalline, metallic mass, incapable of lamination, to that of a fibrous, tough, malleable, and ductile solid, and thence to the condition of a dull red compound of pure copper and metallic oxides,—will be easily understood the remarkable difference in condition of the copper in the bolt above mentioned, before and after it had been melted down in a crucible, with charcoal. When unskilfully refined and toughened, the oxygenation of copper alone may give it much of the appearance presented by that specimen. But, if any considerable quantity, say three or four per cent., of other metals, *not reduced to the reguline state*, have been left by the refining process, these, together with the oxide of copper, are abundantly sufficient to change the mechanical properties of the copper. It seems probable that the entire absence of oxide of copper, by giving the metal power to assume the crystalline form (which it does when the toughening or poling process has been carried to an excess), may be the cause of the defect which has sometimes been ascribed to carbon, imagined to be combined with the copper in that

process. In this view I am confirmed by the experiment of Mr. Saxton, in which chemically pure copper, melted without charcoal, gave a similar structure and character.

As it has been my object to embrace in this first part of my report the facts which have been observed relative to the properties of copper, I would beg leave to subjoin the following citations as pertinent to this part of the subject.

In Paris's life of Sir Humphrey Davy, we find several interesting and important facts relative to the action of sea-water on copper.

The copper from the Batavia and Plymouth yacht, which had remained perfect for 27 years, was found to be alloyed—the former with  $\frac{1}{10}$  part of zinc, and the latter with the same proportion of tin.

The copper on the Tartar's bottom, which was destroyed in four years, was, on the contrary, found very pure.

Alloys of copper are generally more durable than unmixed metal; the only objection to them for sheathing being their stiffness and brittleness.

When copper is acted on by salt water, especially at rest, a grass green precipitate is formed above the water's edge, and on it is deposited a carbonate of soda.

Davey regarded the green precipitate as a hydrated submuriate (dichloride) of copper.

The electric relation of copper to other bodies is weakly positive, and as it can only act on sea water when in the positive state, any treatment rendering it slightly negative, is sufficient to prevent its action. This was the effect of the protectors of Davy, which were pieces of zinc or iron placed in contact with the copper under water, receiving the whole action of the latter, and undergoing corrosion even more rapidly in the liquid, than they would have done if not in contact with copper.

The most active salt in sea water is the muriate of magnesia which it contains. According to Lagrange and Vogel's analysis, this salt enters into sea water in the proportion of one third of one per cent.; and in this they are sustained by Murray; while Mariet makes it a little over one half per cent.

The Carnbrea, a vessel of 600 tons, was furnished with four of Davy's protectors, two on the stern and two on the bows, together equal to  $\frac{1}{10}$  of the surface of her copper. After a voyage of 12 months to Calcutta and back, she entered the Thames perfectly bright and almost polished; the wear of copper appeared to be no greater than that due to *mechanical* causes.

A common cause of the failure of Davy's invention, was the over protection afforded to copper by rendering it so highly electro-negative, that action enough did not take place between the metal and the water to cause the sea-weeds and shells to fall off after having attached themselves to the vessel.

When iron protectors were employed, the oxide of that metal adhering to the copper, afforded a support to the sea-weeds and shells. In a case where zinc protectors were used, the vessel after two voyages to the West Indies and one to Quebec, returned perfectly clean.

The first vessel ever coppered was the Alarm frigate, in 1761. She was uncoppered in 1763, when all her iron fastenings, pintles, braces, &c., were found much corroded, and the false keel had been lost from the corrosion of its bolts and staples, which were of iron.

Thus the very first ship ever coppered, exhibited in all its force the voltaic

action, of which, however, the name and nature were unknown for more than thirty years afterward.

In regard to the causes of the reaction of sea water on copper, Davy established several interesting points especially connected with the electrochemical relations of different samples of copper to each other.

1. Copper hardened by hammering, is negative to rolled copper.
2. Copper over-poled and under-poled: the former supposed to contain a little carbon, and the latter a little oxide of copper, are both negative to pure copper.
3. A specimen of brittle copper, in which no impurity was detected, proved negative to pure copper.
4. When oxygen becomes distributed even in patches through a mass of copper, it will render those parts soft and incapable of resisting salt water.

5. A number of the sheets made from a given charge of metal in the same furnace, and manufactured under precisely similar circumstances, may be affected by corrosion, while the remainder continues perfectly sound.

6. Nails for fastening on sheathing are ordinarily composed of copper and tin, and are slightly negative to pure copper. On these the first impurities adhere. This effect would probably be prevented by forming the nails of a slightly positive and corrodible composition.

7. When a piece of sheet copper, containing 60 square inches on the two sides, had a mass of zinc, 0.2 inch in diameter, soldered to one end, and was plunged in sea-water, and when another equal piece was similarly protected with iron, and a third equal sheet of undefended copper, were immersed in the same, the last gave a large quantity of green precipitate, while, in both cases, the defended or "protected" copper underwent no change, and remained bright.

Von Beek, of Utrecht, has given\* some experiments on the action of sea-water on copper. He placed a plate of copper in one vessel of sea-water, and a plate of iron in another, with a platina wire between them and a syphon to connect the fluids. This arrangement completely preserved the copper. After 47 days the wire was cut, but even then no action took place between the water and the copper. After 4 days the syphon also was withdrawn, but the copper still remained intact. The water containing the copper, had the power to oxidate other copper, and the copper to be corroded by other portions of sea-water, but *that* copper and *that* sea-water did not react on each other.

In another experiment he proved that the preserving action of the water toward copper required *time*; for, having allowed a shorter time to elapse before cutting the wire, the copper was afterward found to oxydate.

In the volume of the American Journal of Science, just cited, page 180, is an account given by Dr. John Revere, of his method of sheathing ships. The substance of this paper was communicated to the Historical Society of New York, March 17, 1829. His experiments on some of the samples of iron exhibited, were commenced June 14, 1827. The object of his invention is to employ sheet iron instead of copper for sheathing ships, protecting it from corrosion by the agency of zinc. It is not known what exten-

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\* Silliman's Journal, volume XIV., page 263.

sion has been given to this method of preserving *iron* on ships' bottoms, though the process of "galvanizing" iron for other purposes has, in the mean time, received a pretty wide application.

In Silliman's *Journal* for October, 1833, page 203, is a letter from Capt. A. Scott, in relation to the inferior durability of sheathing-copper now, to what it was in former years. This he attributed to the use of copper bolts, instead of the iron ones formerly used.

He relates an experiment which he had witnessed at Rotterdam. A long strip of copper was immersed, by successive bends, or "bights," in several successive vessels of sea-water. At one end was a bit of iron soldered to the copper, and in all the vessels cotton was wound round the strip of copper at the level of the water.

After an immersion of six months, the jar containing that end of the copper to which the bit of iron was riveted, was tinged *red*; manifesting the presence of oxide of iron. In the second was a slight tinge of *blue*; in the third, *green*; in the fourth, *dark olive*; in the fifth, and last, *black*. This series of colors shows that the solution of copper was the greater in proportion to its distance from the bit of iron, which seemed to have completely protected the copper in its immediate vicinity. The reason of the increased corrosion is doubtless to be sought in the diminished protection in all after the first jar. The electrical excitement produced in the jar containing the protector was unfelt, to a great degree, in the successive vessels; and in the last the copper was nearly in the same condition in which it would have been had the whole of the strip been in one jar, with no other metal attached.

It has been stated to me, by an officer of the American navy, that he had examined the chain-cables with which light boats are moored in some of our bays, and had found that at the part in the immediate vicinity of the hawsehole, which was lined with copper, the chain was, for the distance of a few fathoms, corroded into long fibrous strings, while the more remote parts of the chain were apparently unaffected. This observation indicates an effect on the iron the reverse of that produced on copper in the experiment at Rotterdam. The energy of action on copper was greater at the greater distance from the iron; on iron it was less at the greater distance, because that part of the chain was negative with respect to the part which touched the copper, and which by that contact became electro-positive.

In regard to the protection of copper by iron, I may cite from volume 4, page 275, of the *Mechanics' Magazine*, some facts proving the efficacy of Sir H. Davy's method of protecting the copper of ships by electro-chemical action.

In addition to the Carnbrea Castle, already cited, the cases mentioned are those of the *Elizabeth* yacht, the ships *Huskison*, *Elizabeth*, *Dee*, and *Dorothy*, in all which the copper had been effectually preserved by covering from *one ninetyeth* to *one hundred and twenty-fifth* part of its surface along the keel with bars of iron. When the relation of the surface of the protectors to that of the copper was as high as *one seventieth*, the latter was over-protected, so that some barnacles then adhered. More adhered on the windward than on the leeward side of the bottom, as determined by some of these vessels having sailed for weeks together on the same general course, and with the wind from the same quarter.

Davy found from  $\frac{1}{100}$  to  $\frac{1}{200}$  the best proportion of iron surface to that of copper. In the 6th volume, 3d series, of the *Philosophical Magazine*,

is a paper, by Mr. David Mushet, on testing the relative durability of refined and unrefined copper, by immersion in muriatic acid.

Small quantities, presenting nearly equal surfaces of the two kinds, were separately immersed in equal weights of muriatic acid.

After forty-eight hours, the acid was poured off, the specimens washed, and thoroughly dried.

The pure "shotted" copper, from which brass is made, was found to have lost  $5\frac{1}{2}$  per cent., while the unrefined metal appeared to have gained  $\frac{1}{2}$  per cent., which was attributed to moisture not completely expelled after immersion in acid.

Mr. Mushet mixed six ounces of unrefined copper with three times their bulk of charcoal, and exposed the mixture for six hours to a high heat of cementation.

The flakes of metal were found surrounded by charcoal, and welded together without having undergone fusion. The mass was soft, and extremely flexible.

Six ounces of pure shotted copper, treated in the same manner, did not produce any adhesion of the masses. The beads were slightly cracked; indicating incipient fusion.

Both of these results were afterward melted down with charcoal, and run into iron moulds. The unrefined copper, when cold, was strongest and toughest, cut easily with the knife, and in color and general appearance, resembled Swedish copper. A piece was flattened out thin, for immersion in acid. The pure copper was melted at a rather higher temperature than the preceding, and though poured at a low temperature, was crystalline throughout. Its surface and fracture were of a red color, the body weak, and tearing into pieces. Fragments were cut and flattened out for immersion in acid.

Two samples of the refined, and two of the unrefined copper, were placed separately in muriatic acid.

Sample No. 1, weighed 53 grains	}	Refined copper.
" No. 2, " 30 "		
" No. 3, " 39 $\frac{1}{2}$ "	}	Unrefined metal.
" No. 4, " 42 "		

In 48 hours, the sample had lost as follows, viz :

No. 1, 25.4 per cent.

No. 2, 61.6 "

No. 3, 50 "

No. 4, 8 $\frac{1}{2}$  "

This proves, that the *refined* copper was, on the average, 42.1 per cent. more liable to corrosion in muriatic acid, than that which was unrefined. It is probable that, in the unrefined state, copper retains a large portion of the foreign ingredients in the state of oxides, which, by the treatment with charcoal, were reduced to the reguline or metallic state, and thereby converted the copper into a true alloy, in which condition, as already proved, it is less liable to be attacked by acids than when in perfect purity.

Two other sets of comparative trials were made—the one extending to six, and the other to seven days. In the first—

The refined copper lost 46.2 per cent.

The unrefined copper lost 29.3 "

Showing a difference of 16.9 "

or 57.6 per cent. more corrosion of the refined than of the unrefined metal.



In the second comparison—

The refined copper lost, in seven days, 45 per cent.

The unrefined “ “ “ 17 “

showing 164.7 per cent. more corrosion of the refined than the unrefined metal.

Mr. Mushet formed a bar of alloy by casting together 2,880 grains of pure copper and 84 grains or 3 per cent. of tin, and on a sample of this compound made trial of muriatic acid for seven days, during which it lost 16.4 per cent., and during five weeks it lost but 38.5 per cent.

Now, as pure copper lost in one week by the two experiments above cited 46.2 and 45 per cent., or at a mean 45.6 per cent., it is evident that tin in the proportion of 3 per cent. had an effect in retarding corrosion, represented by  $45.6 - 16.4 = 29.2$ , which latter number, compared with 45.6, gives the *protecting power* of this quantity of tin equal to 64 per cent. of the loss of pure copper.

These trials on copper simply cemented but not subsequently wrought, are, however, hardly to be adopted as evidences of the advantage which could be expected from attempting to manufacture unrefined copper for the purposes of sheathing. The necessary manipulations subject the plates to no little exposure to oxydation; and as it is known that several of the impurities, such as iron, lead, tin, antimony, &c., become oxygenated more readily than copper, the mass would of course soon cease to be a true alloy of metals, and become a mixture of copper and the oxides of other metals together, with more or less oxide of copper.

Sir H. Davy has expressed the opinion, in view, no doubt, of the employment of his principle of *protection*, that copper used for sheathing should be the purest that can be obtained, and, in being applied to the ship, its surface should be preserved as smooth and equable as possible, and the nails used for fastening should be likewise of pure copper. A little difference in their shape and thickness will compensate for the want of that hardness which is considered of so much advantage in the composition nails.\*

Permit me to add to the foregoing remarks that I have now prepared and ready for verification a set of instruments and tests of the several kinds referred to in the preceding pages, and that in a second part or sequel to this report I propose to offer the results of such verifications and trials as I shall be enabled to make, together with descriptions of the apparatus and drawings to illustrate the construction and application of the same. To this will be added the chemical precepts relative to copper and its impurities, which may be found serviceable in deciding cases which may admit of doubt when examined by mechanical methods. The character of several alloys of copper applicable to naval purposes will deserve attention; and the liability of the latter, as well as of pure copper, to undergo rapid deterioration when exposed to the action of water in certain harbors, roadsteads, or navy-yards, owing to the peculiar nature of the ground, will lead to the suggestion of certain forms of protectors to be used either at sea or in port. Connected as these subjects are with the preservation and efficiency of the navy, it is believed that a full and minute examination of every point and bearing of the subject will alone comport with the economy which ought to direct the selection and use of every material employed in its service.

I have the honor to subscribe myself, very respectfully, your obedient servant,

WALTER R. JOHNSON.

Hon. A. P. UPSHUR, *Secretary of the Navy, Washington.*

\* See Report of Patented Inventions for 1826, vol. ii, page 417.

No. 12.

DR.

*Suppression of the slave-trade under act of March 3, 1819.*

CR.

[ 1 ]

1842. Aug. 4	To amount appropriated - -	\$10,543 42	1842. Aug. 25	By amount paid W. B. Scott, navy agent at Washington, on settlement of his accounts - -	\$32 60
			Sept. 7	Paid J. H. Duvall, late marshal of Florida, for expenses incurred for recaptured Africans and for per diem for himself - -	1,133 46
			Sept. 7	Paid Rev. Wm. McLain, for salary due to estate of 'Thos. Buchanan, late agent on the coast of Africa -	1,389 04
				By balance in the Treasury -	7,998 32
		<u>10,543 42</u>			<u>10,543 42</u>
Oct. 1	To balance in the Treasury -	\$7,998 32			

720