THE

MERCHANTS' MAGAZINE

AND

COMMERCIAL REVIEW.

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THE PREVAILING COMMERCIAL DEPRESSION.

Complaints are universal of the stagnation and the unprofitableness of business. A spring season so depressed and generally unsatisfactory as the present is hardly within the memory of our city merchants. The trade of the interior is generally reported dull and unpromising. Although the South has realized upon a large portion of its cotton crop, it is found devoid of trading spirit, and even unable to liquidate much of its indebtedness on account of last year's purchases. In the Western States merchants complain of unusual difficulty in making their collections, and have on hand a heavy balance of fall stock; the result being that their obligations to the Atlantic cities, in many cases, have to be renewed for 30 to 60 days. The New England cotton mills find the demand for goods so limited, compared with their production, that at the beginning of this month some of the manufacturers made a still further curtailment of their time of running. The woolen trade, now one of our most extensive industries, although it recently diminished its aggregate production probably quite 20 per cent., finds little relief from the reduced supply of goods, and manufacturers have to sell a large amount of their products at a discount from cost. In the leather and iron trades similar complaints prevail; and, indeed, it would be difficult to find an important exception to the common stagnation.

This condition of affairs must be regarded as, to some extent, a natural reaction from the remarkable activity of trade immediately succeeding the close of the war. For the first twelve months after peace all the markets exhibited an extreme buoyancy. Producers took no care about the probable permanency of this activity, but strained every resource for meeting the unexpectedly brisk demand, all flattering themselves that this was but an evidence of the wonderfully recuperative energy of our commerce. It turned out, however, that the large trade of 1865-6 was but a feverish impulse, inspired by hopes natural enough, but more sanguine than reasonable; and we now witness a general prostration as the result, partially, of the overstrained production of manufactures.

The more potent causes of the prevailing depression, however, lie deeper. We are in the midst of a process of recovery from the derangements incidental to the war; and the recuperation is much more painful than was the growth of the disease. When, from the rise in the gold premium and the steadily-growing scarcity of products, prices and wages were rapidly advancing, all flattered themselves upon their rapid gains, and deemed war a singularly prosperous game, never for a moment dreaming that the pleasing prosperity was altogether fictitious—the hallucination of a disease. Soon after the war ceased the unhealthy stimulus was withdrawn, and the self-curative tendencies of commerce began to assert their force. The gold premium had to decline, if we would ever return to a safe business basis; and the processes of supply and demand, in respect to products, had to be restored to their normal relation to each other, in order that the ordinary range of values might be recovered. The first thing to be anticipated was a curtailment of consumption, from the inability of the people to purchase at the prevailing high prices. The result of that process must be a steady gain of supply upon demand; and the result of that a loss to producers and to merchants upon their stocks, especially of merchandise. These losses, again, have a tendency to enforce a contraction in the consumption of the classes employing their capital in trade and manufactures; while they have also caused a certain amount of labor to be thrown out of employment, which has necessitated a still further curtailment in the consumption of the working classes. We are now in the midst of the operation of these processes; and their effect is apparent in the general lack of profit upon producing or trading operations, and a consequent curtailment in the amount of capital thus employed.

But while this process of reaction from high prices must be regarded as the chief cause of the existing commercial depression, yet cotemporaneous circumstances have materially aggravated the derangements. Taxation has pressedwith extreme severity upon the trade and production of the country, on the one hand lessening the profits of the manufacturer, and on the other, diminishing the purchases of consumers. In many instances the taxes, by—as we have heretofore shown—injudicious methods of impost, have driven capital from employments hitherto profitable; while the constant changes in the distribution of taxation have beset some branches of business with discouraging uncertainties. Again, the close of the war has naturally raised in Congress many fundamental measures of legislation, the discussion of which has developed differences of opinion and political animosities, which have been regarded by merchants

as involving contingencies vitally affecting the prospects of trade. Questions of reconstruction, of impeachment, of tariff, of internal revenue, of banking, of currency and currency contraction, have been raised and earnestly discussed at Washington; but upon no one of these weighty issues has any definite conclusion been reached. A protracted suspense as to the settlement of so many grave questions cannot but prove an important source of disturbance to business operations. Whilst so much remains undetermined, upon matters which directly affect the conditions of production and distribution, the only alternative presented to capitalists is employing their means at a blind venture, or remaining idle; and in many cases they choose the latter. We are not disposed to attach to Congress any undue responsibility in this matter. It must be conceded that some of these questions required to be raised at the time they have been, and were too weighty to be disposed of hastily; their discussion, however, has been needlessly protracted by partisan harangues and party schemes; and the commercial interests of the country feel sorely aggrieved that their convenience should have been disregarded in keeping open disturbing issues longer than is necessary from such unworthy considerations. The present demoralized condition of the trade of the whole country appeals loudly to Congress for moderation and despatch in the settlement of these momentous measures.

Certain movements among the operative classes have in no trifling measure helped to aggravate the embarrassments connected with the present reactionary period. It would appear to be very obviously to the interest of the working classes that they should offer no unnecessary resistance to a process resulting in the fall of prices. No class suffers so severely from high prices, and none would be so largely benefitted by a fall in values. As, however, labor constitutes almost the exclusive cost of products, it is clear that unless producers will consent to be constantly losing on their business, by paying more for labor than they get for products, the laborer must consent to a steady reduction of pay, waiting for compensation in the subsequent decline of prices. This requirement, however, is steadily resisted by the workmen; who quote existing prices as an evidence that they cannot afford to work for less. To make this resistance more effective they are combined in organizations embracing every branch of trade, and extending throughout the country. The trade associations dictate the terms upon which each member shall work, and this unanimous resistance prevents that steady process of yielding by individual workmen which would otherwise effect a gradual adjustment of the labor market to the downward tendency in prices. Many operatives are thus unnecessarily thrown out of employment; but, as the associations support them, and virtually keep their labor out of the market, those who remain in employ can, for a time, keep up their wages; and in this way the general reduction is temporarily staved off. The effect of this combined movement of the working classes is more disastrous than may appear at first sight, and should be resisted by capitalists. It involves manufacturers in unnecessary losses, without any compensating advantage to the operatives at large; while, by keeping a large proportion of the productive power of the country idle, it tends to keep up the comparative scarcity of commodities and helps to protract the period of high prices. It impedes the free operation of individual interest, and creates a large amount of sacrifice and suffering for no adequate purpose.

Such, then, are some of the principal causes for the unusual depression of trade at present existing, and it only remains for us now to consider how far this commercial situation is susceptible of remedy from legislative measures.

At the outset we should remember that the present condition of affairs is the consequence of events now past, and can only be remedied by operating on the source or seat of the disease and not directly on its results. If we can help to relieve the present feverish uncertainty, and infuse a healthy confidence among the people; if we can give to capital security in every part of the country so that it may be employed more largely in production and the development of our exhaustless resources, trade will be no longer, as it is now, a mere game of chance, but new life will at once be developed, and influences be brought into play which in time will bring us through all our present difficulties.

And here we are met by the anomalous circumstance that there are now ten millions of our population whose federalstatus is undetermined. Before the war that portion of our people contributed two thirds of the products by which we were enabled to pay for our large importations; and their purchases in the Northern markets took off fully one-third of our supplies of domestic and foreign merchandise. The lands and the labor which produced the cotton and rice crops and which formed the basis of our large Southern trade still remain, but the capital necessary for rendering them jointly productive is wanting; the consequence is that the process of industrial recuperation in that section is impeded, and, instead of a gradual accumulation of wealth, the people are suffering from a lack of necessary commodities, and our Southern trade is merely nominal. Northern capital waits to seek investment in the lands, the railroads and the factories of the South; but very naturally halts until it is apparent what is to be the future relation of the seceded States to the central Government. Virtually, therefore, the failure of Congress and the President to agree upon a plan of reconstruction keeps the whole machinery of Southern commerce stagnant, by causing the withholding of the funds which constitute the motive power of industry. Every day that a practicable measure of rehabilitation is postponed augments the sufferings of the Southern people, and diminishes the probabilities that the merchants of that section will be able to liquidate their obligations to the North. There is consequently the most imperative commercial necessity that the discussion of this question should be no longer protracted. The mercantile interest requires that the issue be settled promptly and permanently, and upon a basis which will command the confidence of capitalists; and a new spirit of enterprise would at once be diffused throughout the trade of the country. The migration of Northern capital Southward would call for new supplies of goods, machinery and implements, which in due time would contribute largely to the national supply of products, and help forward the process of general recuperation.

The measure which has this week been passed by Congress and now awaits the President's signature or veto, shows that these ideas are now exerting an influence. We do not care todiscuss the merits or demerits of the present act, but trust that the decision of the President will be communicated to Congress before its adjournment; and if a disagreement is found to exist between the legislative and executive branches of the Gov-

ernment, that some arrangement will be made so that they may work harmoniously on this great question, and the nation once again be allowed peace and rest from this wearing strife.

But this is not the only question that needs settlement. Our foreign trade is seriously hampered by the protracted uncertainty which has for months existed as to the future duties upon imported merchandise, unsettling the values of foreign goods, and by sympathy of domestic also. The tariff measure is held in suspense just at the opening of the Spring trade; and as the value of many kinds of goods will be affected to the extent of 10@15 per cent by its provisions, there is naturally a postponement of operations, with inconvenience to all parties. In the present generally disturbed condition of affairs this matter is of the most vital consequence to men of business, and there is a universal anxiety that the tariff question be concluded at once. Among the mercantile classes and the importers the complaint is not so much against the general character of the proposed changes; for upon this point there appears to be a significant indifference among all, except a few manufacturers and producers (a willingness we suppose to submit to the burden for the sake of the experience the nation will thus receive); but it is that the question has been kept open so long as to seriously impede business; and what is asked of Congress is not so much that it be settled n anyi particular way, but that it *be settled promptly*.

Then, again, the extreme severity of Federal taxation is a most active cause of the prevailing depression, and one which Congress should show more disposition to alleviate. With the exception of the Hon. Justin S. Morrill, we do not remember any member of either House to have enforced upon Congress the obvious necessity for a liberal reduction of the expenditures of the Government. The ease with which revenue is raised begets an indifference about expenditures, and large sums are voted away apparently without any thought for the consequent drain upon the pockets of the people; instance, the bounties' bill, proposing an addition to the debt estimated at $75,000,000 to $200,000,000. It is true that a curtailment of some branches of internal revenue is proposed; but it is sought to compensate for the consequent loss of income by increasing the revenue from imports. What the country desires and vitally needs is not a seeming reduction of revenue, but a very material curtailment of expenditures, a thorough retrenchment in every branch of the public service, to be followed by a simplification of our revenue system, so as to supply the exchequer from the fewest possible sources, and thereby relieve industry and trade of much unnecessary annoyance and embarrassment. True, measures of that character have been talked of by Mr. Wells, and the Committee on Ways and Means, but almost nothing is proposed to be done immediately, and little can be done while new expenses and debts are being incurred. The most unsatisfactory aspect of the case is that our Legislators do not appreciate the necessity for prompt action in this direction; and in the meantime trade is left to struggle and languish under wholly unnecessary burdens. Even State and city governments seem to be launching into extravagances. Appropriations are made, cities and towns are bonded with a freedom which would never have been for a moment allowed previous to the war, and all this in the face of the fact that we are already suffering under our accumulated taxes. This certainly should be stopped; a system of rigid economy be at once adopted, and a thorough reconstruction of our tax system effected if we would seek to revivify the industries of the country.

Finally, it is essential to the recovery of confidence that Congress should arrive at a definite policy upon the questions of currency and banking; and that such policy should not be changed. At present the public is in doubt whether the Secretary of the Treasury is to continue contracting the volume of the currency, or his authorization for so doing is to be suspended; whether a provision is to be made for withdrawing the compound notes without deranging the banking reserves; whether the whole national bank circulation is to be displaced by United States legal tender notes, and whether the sales of gold by the Treasury are to be regulated by Congressional instructions. Uncertainty upon questions so directly affecting the value of gold and of prices generally, and having such a direct bearing upon banking operations, has a very demoralizing effect upon the trade of the country. Some, and we trust all, of these issues may be settled before the close of the session; and that none will stand over to the succeeding sitting of Congress.

Beyond the settlement of these numerous open questions legislation cannot be expected to afford any alleviation of the prevailing derangements of trade. Relief upon these points would, however, infuse new life into commerce; and for the rest, all may safely be left to self-curative tendencies. The broad fields, the vast forests, and the rich mines of the country still remain; and capital and labor in abundance await to utilize these resources. Let every legislative hindrance to enterprise be removed and wealth will again steadily accumulate, confidence will recover its wonted steadiness, and we shall prove to the world that our ability to sustain a great war is equalled only by the rapidity of our recuperation from its exhaustive effects.

HOW TO PAY THE VIRGINIA STATE DEBT.

BY A VIRGINIA TAXPAYER.

What scheme can be adopted to meet the just obligations of the State without impairing her good faith to her creditors, which at every cost should be preserved?

If the State pay all that she *justly owes*, it is all that can be asked by her creditors; and in view of her present poverty, if she decline to pay more, no complaint can be made against her; and in assuming such a position she neither proposed to *scale* or *repudiate* any portion of her honest debts.

The debt of the State as reported by the auditor of public accounts, exclusive of unpaid interest, in round numbers is *thirty-five millions* of dollars. Does the present State of Virginia owe this entire debt? It was created mainly for Internal Improvements, when the State embraced not only its present territory but also that of West Virginia. In the language of your able auditor "the debt of the State was contracted while West Virginia formed an integral part of it; and by the votes of her delegates in the General Assembly, West Virginia contributed not a little to its creation; and hence she stands this day as sacredly bound for its payments as if she had never dissolved her connection with this State. She can claim no juster exemption from its obligations than

could an individual by retiring from an embarrassed co-partnership claim thereby to be exempted from the payment of his portion of its liabilities."

Besides, West Virginia after having voted for the appropriations creating this debt, can with no propriety, say that as these improvements are not within her territory, therefore she should not pay her equitable proportion of the debt. With much more reason can the counties along seaboard and rivers, and within whose limits there is not a foot of turnpike, plank road, railway or canal, and whose delegates opposed these appropriations, say that they should not be taxed to pay the State's debt.

By reference to the map of the State you will find, even omitting the appropriations for turnpikes and canals within the limits of West Virginia, that of the entire debt of the State $35,000,000, an aggregate of $25,000,000 has been expended in subscriptions and loans to railways and canals running westward, and whose termini were to be, either contiguous to or within the territory of present West Virginia, thereby in the future enuring as much to her benefit as to that of Virginia. Again, of the entire liability of the State of say $2,000,000, as the guarantor of internal improvements bonds, $1,500,000 of these bonds were for the railroads and canals above referred to. Therefore West Virginia cannot claim that she should not pay her proportion of the State's debt. For her to do so, would be as reasonable as if, in the case of two farmers living on adjoining plantations and needing a common road to mill, the one living more remote from mill should demand of his neighbour next to the mill that he should build the road from the mill across his plantation at his exclusive expense, although designed to be used in common by the two. It therefore appears plain that West Virginia honestly owes a certain portion of the State debt, and the most equitable basis of settlement would seem to be the relative *area, population* and *property* of the two States, by the census of 1860.

Your auditor reports that "*one-third* of the whole population of the State in 1860, nearly *one half* of its territory, and about 22 *per cent.* of the value of its real estate are now included in West Virginia." Assuming therefore that *one-third* of the debt is a proper proportion for that State to pay, and *two thirds* for this State, this scheme appears feasible: Let this State issue a circular to its creditors, reciting the facts of her loss of territory during the war; of the obligation of West Virginia to assume her proportion of the debt; of her losses incident to the war—the one item of loss of her slave property amounting to $236,323,500, besides the losses in personal property, bank and other stocks, involving many millions; and her loss in productive white labor resulting from the death, disease and maiming of the flower of the State, during the war. And then, on the basis of these facts propose to them, that if they will surrender their bonds, she will issue new bonds for *seventy per cent.* of the old, and commence in July next the payment of 6 per cent. interest on same, giving to the creditor a certificate that he has thereby relinquished *thirty per cent.* of his debt, which he may hold as an evidence of claim against West Virginia, to be prosecuted by him or not as he may elect—but relinquishing all further claim against this State. We think that in this proposition the State would assume the full measure of her separate obligation for the debt, and that therefore no stigma could be cast upon her plighted faith.

The next question is, would the creditor accept the proposition, on due consideration of his interests? We think he would—bearing in mind that the proposition is coupled with the promise of the State to pay 6 per cent. interest on these new bonds commencing July next.

Registered bonds of the State are now selling at 31 cents; that is to say a $100 bond will bring in the market $31. These bonds have steadily declined in value and probably will not improve until the payment of interest is resumed. By this scheme, the creditor would receive for his $100 bond, a new bond for $70. It is safe to say that under the resumption of interest, this new bond would, in the financial centres of this country and Europe, sell as high as Tennessee bonds. The debt of that State is now $30,000,000, and her bonds before the war sold below those of Virginia, and at its close were for months at about the same price as the Virginia bonds—but Tennessee having paid her interest in July last, and again the 1st inst., her bonds have averaged 70 per cent. for the past six months: therefore concluding that these new Virginia bonds will command 70 per cent., the $70 bond would bring $49, instead of $31 the present market value of a $100 bond: and the difference of $18 or nearly 60 per cent. would be actual profit realized by the bond holder by the exchange. Would he therefore hesitate to accept this proposition, even if he should receive nothing from West Virginia? This, however, we assume would not be the result.

The thirty per cent. upon the whole debt, says:

Bonded debt	$25,000,000
Unpaid back interest	9,000,000
Total	$44,000,000

would involve a claim of $13,000,000 against West Virginia. The large bond holders would hold their claims, the smaller ones would sell out to them, and in a short time, the entire claim would be concentrated in the hands of a few, who with the aid of local and political influence and the ablest counsel before the Legislature of West Virginia, would probably secure the speediest and surest recognition of their claim founded both in law and equity; and through this direct, personal interest, much more would probably be accomplished than through the intervention of joint commissioners appointed by each State, to meet and confer at their leisure upon the question at issue.

In case any bondholders should decline to accept this proposition, thereby insisting that this State shall settle the question with West Virginia, the State in good faith recognizing her obligations might appoint commissioners for this purpose, saying to these bondholders that as soon as these commissioners can agree upon this question, she will settle with them in full, but of course until that time *paying no interest* upon these unsettled claims. We anticipate, however, that the proposition of the State would be generally accepted both for its justice and manifest advantage to the bondholders; and this opinion is fortified by the expressed views of bondholders within and without the State who are now largely interested in the debt of the State. We think there need be no apprehensions about the ability of the State to pay this year 6 per cent. interest upon this reduced debt. Those most conversant with the

resources of the State affirm that a tax of 30 cents on the $100 will, with the present special taxes return to the treasury of the State more than sufficient to do this.

The Federal taxes for the past year averaged $16.04 per capitum, and $3 92 per $100 of the aggregate wealth, real and personal of the United States. Beside these apparently heavy taxes, the following cities paid the specified *municipal* taxes:

Philadelphia	4.99	per $100	on real estate.
New York City	3.00	"	real and personal.
Brooklyn	3.41	"	"
Rochester	5.62	"	"
Utica	5.61	"	"
Albany	3.76	"	"
Syracuse	3.72	"	"

In view of these figures, cannot this State, while no private debts are being paid, pay 30 cents, or if necessary 60 cents on $100 of her property to meet her civil expenses and interest on her debt? The plan has been favorably entertained to pay three per cent. interest upon the entire debt, increasing the rate regularly through a series of years until 6 per cent. interest shall have been paid upon the debt; whereas, the reduction of *thirty per cent.* leaves only 70 per cent. to be paid, which at 6 per cent. interest would be only 4 1-5 per cent. on the present debt, or an increase of only 1 1-5 per cent. on 3 per cent. interest on the present debt. This small difference of 1 1-5 per cent. can be easily paid by economy and retrenchment, beside inspiring the tax payer with new energy and hope by the reduction of $13,000,000 of debt.

Another proposition has been suggested: It is, that as the registered bonds of the State embrace, say *two-thirds* of the entire debt, and the coupon bonds the remainder, say *one-third*, that this State should assume as her portion, to pay the *registered bonds*, and shall provide for their interest, making no provision for the *coupon bonds*, expecting that West Virginia shall assume them as her just proportion.

While we are satisfied that it is not so designed, we think that the success of this scheme would inevitably involve the honor and credit of the State, and result in but little practical benefit to the registered bonds. Disguise it as we may, the proposition is based upon the supposed fact that the registered debt is mainly *domestic*—held within the limits of the State; while the coupon bonds are mainly *foreign*—held beyond the limits of the State. As a principle both of morals and policy we should be as much bound by our obligations to the creditor abroad as to the creditor at home. Besides it would thereby be preferring *one form* of debt, to that of another, where all were of the same dignity, contracted at the same time, and for the same object; for when the State offered her bonds for sale, she gave the election to the purchaser to take either a coupon or registered bond, and each took that form of security which best suited his convenience or purpose. Therefore, to make such a distinction, the holder of the coupon bond would justly complain that his debt had been *practically repudiated*, while that of his more fortunate neighbor had been recognized. Again, this discrimination would result in but little practical good to the registered bonds. The main proposed advantages to result from the payment of interest would be the advance in the market

value of these bonds, and the ability of the holders to hypothecate them as collaterals for the loan of monies: and the embarrasment of the great majority of these bondholders in this State is such, as to require them to sell either a portion of their bonds or to borrow money on them. It is very evident that their is no capital within the State for either of the above purposes, and hence foreign markets must be mainly depended upon. Now suppose the holder of a registered bond should offer it for sale in Baltimore or New York upon the ground that it had just been recognized without qualification by the State, and that interest would be promptly and regularly paid on the same: the capitalist might reply that he then held an identical obligation of the State, only that it was in the form of a coupon instead of registered bond, which the State had refused to recognize, or pay interest upon, that he had been informed his only recourse was upon West Virginia and that the cause of this distinction by the State in her just debts was, that the one was *domestic* and the other *foreign;* that the proposition was now to sell also the registered bond to him, and thereby make it also *foreign;* and he had no guarantee that as soon as any material proportion of the registered debt should become foreign, the State would not also repudiate that, as it had done already his coupon bond. It is therefore hardly probable there would be any appreciation in the value of these bonds, or any foreign demand for them. Hence the proposition, if carried, would not only tarnish the faith of the State, but defeat the purposes which it was designed to accomplish. The first proposition makes no distinction among the State's creditors, preserves her good name, and will practically secure what the other ineffectually aims at.

DEBT AND FINANCES OF ILLINOIS.

The public debt of Illinois, as shown by the bi-annual report of the State Treasurer, amounted, on the 1st December, 1866, to $8,638,252 21, and is accounted for in the following statement:

Class of debt.	When dated.	Payable.	Bonds, &c.	Amount.
Bank of Internal Improvement stock	July 31, 1837	After 1860	31	$31,000 00
Internal Improvement stock	Jan. 1, 1838	" 1870	11	11,000 00
" " "	July 1, 1839	" 1870	10	10,000 00
" " "	May 1, 1840	" 1870	21	21,000 00
Refunded stock	July 1, 1859	In 1860	1	1,000 00
" Canal stock	July 1, 1859	" 1860	17	17,000 00
" stock	July 1, 1859	" 1862	278	278,000 00
" "	July 1, 1859	" 1865	13	13,000 00
" "	July 1, 1859	" 1869	84	84,000 00
" "	July 1, 1859	" 1870	340	340,000 00
" "	July 1, 1859	" 1876	89	89,000 00
" "	July 1, 1859	" 1877	439	439,000 00
Normal University bonds	July 1, 1859	" 1879	64	64,000 00
Thornton Loan bonds	March, 1861	" 1879	143	143,000 00
War bonds	July 1, 1861	" 1879	511	511,000 00
" "	July 1, 1861	" 1879	524	262,000 00
" "	July 1, 1861	" 1879	1722	172,200 00
Ill. & Mich. Canal bonds—coupon	July 1, 1837	" 1860	150	150,000 00
" " " registered	July 1, 1837	" 1860	539	269,500 00
" " " coupon	July 1, 1839	" 1860	45	45,000 00
" " " registered	July 1, 1839	" 1860	163	81,500 00
" " " coupon	July 1, 1841	" 1870	40	40,000 00
" " " registered	July 1, 1841	" 1870	62	31,000 00
" " " coupon	July 1, 1847	" 1860	122	122,000 00
" " " registered	July 1, 1847	" 1860	226	113,000 00

Class of debt.	When dated.	Payable.	Bonds &c.	Amount.
Ill. & Mich. Canal bonds (£225 stg.) coup	April, 1839	In 1870	32	32,000 00
" " " reg	April, 1839	" 1870	38	19,000 00
" " " (£100 stg.) coup	June, 1840	" 1870	29	12,888 89
" " " " reg	June, 1840	" 1870	408	90,666 67
" " " (£225 stg.) coup	April, 1839	" 1870	698	69[illegible],000 00
" " " " reg	April, 1839	" 1870	518	259,000 00
" " " (£300 stg.) coup	June, 1840	" 1870	43	57,333 33
" " " " reg	June, 1840	" 1870	549	366,000 09
Inscribed stock—New Internal Improvement stock, under act Feb. 28, 1847				1,765,526 43
Inscribed stock—Interest bonds, under act Feb. 28, 1847				1,077,886 47
" " " " " " Feb. 18, 1857				680,469 23
" " Liquidation bonds, under act Feb. 10, 1849				198,372 00
Internal Improvement scrip and un unded indebtedness				42,909 19

The following is a recapitulation of the above details of the State debt:

Bank and internal improvement stock—payable	after 1860		$31,000 00
Internal improvement stock	"	after 1870	42,000 00
Refunded stock	"	in 1860 to 1877	1,261,000 00
Normal University bonds	"	in 1879	64,000 00
Thornton loan bonds	"	in 1879	143,000 00
War bonds of 1861	"	in 1879	945,200 00
Illinois and Michigan Canal ($) bonds	"	in 1860 & '70	852,000 00
" " " (stg) bonds.	"	in 1870	1,534,888 98
Inscribed stock			3,722,254 13
Scrip and unfunded indebtedness			42,909 19
Aggregate debt, December 1, 1866			$8,638,252 30

On the 1st December, 1860, the entire bonded debt of the State amounted to $10,277,161 36; which debt was increased $2,050,000 by the war loan of July 1, 1861, making,

in the aggregate	$12,327,161 36
The entire debt as above, December 1, 1866, was	8,638,252 30
Making a reduction in the last five years of	$3,688,909 06

And there was in Treasury December 1, applicable to the further payment of the debt, as follows:

State debt fund, balance Dec. 1, 1866		$731,588 49
Illinois central Railroad fund Dec. 1, 1866		33,882 16
		$765,470 65
Add estimated amount of Illinois Central Railroad fund (being 7 per cent. of gross earnings reserved to State) for 6 months ending Oct. 31, 1866	$221,574 05	
And the Board of Trustees of the Illinois and Michigan Canal, have declared another dividend of 5 per cent. on the registered canal bonds, payable Jan. 2, 1867	123,166 66	344,740 71
Total applicable to State debt Jan. 7, 1867		$1,110,211 36

Which will reduce the outstanding debt by this amount and to the sum of $7,528,040 94.

The Auditor gives a detailed statement of the valuation of real and personal estate in each county for 1864 and 1865, forming the basis of taxation for 1865 and 1866; and from this we take the general abstract referring to the whole State:

	1864.	1865.	Increase.
Value of lands	$199,577,508	$213,992,980	$14,415,472
" of town lots	42,956,824	48,121,328	5,164,504
" of railroad property	12,285,640	13,911,303	1,625,663
" of personal property	102,057,865	116,302,293	14,244,428
To al valuation	$356,878,837	$392,327,904	$35,449,067

The personal property assessed in the same two years is described as follows:

Property.	1864. Number.	1864. Amount.	1865. Number.	1865. Amount.	Difference. Number.	Difference. Amount.
Horses	723,751	$25,148,408	793,259	$28,055,559	+69,508	+$2,907,151
Neat Cattle	1,370,783	13,709,418	1,568,280	14,285,863	+197,497	+576,445
Mules and Asses	39,197	1,722,809	48,058	2,267,194	+8,861	+544, 85
Sheep	1,606,144	2,876,696	2,165,972	3,955,102	+559,828	+1,007,406
Hogs	2,044,896	2,799,158	1,743,005	3,359,621	−301,889	+560,463
Carriages and Wagons	239,959	5,428,178	259,471	6,120,293	+19,515	+692,115
Clocks and Watches	206,581	789,466	215,575	958,654	+8,994	+169,188
Pianos	5,770	515,416	7,610	548,056	+1,840	+22 6 0
Goods and Merchandise		14.506,971		17,823,146		+3,326,175
Bankers' and Broker' property		1,186,166		464,916		−72 ,2 0
Capital Stock of Banks		541,171		500,906		−40,265
Manufactured Articles		1,563,852		1,929,072		+365.220
Moneys and Credits		19,620,190		20,335,1 6		+714,916
Bonds & Stocks		865.960		2,043,093		+1,177.133
Unenumerated		14,436,908		16,643,657		+2,206,749
Aggregate		$105,710,767		$119,290,233		+$13,579,471
Deductions		3,652,902		2,987,945		−664,957
Total taxable		$102,057,865		$116,302,293		+$14,244,438

The aggregate valuation for the last ten biennial periods is shown in the following statement:

1847, for tax of	1848-49	$105,432,752	1857, for tax of	1858-59	$407,477,367
1849,	do	1850-51	119,868,336	1859,	do	1860 61	366,702,043
1851,	do	1852-53	224,715,963	1861,	do	1862-63	330,823,479
1853,	do	1854-55	325,159,633	1863,	do	1864-65	331,999,871
1855,	do	1856-57	336,189 334	1865,	do	1866-67	392,327,906

The valuation of the real estate and personal property under the census of the United States in 1850 and 1860 gives the following as the results:

	Real Estate.	Personal Property.	Total.	True Value
Census 1350	$81,524,835	$33,257,810	$114,782,645	$156,265,006
" 1860	287,291,940	101,987,432	389,207,372	871,860,282

Without any addition of value for the different circumstances of the State in 1866, and adopting only the true valuation of 1860 as given by the federal census of that year, we may estimate the real value as three times that of the taxable value. This allows a generous margin in case the taxes should have to be increased without altering the constitutional rates. In fact the property of the State is now assessed for taxation at only a third of its actual value. The real wealth of the State at the present time is estimated by Governor Oglesby at $1,200,000,000.

The following synopsis, taken from the Treasurer's report, shows the balance in the Treasury on the 1st day of December, 1864, the receipts and disbursements during the two subsequent years and the balance standing to the credit of the several funds on the 1st day of December, 1866:

	Bal. Dec. 1, '64.	Receipts.	Total Means.	Paym'ts.	Bal. Dec. 1'66.
Revenue fund	$3,263 50	1,351,789 19	1,355,052 69	1,288,629 18	66,423 51
State debt fund	589,124 44	1,406,484 68	1,995,609 12	1,264,020 63	731,588 49
Interest fund	309,256 58	1,539,747 31	1,849,003 89	1,310,455 42	538,548 47
School fund	112,075 94	226,733 52	338,809 46	297,076 64	41,732 82
Illinois Central RR. fund	198,868 20	937,450 50	1,136,318 70	1,102,436 54	33,882 16
Delin. Land tax fund	331 06		331 06		331 06
Unknown and minor heirs fund.	701 66	743 45	1,445 11	295 26	1,149 85
War fund	10 76	29,500 00	29,510 76	29,510 76	
Hancock Co. in. f.		9,465 76	9,465 76	8,950 76	515 00
Total of all funds	1,213,632 14	5,501,914 41	6,715,546 55	5,301,375 19	1,414,171 36

The income of these several funds derived from taxation is at the following rates to valuation:

For the Revenue Fund	12	cents per	$100 value
For the State Debt Fund	20	"	"
Interest Fund	18	"	"
School Fund	20	"	"
Total for all Funds	70	"	"

The Governor, in his message, states the population of 1865, according to the census of that year, to have been 2,141,510. This would distribute the assessed valuation of property in 1865 at the rate of $183 20 per capita. The wealth of the State, as estimated by Gov. Oglesby, would give $560 35 to each inhabitant. The taxation on every $183 20, at 70c. per $100, gives $1 28 as the tax per capita; and such is the rapid increase in the population and wealth of the State, while its debt is decreasing, that even this moderate taxation may be reduced in coming years. The Governor already recommends the repeal of the constitutional tax of two mills on the dollar for the State Debt Fund, as the source of an unnecessary burden.

As an instance of the continued prosperity of the State, we in a few items compare the census of 1860 and 1865:

	1860.	1865.	Increase.
Population	1,711,951	2,141,510	429,559
Value of manufactures	$57,586,886	$63,356,013	$5,769,127
Live-stock, heads	72,501,225	123,772,554	51,271,329

The value of agricultural products in 1865 was $83,280,848, and 380 mines produced in the same year 1,078,495 tons of coal.

These facts compare brightly with the condition of affairs previous to the definite liquidation of the debt in 1847. They show that what was a grievous burden then is now scarcely felt by the taxpayer.

CONFEDERATED BRITISH AMERICA.

The English Colonial Secretary, the Earl of Carnarvon, has given notice of his intention to introduce into Parliament a bill providing for the confederation of all Eastern British North American Provinces, excepting Newfoundland and Prince Edward's Island: and it may therefore be taken for certain that we shall shortly see the first steps accomplished towards the consolidation on our Northern frontiers of what may practically be regarded as a new nationality.

The connection between the British American Colonies and the mother country will, no doubt, be strengthened rather than weakened for a time by this consolidation; but it would be superfluous to repeat at this late day the reasons which in these columns and elsewhere, have heretofore been given for believing that the ultimate result of an effective North American Confederation must be the independence of the provinces comprised in it. The expectation of such a result has probably done more than any other single cause to secure favorable attention to the project in Great Britain; for it is quite plain, and has for some time past been plain, that the intelligent portion of the British public are more anxious than is

any considerable party in the North American provinces to sever the tie which unites those provinces with the metropolis.

The promulgation of the act of Confederation in England is to be accompanied, we are informed, by the publication of an imperial loan in aid of the construction of a complete railway communication through the provinces, and both by this means and by the substitution of a general revenue system in the place of the existing provincial tariffs, it is expected that the Canadian commerce, which has been repelled from our own borders by the abolition of the Reciprocity Treaty and by the establishment of our own present tariff rates, may be diverted to and permanently knitted with the industries of the Atlantic provinces.

It cannot be said that these expectations are upon the face of them wholly unreasonable. The British North American Provinces most certainly seem to labor under every disadvantage of soil, of climate, and of inter-communication, when they are compared with our own great Northern tier of States. But they do as certainly contain within themselves many elements of a possible national existence and prosperity, and now that this scheme of a Confederation, which was so long looked upon as chimerical, is on the eve of accomplishment, nothing is to be gained by blinding ourselves to the fact that it really may bring about, in the process of time, very serious changes in the political and commercial equilibrium of the Western Continent. If there are influences at work among the British American population which may be expected to draw those populations gradually towards a union with ourselves, there are other influences also at work among them of quite the opposite tendency. Probably the recently adopted fiscal policy of our own Government will be found in time to have supplied some of the most powerful of these latter or repelling influences. Every year which accustoms the British Americans to exclusion from our commerce, and to the development of new commercial relations with each other, will give force to these repelling influences. But without entering deeply or at length into speculations upon this point, it may be safely assumed that the establishment of the Confederation will retard, at least, if it does not avert, any drift of British American sympathies and necessities and interests towards a political union with ourselves. Let us confine ourselves, therefore, just at present, to an exposition of the "stock in trade" with which the new organization is about to commence its experiment of national life.

The "Year Book and Almanac" of British North America, gives us the means of making such an exposition; and we could sincerely wish that there existed among ourselves any exhibit of our own national and State resources at once so compendious and so clear. In this "Year Book" the population of the new Confederation is estimated to be in January, 1867, very nearly four millions in number, the annual rate of increase in the six colonies ranging from 1.50 per cent. in Newfoundland to 4.34 per cent. in Upper Canada. The distribution of this population is as follows:

Upper Canada.....	1,802,056	Prince Edward's Island	91,443
Lower Canada.....	1,288,880	Newfoundland.....	130,000
New Brunswick.....	295,084		
Nova Scotia	368,781	Total	3,976,244

We include Newfoundland and Prince Edward's here, because it is well understood that their accession to the Confederation is a mere matter of time. They stand out now only as Rhode Island and North Carolina stood out in '89 against the Union.

The proportion of native born residents to those of foreign birth is not so large in these provinces as in the United States, being 79 per cent in the former, against nearly 90 per cent in the latter. The inhabitants of French descent bear a smaller proportion than is commonly supposed to the whole body politic. They are concentrated chiefly in Lower Canada, and number throughout the new confederation no more than 961,466. They must, however, be regarded as an element likely to be at least passively unfriendly to any amalgamation with the United States; and it is probable that we must view in the same light the fact that the Roman Catholics number no less than 44½ per cent. of the entire population, and are no less than three times as numerous as either of the two religious denominations ranking next to them in importance, the Church of England, which comprises 15¾, and the Presbyterians who stand at 15½ per cent of the inhabitants.

Although the agricultural population of the Provinces has been falling off of late years relatively to the numbers of those engaged in other occupations it still comprises very nearly 50 per cent of the whole, and the value of the farms of British America is set down at $546,345,330, being rather less than half of the total estimated value of the property of the six provinces. The annual wheat crop is estimated at a little less than one-sixth, and the annual barley crop at a little more than one-third of the wheat and barley-crops of the Union; while of wool at the last returns the provinces raised somewhat less than one-eighth of the amount raised in this country. The Provincial Fisheries were nearly approximate in value to our own, being equal on an average to 75 per cent. of the latter; and during the past year, as we need hardly remind our commercial readers, the provincial ship-yards have pretty nearly monopolized the activity in that direction of the North American Continent. This point, upon which it is not agreeable to dwell, has been set forth clearly and with some not unnatural bitterness in a petition recently presented to the Senate by Mr. Fessenden in behalf of the ship-builders of Maine.

A good deal of enterprise has been directed during tho past three years to the development of the mining industries of the Provinces, but as yet with no results of commanding importance. In the Report of the "Commission on the Canadian Gold Fields" for 1866 the yield of tha Chaudiere district is estimated at $116,000, but neither in the production of gold, lead or copper can the Provinces be considered to have done more than indicate their possession of resources likely to prove at some future day remunerative.

When we consider that the Provinces now raise under their separate systems a total revenue larger than was found necessary for the United States when we possessed a population no larger than theirs, it can scarcely be doubted that no serious fiscal difficulty will be found to be in the way of the experiment of confederation. Mr. Galt, indeed, who is admitted to be the ablest of British American financiers, declared recently in his place in the Canadian Parliament that during the year 1865-66 the receipts of the Canadas exceeded the expenditures by almost sixty

thousand dollars, even after allowing for the unusual militia charges of that year. The debt of the Provinces is very nearly as large as the debt of the Union in 1860, but as the charge per head of the population has been diminishing during the last five years, and now ranges from a minimum pressure of only 20 cents per head of interest yearly, in Prince Edward Island, up to a maximum pressure of $1 25 per head of interest yearly, in Canada, it ought to be easily practicable for the financiers of the new confederation, if the experiment at all equals by its results the expectations of its advocates, to adjust any necessary burden of enlarged and prolific expenditure to the ability of the population.

The enormous sum, amounting to nearly $150,000,000, which has already been laid out by the Provinces upon railways and canals, at once explains the origin of their existing public debt, and proves that neither British capital nor Provincial enterprise will be slow to come forward in undertakings of general value to the Provincial people. But heretofore, as Mr. Hatch in his report on Canadian and American commerce has, we think, fully shown, this outlay has failed to produce its expected results. The Provinces have tried to divert American commerce with Europe into Canadian channels, rather than to open a new Canadian commerce through British American ports by connecting the St. Lawrence directly with New Brunswick and Nova Scotia. With this object they have lavished money on canals which have so far failed to attract our Western transportation, but they are still bent on the same policy. Says Mr. Hatch :

Other Canadian routes, navigable for ships, are also projected. The longest is that proposed from Georgian Bay, on Lake Huron, to Montreal, following chiefly the Ottawa River, and connecting it with the Mattawan, French River, and Lake Nipissing. It is stated that of its whole distance, of about 430 miles, less than thirty-eight would consist of artificial canal. It is estimated by the friends of this route that the distance will be 842½ miles less by it from Chicago to Montreal than by the present means of transit by way of the lakes and St. Lawrence ; and the cost of its completion is variously computed by Canadian authorities at from $24,000,000 to $50,000,000.

It is also proposed to enlarge the Welland and St. Lawrence canals so as to permit the passage of seagoing vessels of 1,200 tons burden. The present dimensions of the various canals required to overcome the natural obstacles of the route from Lake Erie to the ocean, *via* the Welland Canal, Lake Ontario and the St. Lawrence are as follows :

	Length in miles.	Depth in feet.	Size of locks. in feet.	No. of locks.
Lachine	8½	10	200x45	5
Beauharnois	11¼	10	200 x45	9
Cornwall	11½	10	200x45	7
Farrand's Point	9¾	10	200x45	1
Rapid Plat	9¾	10	200x45	2
Point Iroquois	9¾	10	200x45	1
Gallop's	9¾	10	200x45	2
Welland	28	10	150x26½	27
Totals	69			54

While the St. Lawrence canals, completing the system of navigation from the ocean to Lake Ontario, can now pass vessels of 800 tons burden, no vessels of more than 600 tons burden can go from Lake Ontario to Lake Erie, via Welland Canal, and the other lakes above the Falls of Niagara.

It will, however, we suspect be found, when the Confederate system

fairly gets into operation, that the Maritime Provinces will press for, and that the inland Provinces will be led to recognize the necessity of modifying this canal policy, and of working together to bring the Canadas directly into relations with the Atlantic coast.

Without entering now upon the strictly commercial statistics of the proposed confederation under existing circumstances, we may properly assume that the inter-provincial commerce at least must be speedily benefitted by the removal of the restrictions under which it now labors; and whatever may be its ultimate issue as a form of Government, the stimulus which will be given by the experiment of Confederation to political thought and to commercial enterprise in the colonies can hardly fail, we think, to redound largely and directly to their advantage, while the operation of the experiment itself will certainly both deserve and command the very careful attention and study of our own statesmen and people.

DEBT AND FINANCES OF MICHIGAN.

The funded and fundable debt of the State of Michigan on the 30th November, 1866, amounted to $3,979,921, and was made up as follows;

Six per cent. Renewal Loan bonds, due		Jan. 1,	1878	$216,000
Seven "	$2,000,000 "	" " "	1868	250,000
Six "	" " " " "	"	1873	500,000
Six "	" " " " "	"	1878	500,000
Six "	" " " " "	"	1883	720,000
Seven "	War Loan bonds,	" "	1886	1,111,500
Seven "	War Bounty bonds,	May 1,	1890	463,000
				$3,790,500
Six per cent. St. Marie canal bonds (guaranteed by State), due Jan. 1, 1878				$100,000
Matured adjusted bonds, past due and interest stopped				4,000
" full paid $5,000,000 loan bonds, past due and in't stopped				12,000
War loan bonds, called in Jan. 1, 1866, " " "				1,100
Past paid (unrecognized) bonds $125,000 adjustable at				72,321
Total funded and fundable debt				$3,970,921

The amount of this held by the several educational funds is as follows, to wit.:

Primary school fund	$1,268,331
Five per cent, primary school fund	138,631
University fund	279,565
Normal school fund	41,877
Total trust fund debt	$1,728,404

The policy of investing these educational funds in State bonds has been pursued for several years, the object being the ultimate withdrawal of the State debt from the public market, and the safe investment of the funds themselves. If this policy is continued, the Treasurer in his report says, that the amount thus received, added to the annual levy of 3-16th of a mill for the Sinking Fund, will probably be sufficient to pay the State debt as fast as it matures. Deducting the investments already made, viz.: $1,728,-404, from the funded and fundable debt as above given, viz.: $3,979,921, leaves the net amount of that debt outstanding on the 30th November, 1866, $2,251,517.

The State tax for the year 1866 consists of the following items, viz.:

2.7-10 Mill tax (Act 363, Laws of 1865) *General*	$464,550 67
1-8 Mill tax (Act 122, Laws of 1861) $2,000,000 *Loan, Sinking Fund*	38,495 73
1-16 Mill tax (Act 5, Laws of 1861) *War Loan, Sinking Fund*	19,247 87
Military tax (Act 16, Laws of 1862)	19,628 70
Appropriation for Insane Asylum (Act 192, Laws of 1865)	40,000 00
Total amount of State tax for 1866	$581,922 97

—the proceeds of which are destined for the service of 1867. The tax of 2.7-10 mills is levied, according to the Auditor's report, on the equalized valuation of 1861, and the sinking fund taxes of $\frac{1}{8}$th and 1-16th mill on the valuation of 1866. In 1865 the State tax proper was 3.2 mills on the taxable property; in 1866 it was reduced to 2.7 mills, and for 1867 a rate of 1.5 mills, it is thought, will be abundantly sufficient, provided no extravagant appropriations be made. Specific taxes are derived from railroad, banking and insurance companies. These, especially the railroad and insurance taxes, are becoming important. A State military fund to aid, arm and equip military organizations within the State, is supported from a tax of 15c. levied on each voter.

The following statement exhibits the receipts and disbursements on account of the several funds administered by the State for the fiscal year ending Nov. 30, 1866:

	Receipts.	Payments.
General Fund	$1,050,495 75	$591,177 44
Internal Improvement Fund	4,001 41	8,978 55
St. Marie Canal Fund	14,184 60	7,520 00
War Fund	371,398 13	481,444 03
War Loan Sinking Fund	.....	261,800 00
Soldiers' Relief Fund	.....	10,000 00
Suspense Account Fund	6,000 00	.....
Primary School Fund	124,531 00	440,000 00
Primary School Interest Fund	52,766 65	137,926 36
University Fund	14,693 75	34,479 21
University Interest Fund	12,306 58	.....
Normal School Fund	2,772 80	40 00
Normal School Interest Fund	2,285 00	10,529 26
Swamp Land Fund	233,339 51	217,723 90
Swamp Land Interest Fund	7,123 48	289 92
Asylum Fund	2,533 54	46,031 50
State Building Fund	3,618 36	5 00
	$1,901,990 69	$1,791,385 18
Balance in Sub-Treasury, Nov. 30, 1865	468,401 81	.....
Balance in Treasury, Nov. 30, 1866	.....	579,007 32
Total amount disbursed	$2,370,392 50	$2,370,392 50

The following statement shows the principal sources of the receipts and the chief object of expenditure on account of the general fund.

Amount from taxes, &c	$458,351 35	Salaries	$23,524 90
Tax sales	130,136 87	Judiciary	36,697 07
Delinquent taxes and int.	160,605 11	Appropriations	40,476 75
Railroad specific tax	160,667 14	Extra clerk hire	7,926 77
Bank " "	900 00	Awards of State Auditors	53,955 71
Insurance " "	40,039 74	State prison	68,000 00
Interest on surplus funds	15,411 18	Paid Counties, on account	95,804 94
Sundries, sales, redemptions, &c	84,354 36	Interest on debt	135,760 00
		Sundries	107,031 30
Total	$1,050,495 75	Total	$571,177 44

From this showing it appears that the resources of the State are greater than are necessary to cover ordinary expenditures, and that the credit bal-

ance is rising annually. The State debt is also being rapidly decreased, and will soon disappear, by direct payment or by absorption into the trust funds. The whole annual cost of the State expenses, including the cost of the debt, and reckoning the population at 850,000, is now only about 67½ cents per capita; and in relation to the wealth of the State only about 85 cents on the $100 valuation. This estimate, however, does not include the school or other local taxes, of which the State Report gives no account. The equalized assessed valuation in 1866, as deduced from the rate and amount of the taxes levied for that year was $307,965,840.

DEBT AND FINANCES OF LOUISIANA.

The Auditor of Public Accounts, in his report to the General Assembly for the year ending December 31, 1866, reports the debt and liabilities of the State at that date to have been as shown in the following recapitulation:

Liabilities for the property banks	$4,838,933 33
Debts proper in trust funds	1,562, 65 72
Debts proper in bonds, maturing between 1867 and 1906	5,485,800 00
Certificates of indebtedness	1.471,000 00
Grand total of debt and liabilities	$13,357,999 05
Deducting from this sum the liabilities for the property banks, which, though represented by bonds of the State, are only contingent, the absolute debt of the State at the close of the year 1866 was	$8,519,065 72

From the total of this indebtedness can properly be deducted the following items:

State certificates of indebtedness, the same being gradually withdrawn from circulation	$1,471,000 00	
Trust funds, the amounts of which are nominal, and may be considered as mere book accounts	1,562,265 12	
State bonds held by the State for the trust funds	1,190,500 00	
State bonds issued to the Board of Levee Commissioners, and in possession of the State Treasurer	700,000 00—	$4,923,765 72
Reducing the actual outstanding bonds to		$3,595,300 00

The following statements exhibit in detail the several classes of the debt, showing the purposes for which issued, the amount, and the dates of maturity, &c.:

Liabilities of the State for the Property Banks.

Bonds loaned the Consolidated Bank		$541,600 00
" " Citizens' Bank, due Feb. 1 1868	$1,265,333 33	
" " " " " " 1877	1,264,888 89	
" " " " " " 1884	500,000 00	
" " " " " " 1886	1 267,111 11—	$4,297,333 33
Total amount loaned the property banks		$4,838,933 33

Liabilities in Bonds classed as Debts Proper.

Issued for	When due.	No.	Am'nt.
Charity Hosp. N. O. & Nash.	Mar. 20, '72	86	$86,000
R. R. Co.	Apr. 1, '67	483	483,000
Mex. Gulf R. R. Co	Dec. 18, '69	30	30,000
do do	Mar. 11, '70	50	50,000
do do	May 23, '70	20	20,000
State Treas'ry.	July 18, '93	1,500	750,000
Stock in N. O., Jackson & Great Northern R. R. Co., $884,000.	Aug. 1, '93	165	165,000
	Feb. 1, '94	21	21,000
	May 1, '94	239	239,000
	Nov. 1, '94	267	267,000
	Jan. 1, '95	59	59,000
	Mar. 7, '95	35	35,000
	Apr. 1, '96	14	14,000
	May 1, '97	20	20,000
	Nov. 1, '97	37	37,000
	July 1, '98	27	27,000
Stock in N. O., Opelousas & Great Western R. R. Co., $650,000.	June 1, '93	76	76,000
	Aug. 1, '93	45	45,000
	Nov 3, '93	16	16,000
	Feb. 1, '94	16	16,000
	May 1, '94	268	268,000
	Nov. 1, '94	88	88,000
	Jan. 1, '95	41	41,000
	Apr. 1, '95	28	28,000
	Dec. 1, '95	13	13,000
	Jan. 1, '97	16	16,000
	Jan. 1, '98	12	12,000
	July 1, '98	2	2,000
	July 1, '99	10	10,000
	Feb. 1, 1900	10	10,000
	Jan. 1, 1901	9	9,000
Stock in Baton Rouge, Grosse Tete & Opelousas R. R. Co., $160,000.	Apr. 1, '94	66	66,000
	Apr. 1, '95	9	9,000
	Apr. 7, '95	13	13,000
	May 15, '97	8	8,000
	May 15, '98	7	7,000
	Nov. 1, '98	13	13,000
	Nov. 1, '99	5	5,000
	Feb. 1, '90	6	6,000
	Aug. 1, 1900	3	3,000
	Aug. 1, 1901	6	6,000
	Mar. 13, 1906	4	4,000
Stock in Vicksburg, Shreveport & Texas R. R. Co., $298,000.	Nov. 1, '94	10	10,000
	Nov. 1, '95	28	28,000
	May 1, '96	52	52,000
	Mar. 23, '97	25	25,000
	July 1, '97	20	20,000
	Jan. 1, '98	16	16,000
	July 1, '98	23	23,000
	Jan. 1, '99	11	11,000
	July 1 99	18	18,000
	Jan. 1, 1900	18	18,000
	July 1, 1900	20	20,000
	Oct. 1, 1900	19	19,000
	Jan. 1, 1901	21	21,000
	Feb. 1, 1901	10	10,000
	Nov. 1, 1901	7	7,000
Seminary Fund.	July 1, '97	136	136,000
Free School Fund	July 1, '97	529	529,000
Expenses of building levees, $1,000,000.	Feb. 16, '86	100	100,000
	Mar. 10, '86	18	18,000
	Mar. 14, '86	506	506,000
	Mar. 20, '86	165	165,000
	July 1, '86	211	211,000
Settlement of coupons past due (Act No. 15, laws of 1866), $409,800.	Feb. 15, '86	250	250,000
	Feb. 15, '86	170	85,000
	Feb. 15, '86	632	63,000
	Jan. 1, '87	10	10,000
	Jan. 1, '87	16	1,600
Liabilities in bonds			$5,485,800
From which deduct: State bonds held by State for Trust Funds			$1,190,500
State bonds issued to Board Levee Commissioners and in possession of State treasurer.			700,000—$1,890,500
Bonds in actual circulation			$3,595,300

The bonds issued in favor of the New Orleans and Nashville and the Mexican Gulf Railroads are 30 year bonds: all others issued before 1861 are 40 year bonds. The Levee Bonds of 1866, and the funding bonds of 1866 and 1867 are 20 year bonds.

State Certificates of Indebtedness.

Amount issued under Act No. 5, Laws of 1866	$1,896,000 00
Less amount redeemed	425,000 00
Amount outstanding December 31, 1866	$1,471,000 00

These certificates are receivable for all State dues, and are being paid in, which will necessitate a higher rate of taxation than has hitherto prevailed.

Debts Proper in Trust Funds.

Amounts due General Government, under deposit act	$479,919 14
Amounts due Levee & Drainage Fund, borrowed under Acts No. 224 of 1861, and No. 45 of 1863	650,000 00
Amounts due Free School accumulating Fund, borrowed under Act No. 45 of 1863	200,000 00
Amount due Public Land Fund, borrowed under Act No. 49 of 1863	117,275 77
Loan from Louisiana State Bank, under Act No. 89 of 1862	50,000 00
Sundry Liabilities, on various accounts	65,070 81
Aggregate amount in trust December 31, 1876	$1,562,265 72

RECEIPTS AND EXPENDITURES IN 1866.

The receipts into the Treasury for the year ending December 31, 186 from all sources, were $3,692,731 76, as follows:

GENERAL FUNDS—			
State taxes of 1865	$407,236 50		
State taxes of 1861 64	10,665 00—	417,901 50	
Duty on Sales at Auction		54,092 68	
Licenses on trades, &c., in New Orleans	318,725 56		
Licenses on trades, &c., in other parishes	92,571 59—	411,297 15	
Tax of ¼ per cent. on gross sales or receipts		459,410 99	
Redemption of Lands forfeited for taxes		21,395 16	
Vacant estates, paid into treasury		16,661 91	
Purchases of public property in New Orleans		23,021 69	
Tax on Lottery ticket dealers		36,636 31	
State Certificates issued		1,396,000 00	
Sundries		1,849 36—	2,838,266
CURRENT SCHOOL FUND—			
Taxes of 1865	$144,227 06		
Taxes of 1861-4	6,174 75—150,401 81		
Poll taxes of 1865	21,326 35		
Poll taxes of 61-64	506 00—	21,832 35	
Redemption of lands for feited for taxes		13,577 25—	185,811 4
INTERNAL IMPROVEMENT TAX FUND—			
Taxes of 1865	$36,431 62		
Taxes of 1861-64	1,533 17—	37,964 79	
Redemption of lands forfeited for taxes		4,474 87—	42,488
LEVEE AND DRAINAGE FUND—			
Sales of swamp and over-flowed lands		35,852 83	
Issue of State Certificates of Indebtedness		500,000 00—	535,852 83
FREE SCHOOL FUND—			
Sales of 16th Section		450 42	
Interest on investments		73,440 00	
Ten per cent. tax on estates descending to foreign heirs		7,561 68—	81,452 11
REDEMPTION OF STATE DEBT FUND—Interest on bonds held by Fund			8,640 00
SEMINARY FUND—Interest on bonds held by Fund			270 00
Total receipts for the year ending Dec. 31, 1866			$3,692,731 76

The total expenditures, according to the State Auditor's Report amounted to $2,451,943 77, as follows:

General Fund	$1,645,702 01	
Current School Fund	212,712 95	
Internal Improvement Tax Fund	58,434 98	
Internal Improvement Fund	6,990 00	
Levee and Drainage Fund	525,905 08	
Free School Fund	2,017 90	
Redemption of State Debt Fund	176 01	
Seminary Fund	4 84	
Total expenditures for the year ending Dec 31, 1866		$2,451,943 77
Excess of receipts over expenditures in 1866		$1,240,787 99
Add balance, January 1, 1865	$356,818 54	
" warrants of 1865, cancelled in 1866	46,225 83	
" warrants outstanding, Dec. 31, 1866	30,922 95—	433,967 32
Balance in Treasury, December 31, 1866		$1,674,755 31

This balance is distributed and represented as follows:

Distributed to—		Represented by—	
General Fund	$1,495,149 34	Confederate notes	$465,173 37
Current School Fund	64,750 66	Check on account of vacant state.	6,038 60
Internal Improvement Tax Fund.	6,371 11	State Certificates redeemed	425,000 00
Levee and Dainage Fund	20,320 84	Loan to Levee Commissioners, in exchange for State bonds	700,000 00
Free School Fund	79,434 21	State Certificates of Indebtedness	63,235 0
Redemption of State Fund Debt	8,436 99	U. S. Treasury and city notes	15,308 34
Seminary Fund	265 16		
Total	$1,674,755 31	Total	$1,674,755 31

From this statement it appears that the large balance shown on the books is almost wholly a matter of account, and to a very small extent available in cash.

The expenditures of the General Funds are thus accounted for:

Legislature	$178,955 61	Relief of University	25,000 00
Salaries	222,250 41	Relief of Insane Asylum	23,000 00
Department contingent expenses	16,056 70	Printing and advertising	49,874 55
State assessors $33,860 42		Interest on State bonds	64,190 00
Tax collectors 41,669 22		Levee purposes	500,000 00
	75,529 64	Relief bills	26,663 06
Deductions to tax collectors	111,153 03	Foundin. Soldiers' Home	20,000 00
Support of State institutions	145,900 00	Redemption of bonds	16,725 00
Charity Hospital (tax on lottery-ticket dealers)	35,275 31	Plates for printing certificates	10,500 00
Support of State convicts	19,279 00	Bureau of Immigration	9,348 10
Repairs and maintenance of penitentiary	$50,000 00	Sundries	46,001 60
		Total	$1,645,702 01

The chief payments from the current School Fund were for support of Free Schools $161,251 26; from the Internal Improvement Tax Fund, for interest on railroad bonds, $48,310, and from the Levee and Drainage Fund, for repair of levees, etc., $500,000.

The revenue from all sources, including the tax on gross receipts and income, for the year 1867, is estimated at	$2,193,750
And the expenditures for the same year are estimated at	1,586,227
Excess of receipts over expenditures	$1,607,523

These estimates may be largely modified on two accounts. The legality of the tax on gross receipts and income is contested and in suit, and if decided against the State the loss on this account will not only be the $700,000 estimated for 1867, but also the amounts received from this source in 1866, amounting to $459,410 99, or together $1,159,410 99, the deduction of which from the estimates would leave a deficit to be provided for of $551,887 99. Nor do the estimates, as above given, include the amount that may be required by the Board of Levee Commissioners, which will probably be as large as in 1866.

The Auditor makes the following pertinent remarks on subjects requiring legislative action:

The most important subject which deserves your immediate attention is the inability of the internal improvement tax fund to meet the interest due and becoming annually due on the bonds issued to the railroad companies. When the tax was created and fixed at one-fourth of one mill on the dollar, the State was in a prosperous condition, and her taxable property amounted to nearly $600,000,000. The change undergone in the State since, resulting in the loss of over $300,000,000 of that taxable property, renders it necessary to-day to increase the tax a sufficient amount to meet the demands against it. According to the present returns of assessors the whole taxable property in the State is set down at $225,000,000, which at the low rate now fixed would yield if every dollar of it was collected the sum of $56,250. The amount required annually is $119,250, leaving therefore a deficit at the end of the present year of $63,270. This deficit will occur every year, and unless checked immediately by legislative action will in a few years swell to large proportions.

The credit of the State has sustained serious injury of late, from the inability of the Treasury to pay when due the interest on the outstanding bonds, and it is certainly time to reinstate the credit of a State whose bonds and obligations were once at a premium. The means are within your power. Amend the act fixing the tax at one-fourth of a mill, making it three-fourths. This will give a little more than needed but the surplus can be applied to the payment of back interest.

Another very important subject deserves your attention—the condition of the State Treasury during the current year. Our circulation on the first of January amounted to $1,471,000, and it is safe to assert that so long as we have one dollar of it outstanding, no other kind of money will be received for public dues. The certificates constituting this circulation are not reissueable, and hence it becomes the duty of the Legislature to provide by law the mode and means of relieving the Treasury from the embarrassed condition in which it will be placed by its own currency. If that be done there is no need for an increased rate of taxation, so far as to meet the ordinary expenses of the State government. The proposed change in the law fixing the internal improvement tax will also place that fund in a condition to meet its interest when due, and the State will once more be able to meet all claims on demand.

I regret to say that the returned lists of unpaid taxes upon real estate alone amount to nearly $59,000, and including the insolvent lists to over $121,000. This is about one-fourth of the taxes assessed, and is rather too large a percentage for deductions. In justice to the State, and to those who pay their taxes regularly, some law should be passed giving authority to this office to compel delinquents to settle up.

Notwithstanding the drawbacks and difficulties surrounding the fiscal affairs of the State, and which have resulted from the disorganized condition of matters caused by the late war, it is evident from the report from which the above abstracts are taken, that the main difficulties have been overcome. Most of the past-due coupons have been funded, and with the exception of the certificates of indebtedness the floating debt of the State has been extinguished, leaving a clearer course for the future, which wise legislation and a prudent administration may improve.

CALIFORNIA BORAX.

The source of supply of this mineral is a large and shallow basin, called Borax Lake, in Napa County. It is separated from Clear Lake by a range of hills belonging to the cretaceous period, and has, under ordinary circumstances, a length of about a mile, with an average width of half a mile; but its extent varies somewhat at different periods of the year, since its waters cover a larger area in Spring than during the Autumnal months. No stream of any kind flows into this basin, which derives its supply of water from the drainage of the surrounding hills, as well as in all probability from subterranean springs discharging themselves into the bottom of the lake. In ordinary seasons the depth thus varies from five feet in the month of April, to two feet at the end of October.

The borax occurs in the form of crystals of various dimensions, imbedded in the mud of the bottom, which is found to be the most productive to a depth of about 3½ feet, although a bore-hole, which was sunk near the centre to the depth of 60 feet, is said to have afforded a proportion of that salt throughout its whole extent.

The crystals thus occurring are most abundant near the centre of the lake, and extend over an area equivalent to about one-third of its surface; but they are also met with, in small quantities, in the muddy deposit of the other portions of the basin—some of them being, in the richest part before alluded to, over a pound in weight. The largest crystals are generally inclosed in a stiff blue clay, at a depth of between three and four feet, and a short distance above them is a nearly pure stratum of smaller ones, some

two and one-half or three inches in thickness, in addition to which crystals of various sizes are disseminated throughout the muddy deposit of which the bottom consists.

Besides the borax thus existing in a crystallized form, the mud is itself highly charged with that salt, and, according to analysis of Professor Oxland, when dried affords in the portions of the lake now worked (including the inclosed crystals) 17.73 per cent.

Another analysis of an average sample, by Mr. Moore, of San Francisco, yielded 18.86 per cent. of crystallized borax. In addition to this, the deposit at the bottom of the other portions of the basin, although less productive, still contains a large amount of borax. It has been further ascertained, by making pits on the lake shore, that clay, containing a certain proportion of borax, exists in the low ground at a considerable distance from the water's edge.

EXTRACTION OF BORAX.

The borax at present manufactured is exclusively prepared from the native crystals of crude salt, whilst the mud in which they are found is returned to the lake after the mechanical separation of the crystals by washing. The extraction of the mud is effected by the aid of sheet iron coffer dams and a small dredging machine. Until recently, the only apparatus employed consisted of a raft, covered by a shingled roof, which has an apperture in its centre about 15 feet square, and above which are hung, by suitable tackle, four iron coffer dams, six feet by six feet and nine feet in depth. This raft or barge is moored in parallel lines across the surface of the lake, and at each station the four dams are sunk simultaneously by their own weight into the mud forming the bottom. When they have thus become well imbedded, the water is baled out and the mud removed in buckets to large rectangular washing vats, into which a continuous stream of water is introduced from the lake by means of Chinese pumps—the contents of the cisterns being at the same time constantly agitated by means of rakes. In this way the turbid water continually flows off, and a certain amount of borax is finally collected in the bottom of each tank, which is subsequently recrystallized; but from the density acquired by the washing water, of which no less than 70,000 gallons are daily employed, it is evident that less than one-half of the borax existing in the form of crystals is thus obtained, whilst that which is present in the mud itself is again returned to the lake.

The dredging machine recently introduced is a decided improvement on the coffer dams, and may, by the aid of some trifling modifications, be made a very efficient machine; but the mud brought up by it is subjected to the washing process before described, and a small proportion only of the borax is obtained for recrystallization.

CRYSTALLIZATION.

The crystals of crude borax thus daily obtained now amount to about 3,000 pounds, and after being carefully washed they are deposited in boiling water, and recrystallized in large lead-lined vessels, from which the purified borax is removed into boxes, containing 114 pounds each, for the purpose of being forwarded to San Francisco.

The product of refined borax now daily obtained appears to vary from 2,500 to 2,800 pounds, which is prepared and packed for market at a cost of about $90 per ton of 2,240 pounds.

CAPABILITIES OF PRODUCTION.

It is evident from the foregoing description that the present system of working is by no means calculated to develope the best results which this property is capable of affording, and that in order to do so it will be necessary to adopt some method for the lixivation of the mud. The total extent of this muddy deposit considerably exceeds 300 acres, and if we assume that of this area only 100 acres, or that portion now worked for Borax chrystals, is alone sufficiently rich to pay the expenses of treatment, we shall arrive at the following figures: One hundred acres are equivalent to 484,000 square yards, and if the mud be worked to the depth of only 3½ feet, this represents 565,000 cubic yards; or, allowing a cubic yard to weigh a ton of 2,240 pounds, which is a very low estimate, the total weight of 100 acres of mud in its wet state will be 565,000 tons. If we now assume that the mud extracted from the lake contains 60 per cent. of water, this will correspond to 226,000 tons of dry mud, containing, according to the mean of the analyses of Professor Oxland and Mr. Moore, 18.29 per cent. of Borax; but if in practice only 12 per cent. of Borax be obtained, this will represent 27,120 tons of chrystalysed salt.

The present wholesale price of Borax in Europe is $320 per ton of 2,240 pounds, and consequently the total value of the amount contained in this portion of the lake would be, on the foregoing assumption, delivered in that market, $8,678,400. If, however, we estimate its value in San Francisco at $275, it is, at the port of shipment, worth $7,458,000.

The expenditure in plant and appliances of a further sum of $30,000, would, by the process proposed by Dr. Oxland, allow of a daily production of four tons of Borax. This could be produced and delivered in San Francisco at a cost, exclusive of interest on capital and depreciation of plant, of $70 per ton—$1,898,400 for the 27,100 tons, and leaving a difference of $5,559,600 between the expense of production and the market value.

The above calculations are made in accordance with the data furnished by the analysis, already quoted, of the mud of the central portions of the basin, but exclusive of a consideration of the borax contained in the deposits of other portions of the lake, as well as of the 6,000 tons of this salt, indicated by analyses, as existing, in solution, in its waters.

A careful consideration of the phenomena attending the production of Borax, also leads to the belief that its formation is continually going on, by the decomposition of carbonate of soda, by boracic acid emitted from sources beneath its bed. Should this prove to be the case it is probable that any moderate extraction of borax may be replaced by the formation constantly taking place.

SULPHUR BANK.

The sulphur bank, which presents the usual characteristic of such formations, is situated on the shore of Clear Lake, and covers an area of about 40,000 square yards. In addition to sulphur, small quantities of cinnabar are found in this locality.

The deposit has not, as yet, been extensively developed, but has already afforded 400 tons of refined sulphur, of which about three tons daily can, it is stated, be readily sold in San Francisco at $70 per ton.

From the limited extent of the explorations which have been made, it would be difficult to estimate the probable total yield of sulphur, but it is not unreasonable to anticipate that the bank contains at least from 15,000 to 20,000 tons of that substance.

In order to make immediate returns of sulphur, a refinery has been recently erected for the treatment of the richer portions of the deposit, which frequently do not contain above 10 per cent. of impurity; but there are also vast quantities of tufaceous matters, containing from 5 to 65 per cent. of sulphur, all of which will be ultimately treated with advantage.

The cost of extracting, refining, and delivering of a ton of sulphur in San Francisco is now stated to be about $35.

CONCLUDING REMARKS.

Mr. Phillips, in his concluding observations upon the property of the California Borax Company. says that it is evident, from the foregoing description, that it is one of great value and capable of extensive development.

The annual consumption of borax and boracic acid is estimated at 11,000 tons, of which amount the United States consumed about 500 tons; and although the discovery of new sources of supply may probably have the effect of breaking up the present monopoly, and thereby slightly reducing the prices below those assumed as the basis for calculation, there is no probability of this taking place to any considerable extent.

It may further be observed that the present import duty of 10 cents per pound will necessarily ensure the annual disposal of at least 500 tons at full prices.

The quantity of sulphur contained in the property is also large, and the duty of $10 per ton refined, and $6 crude, now levied, will admit of its successfully competing with Italian sulphur in the markets of the Eastern States. The present consumption of this article in California is nearly 1,000 tons per annum, and is steadily and rapidly increasing, and consequently the supply of the Pacific coast will always afford a remunerative market for this substance.

IRON VESSELS IN FRANCE.

Under the title *Navires en Fer et a Voiles*, a very remarkable work has just appeared in France, the author of which is M. Lissignol, engineer of the Imperial School of Mines, and for some time second engineer to the French Transatlantic Steam Navigation Company. The object of the book is to show—1. That the merchant navy in France is not in the state in which it might and ought to be. 2. That a marked improvement would undoubtedly take place in its position if it would resolutely substitute iron sailing vessels for wooden ones. 3. To show that iron vessels may in many respects be made superior to wooden, both as regards construction and navigability, and that, all things taken into account, they

are in reality cheaper; and to give a technical account of the building of iron ships, and of the expenses thereof. After presenting a brief sketch of the progress of iron sea-going ships in England since the construction of the first one, the Aaron Manby, in 1821, M. Lissignol, explains as follows why there was not a corresponding progress in his own country:—"In France," he says, "our merchant navy had for a long time an excuse for its immobility. The high price of iron was, in fact, one of the circumstances which retarded the generalisation of metallic vessels indispensable to the conservation and the prosperity of our commercial fleet. But other causes have contributed to the same result. All the erroneous ideas, all the prejudices which have been victoriously combated in England, still reign in our country. In 1855, when (on account of the Crimean war) wants which our shipping could not satisfy induced the Government to admit free all the materials necessary for the building of ships, and to authorise the nationalisation of foreign vessels on payment of a duty of 10 per cent., our shipowners did not think of acquiring iron ships—they confined themselves to purchasing wooden ones, the cheapness of which was the only and the deceptive merit. At a later period, when the treaty of commerce with England had reduced the price of iron sufficiently to render constructions in that metal almost the same price as those in wood, old habits continued to prevail. Prejudice is still so strong that, even this year, a superb sailing vessel in iron, built in France, and offered for sale at a reduced price in consequence of exceptional circumstances, was not able to find a buyer in any of our ports. At the present moment we scarcely count ten iron vessels in our sailing fleet, notwithstanding the striking example set by our neighbours, and the good results they have obtained." M. Lissignol insists on the superiority of iron ships over wooden ones for these reasons:—"1. They carry more with the same crew and the same expense of fitting out. 2. They cost less for keeping up and for repairs. 3. Their duration may almost be said to be unlimited, since nominally it exceeds forty years when the vessel is well built, and, consequently, the sum to be counted annually for the cost of it is much inferior to that necessary for a wooden vessel. 4. They present guarantees of security much superior even in case of accident, and, consequently, lower rates of assurance for a much longer period than the total duration of the most perfect wooden vessel. 5. They sail more quickly, and, consequently, make a greater number of voyages in the same time. 6. They offer extreme solidity, permitting the carrying without fatigue of the heaviest cargoes, which the best vessels in wood cannot receive with impunity." Our author finds yet another reason in favor of iron ships:—"With these qualities the iron vessel is eminently calculated to permit a reduction of freight in a great proportion without compromising the profit of the shipowner. If, therefore, the law of 1866 [he adds] exposes us to foreign competition by establishing equality between all flags, the construction of a good sailing fleet in iron is one of the most efficaceous means of competing with advantage, especially against such of our rivals as continue to remain in the old traditions. Even the wooden cotton vessels of the Americans would inevitably disappear from our ports if we knew how to draw the freight from them with iron ships properly built and energetically commanded—especially at the present moment, when new and inopportune laws on taxation augment greatly the expenses which weigh on the merchant navy of the United States."

THE DUNDERBERG—THE OCEAN TRIAL TRIP.

One of the chief features of the celebration of Washington's Birth day, was the going to sea of the great iron-clad ram Dunderberg, on her final trial trip. The construction of this mighty engine of war has been already thoroughly described in the *Tribune* of the 30th of last July. But a few words in this respect will be now necessary. The hull of the Dunderberg is 380 feet 4 inches in length, 72 feet 10 inches in beam, with a capacity of 5,090 tons (old measurement). The side armor is of the best hammered iron, manufactured into slabs from 12 to 15 feet in length, by 3 feet in breadth, with a thickness of 3 1-2 inches; the plates being secured to the armor cushion by 1 1-2 inch bolts. The plates are placed vertically and not horizontally, as with armored vessels of European manufacture. The ram is the great feature. To form this ram the vessel has been made into a solid mass of timber from her stem extending back 50 feet; thus rendering it impossible for any shock to break it off. The ram itself is encased in a heavy jacket of wrought iron, sufficient to protect it not only from the shot of the enemy, but also from abrasion in contact. The vessel has four decks, viz: The spar-deck, covered with heavy wrought iron plates; the gun-deck, or fighting room; the engine-deck, and the fire-deck. The casemate does not cover the entire hull. There is an ample lower space extending beyond it both at stem and stern. A portion of the latter space is occupied as the ward room, and the remainder as an impenetrable iron overhang to protect the screw; while the low, flat space at the bow comprises the mighty ram itself, bearing at its extremity the long submerged cut-water, which would first strike the side of a hostile ship, in case of a collision. The vessel is now fully rigged, and has nearly all her appointments complete. She has only six guns on board at present, but these are monsters. They are all Dahlgren's, and consist of an 11 inch gun at the bow and stern, and one 11-inch and one 15-inch gun on each side. Altogether, she is considered by her builder and designer, Mr. W. H. Webb, and by competent engineers, as by far the most formidable vessel of war ever constructed.

THE TRIAL TRIP.

The Dunderberg made a short trial trip some months ago. On this occasion it was demonstrated that she sailed swiftly and easily at the same time; but her owner was still anxious to prove that she was in every respect a sea-going ship, as well able to withstand the dangers of the broad ocean as any frigate ever built; and this was one of the main objects of the test she underwent on Friday and Saturday. At 9 o'clock on Friday morning the dock where the vessel lay, at the foot of Sixth street, East River, was thronged with people who patiently stood in the snow, waiting to see the great ship float away on the tide. The number of invited guests on board was few. They consisted principally of the Naval Commission, who were to report the result of their observations to the Navy Department at Washington. The gentlemen assigned to this duty were Captain Pennock, Chief of the Commission; Captain Mulhanney, Chief of Ordinance; Captain Harmony, Chief Engineer, Mr. W. W. Wood, Chief En-

gineer Long, Chief Engineer Fithian, Assistant Engineer Purse, Lieutenant Buckner, Assistant Inspector of Ordnance, and Mr. Brandt, Chief Clerk at the Ordnance Department at Washington. These gentlemen, most of them stationed at the Brooklyn Navy Yard, represented the interests of the Navy Department. Their names will alone be a guarantee that they were well chosen for the duty assigned them. The services of Commodore Pennock during the war are well remembered; Captain Mulhanney lost an arm while commanding the steam frigate Oneida in the terrible conflict of Mobile Bay; Captain Harmony also commanded different vessels with efficiency throughout the war, and the others have also rendered commendable service. It will require a little space to state the object of the Commission thoroughly. Mr. Webb, the builder of the Dunderberg, made a contract with the Government to build an iron-clad on the Monitor, or turret principle, for the sum of $1,250,000. He accordingly built the present vessel, which has no turrets, at a cost of about $1,750,000, which the Government refused to accept, because the construction of the vessel was different from that of the vessel contracted for. About three-fourths of the contract money had been already advanced to Mr. Webb, who thereupon proffered two propositions. First, to sell the vessel to the Government at cost price; second, to refund the money advanced, with seven per cent. interest for its use, and be permitted to dispose of the vessel to a foreign power—he agreeing thereafter to build for the Government such a vessel as was formerly contracted for, at the contract price, in one year. Both of these propositions have been either declined or evaded, and the object of the Commission on the recent test, was to render such a report as would render the Government able to determine one way or the other.

In spite of the impatience of those on board and on shore it was not until noon that the Dunderberg began to move slowly from her moorings. With the assistance of two tug-boats she at length floated into the stream, and glided toward the bay amid the acclamations of the thousands who lined the ends of the piers on either shore. But the use of the tugs was soon dispensed with, and by her own powerful screw the immense structure swam slowly through the water. Mr. John Roach, constructor of the engines, was also on board. The vessel had an efficient pilot in Mr. Callahan, and was ably commanded by Capts. Babcock and Comstock. The officers on board and in charge were Messrs. Erastus W. Smith, Constructing Engineer for Mr. Webb; Thomas Wagner, Constructing Engineer for Messrs. John Roach & Sons, Etna Iron Works; and Messrs. Robert Robertson, Ethan Rogers, and Edward Marslin, Assistant Engineers in charge. The early portion of the day had been exceedingly dubious, threatening fog and storm, but the sunlight broke through the clouds in silver splendor as the vessel floated down the stream, and there were abundant promises of fine weather. It was impossible to cross the bar at Sandy Hook before 9 o'clock at night, and the interval of time had to be spent in the inner waters. Gracefully rounding Battery Point, the massive structure steamed up North River as far as the foot of Tenth-st., and then turned down stream. The marvelous ease with which the great ship obeys her helm is one of the most gratifying results of the enterprise. At the foot of Tenth-st. she turned, making a complete half-circle in four minutes and a-half—equivalent to describing an entire circle in nine minutes. This

is the most surprising in a vessel of her size and weight. Standing upon her broad deck, and watching the indications of the shore, you see her stern wheel around with the ease of a yacht, and, almost before you expect it, she is heading in just the opposite direction. The vessel proceeded down the harbor and then returned. Arriving opposite Governor's Island she gave her first salute. We stand upon the upper deck. The iron floor seems like marble beneath the feet, it is so solid and firm. Indeed, it seems strange that we should be gliding through the waves, for our foothold seems more like that of an island than a ship. But the rock-like structure thrills for a moment vibratingly beneath the feet, there is heard a dull, muffled roar, and the next instant the flame and smoke gushes from the side as one of the great 11-inchers speaks in thunder to the shore. Then, one after another, the other guns volley forth their burdens of smoke and sound, scarcely vibrating the deck, and the mighty fort floats on with hardly a tremor to tell of the gigantic machinery which impels it. While thus moving about the bay and rivers, our reporters had a good opportunity to examine the novel craft; and there was much to engage the attention of every admirer of the curious and useful. The spar-deck is a noble space. You tread on what appears to be solid iron. Above are the two tall masts, with their sails furled, and the taut new rigging giving a general sea-going air to the whole structure, while you have the consciousness that beneath you is that grand iron-sided gun-deck, with its mighty cannon and busy crew. Standing at the bow, you look over the iron-plating of the stem, and far beyond it descry the slight ripple of the water where the sharp, submerged cut-water, the razor-edge of the ram, parts the element as the vessel glides along. Looking from the stern, you look over the flat deck covering the ward room, and over the heavy-plated grated overhang which covers the shaft, and can discern a short distance beyond the boiling disturbance of the water where the great propeller-flakes are whirling in their work of locomotion. Fountains of spray and brine also spring constantly through the gratings of the overhang, as the vessel bumps upon the waves. The hardy pilot stands at his post in the port boat, heedless of the storm; the captain gives his few orders in a brief, decided tone; the numerous crew—green though they are—appear to move like clock-work, and, duck-like, the great ram cuts the waves as you scan her proportions, rigging and spars. But, to derive the best impression of the power of the Dunderberg, one must go below, and, standing at one extremity, view the grand gun-deck. This is, indeed, a tower of strength. Six mighty guns stand silently waiting at the open ports. Each has its crew lounging about the muzzle, and but a little word of command, a few moments of exertion, are required to place them in readiness for their mission of destruction. The vacant ports are also open, and the immense thickness of the sides of the ship immediately strike one upon looking through the ship. A stray shell may enter a port-hole and explode; but otherwise it appears impossible that the sides should be perforated. Descending another companion-way, we reach the engine-deck, and have an opportunity of witnessing the gigantic machinery whereby the entire vast structure is propelled and maneuvered. The Dunderberg is propelled by a single screw. The engines are of the back-acting horizontal type, and are supplied with cylinders 100 inches in diameter, with

45 inches stroke of piston. Enormous as is the machinery, it seems to work with exceeding ease and precision. Proceeding toward the stern, and one may enter the long tunnel-shaped apartment containing the shaft of the screw. And still further back, far into the tunnel may be heard the measured beating of the great flukes in the water outside. Descending yet another ladder, and one arrives at the fire-decks, where the furnaces are in full blast. From its extent and general aspect, this is one of the most infernally suggestive scenes which it has been our lot to witness for many years. The furnaces, 60 in number, are arranged along the sides in regular tiers, flaming, blazing, roaring and scorching like so many gridirons in the depths of Erebus; while the hundred firemen, begrimed with smoke and sweat, move about phantom-like, punching this fire and shovelling more coal into that, like so many imps of darkness, and only needing the conventional pitchfork in each hand to be transformed into veritable retainers of the Evil One. There is no motion of the ship to be felt here. Were it not for the memory, one might fancy himself to be in the bowels of the earth, surrounded by the gnomes and goblins who stir up the earthquakes and generate the volcanoes. But everything is in perfect order. Each man stirs up this, or punches that, or rakes this fire apparently just at the right moment; and, coming up in the open air again, we find that the vessel still moves duck-like and easily through the waves.

OUTSIDE THE BAR.

It was not till after 9 o'clock at night that the pilot ventured to cross the bar at Sandy Hook. But by 10 o'clock the bar was safely crossed, and the Dunderberg was bearing out ocean-ward, with the easy assurance of any vessel that plows the seas. This assurance was not, however, felt by everybody on board. One of the Naval Commissioners thought the occasion so serious that he had insured his life before starting; and there was others not less apprehensive of the result. Indeed, considering the immense top-heaviness of the Dunderberg—the enormous weight of metal above water compared to the occupation of the vessel below the surface, it is not strange that there should be some risk in going to sea in her. It happened that the sea outside the bar was very smooth for this season of the year. There was a slight roll of the vessel when she struck the ground swell, but, independently of this, there was no perceptible motion at all from the action of the sea. Nearly all the guests on board the ship passed a very uncomfortable night, the atmosphere being very cold, and no accomodations for sleeping having been prepared. One might as well ask a friend to visit his house, and after supper show him the door-step for a mattrass, as invite a guest to pass a winter's night on a ship, without offering him even a blanket to cover him from the freezing weather, or a pillow whereon to rest his weary head. But this has little to do with the success of the Dunderberg. After crossing the bar she proceeded eastward about 50 miles, until about 2 o'clock A.M., and then returned. In the early morning all of the guns were tested with shell. The shooting proved very satisfactory. The guns were handled surprisingly well, considering that their crews were not practiced, and everything proceeded well. In firing the stern-gun the doors in the ward-room immediately underneath were somewhat shattered by the concussion.

After crossing the bar, on Saturday at 12 o'clock, the Dunderberg, proceeded toward New-York. The weather had been fine until this time, but now it began to snow furiously, and the vessel was enveloped in a mist, through which it was difficult to steer. She had been making an average speed of eight knots an hour, but now, upon passing between forts Lafayette and Richmond, additional steam was cracked on, and for a few minutes a velocity of 12 knots an hour was maintained. All of the guns were loaded, and when near Governor's Island, a salute of the entire armament was given with stunning effect. It was here that an accident occurred, which was rather ludicrous, but which might have been very serious in its consequences. It was about 3 o'clock p.m., and all the guests were at dinner in the ward-room. The several courses had been discussed, and the champagne was flowing, when *bang* went the first gun of a grand salute without alarming anybody. *Bang!* went the second gun, and *bang!* went the third. Now it happened that the third gun was the stern gun, the muzzle of which projected immediately over the ward-room, where the banquet was in progress. The effect was instantaneous and terrific. A blinding flash leaped through the ward-room; the sky-lights gave with a crash which scattered their panes in atoms, and covered the guests and tables with flying fragments of glass. Many people were frightened.

While practicing in the harbor the Dunderberg made one run of six miles in 30 minutes—12 miles an hour, there being at the same time about 41 revolutions of the screw per minute. She finally anchored in North River, off the foot of Warren-st. at 5 o'clock P.M. During the entire trip the officers of the investigating commission were indefatigable in their observations of the working and general efficiency of the vessel. Nothing will definitely be known in respect to their opinion until their report is finally made to the Department. But it was generally understood that the result of their observations exceeded their highest expectations, and that their report will be highly favorable. Every one on board the Dunderberg appeared to be highly gratified with her efficiency, and every one expressed the hope that she would not be permitted to pass out of the possession of the United States Government.

THE ILLINOIS CHESTER COAL FIELDS.

BY PROF. WATERHOUSE.

Some researches which I have recently made upon the subject of our iron interests have led me incidentally to investigate our available resources of coal fit for the manufacture of iron. The following results are derived from authorities which seemed entitled to credence. If there are errors in the statements, it is thought that they are not of sufficient magnitude materially to effect the soundness of the general conclusions.

The chester coal bed is located in Randolph, Jackson, and Perry Counties, Illinois. Eighteen thousand acres has been tested, and three strata

of coal found. The situation and richness of these beds are indicated in the following figures:

Veins.	Depth.	Thickness.
First	36 feet.	6 feet.
Second	77 "	4½ "
Third	119 "	6 "

The quantity of coal in the area already examined is, according to the common methods of measurement, 450,000,000 tons. So vast an amount fatigues the imagination. The quantity is practically inexhaustible. The coal deposits of Illinois alone are said to exceed those of the United Kingdom of Great Britain.

The Chester mines are accessible and convenient. There seems to be a providential design in their location. In the immediate neighborhood of our colossal mountains of iron there are immense beds of coal fit for the purposes of smelting. The coal field lies only twelve miles from the Mississippi River, fifty from the iron mountains of Missouri, and seventy-two from St. Louis by river. A railroad from Chester to the mines is now contemplated. This road will connect with the St. Louis and Cairo railway, which has been already surveyed. It will be twelve miles long, and cost $300,000.

The quality of the Chester coal is superior. Its freedom from impurities fits it for the manufacture of iron. It has less than one per cent. of sulphur, and is comparatively free from bitumen. It has been tested in the blast furnaces of Ironton, Ohio. Tried by practical men, it has borne the severest tests and proved its superiority to the coal from the mines of Brier Hill. Heretofore this Ohio coal has been regarded as the best in the country, but now it must yield its pre-eminence to the Chester mines. Iron manufacturers assert that this Illinois coal makes a better and stronger metal than the Scotch pig.

The value of these exhaustless coal fields to the Western country may be inferred from the fact that there are, in the whole Mississippi Valley, but three other places where coal suitable for the manufacture of iron is found.

The mines of Pittsburgh yield golden revenues. The shipments from that port during last November were 2,600,000 bushels, and the net profits $800,000; 650,000 tons were landed at Cario for marine and manufacturing uses. St. Louis annually consumes 400,000 tons of coal, at an average of $3 75 a ton. In 1866 Pennsylvania shipped to the tide water upwards of $67,000,000 worth of coal. There is no substantial reason why the Chester mines should not yield a corresponding wealth.

The strongest economic motives urge the West to develope its own coal-fields. Coal from the Chester beds can be delivered on the banks of the Mississippi at $1 50, and at St. Louis for $2 20 a ton.

This coal can be used for manufacturing purposes. But it is a strange illustration of the indifference of Western men to their own interests that blacksmiths within thirty miles of the Chester mines are using for their forges an inferior coal from Pennsylvania. The freight from Pittsburgh is more than the total cost of the Chester coal. The Pittsburgh coal must be converted into coke before it can be used for smelting iron ore; but the Chester coal requires no change. It can be used in its original state.

Steamboatmen prefer this coal. It generates more steam, and is free from clinker. On the lower Mississippi, Pittsburgh is bringing $6 a ton; Illinois coal can be furnished for one third of this price.

Dr. Litton, Professor of Chemistry in Washington University, has recently analysed two specimens of Chester coal, with the following results:

Moisture	2.78 per cent.
Volatile combustible matter	31.62 "
Carbon in coke	61.23 "
Ashes (light colored)	4.37 "
Coke	65.60 "
Sulphur	00.37 "

Sulphur and bitumen are the chief elements which unfit coal for the manufacture of iron. The amount of these substances in the Chester coal is surprisingly small.

The early doubt that mineral coal could be used, without coking, to to make iron is now dissipated by conclusive facts. In Pennsylvania and the Mahoning Valley raw mineral coal is not only employed in making iron, but it is actually driving charcoal furnaces out of competition. Raw coal affords a far intenser heat than coke. The richness of our ores and the superiority of our coal greatly increase the productive capacity of our furnaces.

The fortunate invention of the Bessemer process of smelting iron will still further enlarge the results and diminish the cost of production. But even if it is necessary to reduce the Illinois coal to coke there is still a profitable difference in our favor.

	Per ton.
The cost of coking Pittsburgh coal is	70 cents.
The cost of coking Chester coal is	50 "

But practical experiments show the fitness of Chester coal, in its raw state, for the manufacture of iron. The importance of this fact can scarcely be exaggerated.

It will lead to the erection in the vicinity of St. Louis of the largest iron works in the United States. It is difficult to magnify the possible extent of this industry. Thirty thousand tons of iron were recently shipped from Ironton to Pittsburgh to fill a single order. Doubtless a portion of the iron manufactured from this ore is brought back to St. Louis. Our dealers would, therefore, incur a triple expense.

Freight of ore to Pittsburgh, per ton	$7 00
Freight of manufactured iron from Pittsburgh, per ton	8 00
Cost of manufacture, per ton	8 00

Upon the basis that it takes $1\frac{1}{2}$ tons of ore and $3\frac{3}{4}$ tons of coal to make 1 ton of pig metal, the relative cost of manufacture would be as follows:

Cost of ore necessary to make one ton of pig metal at Pittsburgh	$20 25
Cost of ore necessary to make one ton of pig metal at St. Louis	5 70
At the same price for coal and limestone flux, the difference per ton in favor of St. Louis would be	$14 55

Allowing $1 a ton for coal, and $1 50 a ton for limestone, a daily product of 24 tons of pig metal would cost at

Pittsburgh	$588 00
St. Louis	226 80
Difference in favor of St. Louis furnaces	$361 20

But our previous figures show that the cost of the Chester coal is less than one-half that of the Pittsburg coal. These statistics ought at once to arouse the energy of our capitalists, lead to the development of the Chester coal-beds, and cause the erection of extensive rolling mills in the neighborhood of St. Louis. Nothing would conduce more to the prosperity of this city. Millions of money are now annually lost to the State which ought to enrich our own manufacturers. It is estimated that if we made our own iron, instead of importing it from Pittsburg, we should save 25 per cent. Our railroads would save $2,000 a mile by using bars of our manufacture. In 1867 the railroads of Missouri will require 50,000 tons of rails. The saving on home-made bars would, in a single year, amount to one million dollars.

Irrespective of the difference between the prices of Chester and Pittsburg coal, a furnace at Pilot Knob with a daily capacity of 24 tons, would save $250 every 24 hours. The quantity of coal necessary to meet the future demands of our furnaces will be immense. Two and one-half tons of coal are required to smelt one ton of ore containing 66 per cent. of iron; and 3¾ tons to make one ton of pig metal.

In the Mahoning Valley the daily consumption of coal in

	Tons.
28 blast furnaces is	1,120
8 rolling mills	2,000

The following figures show the great savings in the use of Chester coal:

Cost per ton of mining Pittsburg coal	$1 75
" " " Chester coal	1 00
" " reducing Pittsburg coal to coke	70
" " " Chester coal to coke	00
Difference in favor of Chester coal	1 45
It requires to smelt one ton of pig metal three tons of Chester coal, worth	4 50
Or 125 bushels of charcoal, worth	12 50

Compared with the magnitude of our opportunities, the iron works of St. Louis are insignificant. The ore shipped over the Iron Mountain Railroad in 1866 was 10,000 tons; but the daily consumption of railroad iron in the Mississippi Valley is computed at 600 tons. One hundred and eighty thousand tons of iron bars, worth at present market rates $18,000,000, are annually necessary to supply the domestic wants of the West. Only energy and capital are requisite to make St. Louis the seat of the largest iron manufactories in the world.

A dozen years ago England had 600 furnaces in operation, with an aggregate yearly capacity of 3,600,000 tons, and an annual productive value of more than $100,000,000. It was in view of such resources and enormous industrial wealth that Chancellor Gladstone recently declared in the British House of Commons that the "United Kingdom, with its 30,000,000

of people, is as great in commerce as France and America with their 70,000,000. It is, then, our possession of coal, near what depends on coal, that has given us this extraordinary pre-eminence in commerce and industry."

St. Louis enjoys all the conditions to which Chancellor Gladstone ascribes the industrial greatness of England. In the immediate vicinity of this city there is an exhaustless supply of coal, iron, limestone and fire clay.

The nearness of our iron mountains to coal of a suitable quality and quantity to smelt them, preordains this city to be the great central machine shop of this continent. A direct revenue of annual millions will yet repay our capitalists for investments in this branch of business. But the collateral benefits of this success would be immense. The establishment in this vicinity of iron works sufficiently large to answer the needs of this valley would bring tens of millions annually to our municipal coffers. It would give a powerful impulse to the growth of St. Louis, improve our markets, and quicken the activity of every trade. If this great enterprise can be carried into successful execution, no rivalry can endanger the pre-eminent greatness of St. Louis.

CONDITION OF THE FIRE INSURANCE INTEREST.

It was not without good reason that the representatives of the Fire Insurance interest recently assembled in convention to deliberate upon the serious aspect of their affairs. During the last two years there has been such a grave increasein their losses that the companies found the rates upon which they had effected insurances quite inadequate to cover the actual risks; and some have suffered a severe drain upon their resources. The insurance institutions are the less prepared to meet this adverse course of affairs from the fact that a severe competition had induced them to lower their rates much below a conservative limit.

The facts presented to the convention were simple, and the remedy as plain. The case was clear that, if the present rate of losses be continued, with the current tariff of premiums, most of the companies must at no distant date go into liquidation. The only step that could possibly meet the case was a prompt increase in rates, in something like the same ratio as the losses had increased. This course the convention, with great unanimity, adopted; and in so doing they showed but a just regard for the conservation of the large amount of capital invested in their enterprise, and for the protection of the immense interests insured.

The main conclusion arrived at was therefore businesslike and to the point; but it should by no means be considered as all the action the condition of this interest requires. While the advanced rates may be considered justifiable as a temporary expedient, providing against an extraordinary exigency; yet a rigid inquiry should be instituted into the causes which have rendered this resort necessary. It is not to be presumed that the public will be long satisfied to pay the new rates, nor ought the continuance of the advance to be long required. The causes of fires are, to a certain extent, within control; and it is the business of

the insurance companies to institute a thorough inquiry into the condition of affairs which has produced the late extraordinary frequency of fires, and into the means which may be devised for reducing risks. It will not do to assume that the present rate of losses is altogether extraordinary and temporary, and that, as risks will soon return to their wonted ratio, all that is required is an advance of rates during the period of exceptional losses. We have seen that the companies are at any time subject to an increase of conflagrations, seriously impairing their solvency and the security of the insuring public; and the fact of their being exposed to such contingencies will greatly shake public confidence in the ability of the associations to carry their risks, unless some measures be adopted calculated to lessen the liability to fires in our large cities.

The insurance companies assign as one reason for the large increase of losses that an unusual number of fires have arisen from parties insured becoming incendiaries, in order to make money upon their insurance. As it is a demonstrated rule that incendiary fires are always most numerous in times of commercial depression, it is quite probable that the specially heavy losses now being incurred by business men may have more or less contributed to the late increase of fires. But this alone cannot account for the augmentation of risks. Nor is it to the interest of the companies to attach undue importance to this circumstance, as they appear disposed to do. The large majority of policy holders are honest; and they will naturally ask the question whether it is not better to carry their own risks rather than submit to a large increase of rates to cover the losses caused by recklessly dishonest parties. The public have a right to expect of the insurance companies that they exercise a most searching scrutiny into the degree of risk arising from this cause, so that they be not needlessly taxed, by an increase of premiums, to cover the destruction caused by incendiaries. The true remedy in this case is in prevention, rather than an increase of rates.

The companies also affirm that very unusual losses have occurred in connection with cotton insurances. Of this there can be no doubt. The receipts of cotton at this port have been unusually large, and we have no proper warehouses for storing it. Besides, much of it has been received in such condition that it required to be repacked; and the rebaling by workmen who are allowed to smoke during the process has been attended with great risk. The immense stock held here, and our present accommodations for holding it, have led to its being stored in such solid masses that when fire broke out the water could be brought to bear upon the huge piles very imperfectly. Nor is it improbable that cotton has at times been fired for the express purpose of creating a chance for gain upon the salvage, the profits made upon charred cotton having in many cases reached 200 per cent. Here, again, is a case calling for investigation by the insurance interest; for the cotton trade must not be driven away from us by excessive rates, nor must ordinary policy holders be called upon to pay for the carelessness of cotton-packers and the incendiarisms of salvage speculators.

These and other special causes have been assigned as the true explanation of our late increase of fires. No definite result, however, can be reached, because there are no facts from which we can draw our conclusions; and besides, no remedy is proposed except a continuance of high

rates. To be sure, it has been suggested that a rule be adopted limiting the amount of insurance to three-fourths the value of the property insured. This, it is supposed, would neutralise the motive to incendiarism on the part of insurers; and in this view there is doubtless force. But on the other hand, there are insuperable objections to the proposal. It would operate most seriously against the trade of the port were it impossible to protect consignments against fire risks to the full amount. A large proportion of merchants would feel that an important motive to insurance was then taken away. In case of the total destruction of their stock, the policy would perhaps cover that portion held on credit, while the remainder, which was strictly their own, would be a total loss; in other words, the insurance would cover their creditors but not themselves. Right or wrong, this is a view which many would doubtless act upon. There are many other grave objections to this proposal; but there is so little prospect of its being adopted it is unnecessary to mention them.

The most effective, if not the only remedy that the case admits of, is, we think, to be found in a thorough examination into the causes of all fires, and also in the non-payment of the amount insured until it is at least established that the loss is not of incendiary origin. A committee or board should be organized, the members to be chosen by all the companies, whose duty it should be to make this examination. If this were done the insurance business could be reduced to a proper basis, and no insurer would be called upon to pay for his neighbor's dishonesty or for his neighbor's greater risk. At present, no sooner does a company hear of a loss than it hurries to the insured with check in hand to liquidate it, thus making a bid for future business. This is clearly wrong. Of course, no unnecessary impediment should be put in the way of prompt payment, but it is due alike to the company and its patrons that there should first be a proper investigation.

Such a committee as we have suggested would also find assistance in their work by an examination into the causes which give rise to such an enormous excess of losses in our large cities over those of Europe. In London, with a population thrice that of New York, the amount of losses is far less than in this city. There the rate of insurance, on average trade risks, is $\frac{1}{8}$ of 1 per cent.; while here it is fully six times that ratio. In Paris the losses are far less than even in London, fires being there of very rare occurrence. These facts show that the frequency of fires is a matter dependent upon conditions connected with the habits and social arrangements of the respective localities; and as those conditions are susceptible of material modification by judicious legislation and police regulations, it is clearly the business of a well conducted insurance interest to institute a broad and thorough examination of the causes of this difference. The inquiry should be conducted not by the legislature, whose investigations rarely elicit much truth, but by a carefully selected board, chosen by the insurance interest at large, and furnished with every means requisite to make their researches thorough.

RAILROAD EARNINGS FOR JANUARY.

The gross earnings of the specified railroads for the month of January, 1866 and 1867, comparatively, and the differences (increase or decrease) between the two periods, are exhibited in the subjoined statement:

Railroads.	1866.	1867.	Increase.	Decr'se.
Atlantic and Great Western	$504,992	$361,137	$.....	$143,855
Chicago and Alton	210,171	340,238	130,067	.....
Chicago and Great Eastern	90,415	93,784	3,369	.....
Chicago and Northwestern	523,566	690,832	167,266	.....
Chicago, Rock Island and Pacific	241,395	267,626	26,231	.....
Cleveland and Pittsburg	168,799	131,179	.....	37,620
Erie	1,185,746	906,759	.....	278,987
Illinois Central	582,828	660,438	77,610	.....
McGregor Western	23,097	20,000	.....	3,097
Marietta and Cincinnati	90,125	94,136	4,011	.....
Michigan Central	282,438	304,095	21,657	.....
Michigan Southern	314,598	302,714	.....	11,884
Milwaukee and Prarie du Chien	121,776	143,000	21,224	.....
Milwaukee and St. Paul	131,707	146,800	15,093	.....
Ohio and Mississippi	267,541	265,000*	.....	2,541
Pittsburg, Fort Wayne and Chicago	559,982	560,115	133	.....
St. Louis, Alton and Terre Haute	178,119	149,658	.....	28,461
Toledo, Wabash and Western	226,059	237,674	11,615	.....
Western Union	45,102	39,079	.....	6,023
Total (19 roads)	$5,748,456	$5,714,264	$.....	$34,192

The statement which follows shows the miles operated, and the gross earnings per mile of these railroads, for the same months:

Railroads.	Miles of Road.		Gross Earnings per mile.	
	1866.	1867.	1866.	1867.
Atlantic & Great Western	507	507	$996	$712
Chicago and Alton	280	368	750	925
Chicago and Great Eastern	224	224	403	419
Chicago and Northwestern	930	1,032	563	669
Chicago, Rock Island & Pacific	238	238	1,014	1,124
Cleveland and Pittsburg	204	204	827	643
Erie	798	732	1,488	1,240
Illinois Central	708	708	823	932
McGregor Western	50	50	462	400
Marietta and Cincinnati	251	251	359	375
Michigan Central	285	285	991	1,066
Michigan Southern	524	524	600	577
Milwaukee & Prairie du Chien	234	234	520	611
Milwaukee and St. Paul	275	275	479	534
Ohio and Mississippi	340	340	787	*780
Pittsburg, Ft. Wayne and Chicago	468	468	1,196	1,197
St. Louis, Alton and Terre Haute	210	210	848	713
Toledo, Wabash and Western	484	484	467	491
Western Union	177	177	255	221
Total (19 roads)	7,187	7,311	$799	$781

* Earnings of O. and M. Railroad for January, 1867, are estimated.

From the above statements it appears that the decrease in gross earnings in January, 1867, as compared with January, 1866, has been only $34,192. Eleven lines gained on the earnings of the previous year $478,276, and eight lines lost $512,468. The gaining lines were chiefly in Illinois and Wisconsin, where the snow fall has been much less than in January, 1866. On the contrary the great through lines, East and West, were badly snow-bound, and for days at a time unable to pass trains. That the business of the sections not invaded by snow has been more than usually active for January is obvious, and the interruption in the snow-bound regions is no indication of an actual falling off from the general average.

We have, then, in these statements very satisfactory results, calculated certainly to give increased confidence to the stockholders of the great dividend-paying roads.

REPORT OF JAMES W. TAYLOR TO SECRETARY McCULLOCH.

SIR—In pursuance of your letter of instructions of Sept. 12, 1866, I present some general information in regard to the production of gold and silver in the Territories of New Mexico, Colorodo and Montana, in a district of Minnesota northwest of Lake Superior, of which the lake and river Vermillion indicate the locality, and upon the eastern slope of the Alleghany range in the States of Georgia, South Carolina, North Carolina, Virginia and Maryland, with some notice of recent discoveries of gold in New Hampshire, Nova Scotia and Canada.

In a second instalment of this communication a general review of the production of gold and silver in other quarters of the world is submitted, with the purpose of indicating relatively the commercial and social importance of the treasure product of the United States.

A third division presents a summary of the domestic commerce from the Missouri River westward to the interior or mining districts of the United States, having reference prominently to the situation and prospects of railway communication with the Rocky Mountains and the Pacific coast.

The brief period and the limited means of information which have been available since the date of your commission will confine the present communication to the form of a preliminary report, postponing a fuller consideration of the topics enumerated to a subsequent occasion.

THE ROCKY MOUNTAINS.

This designation no longer includes the whole breadth of the Andean chain in the United States. It refers only to the formation known in Mexico as the Sierra Madre, or Mother Mountain, from which the Sierra Nevada of California, or the western wall of the mountain mass, diverges in northern Mexico, while the intervening plateau of table lands is now recognized as a distinct and characteristic division of the continent. The Rocky Mountains, or the cordillera of the Sierra Madre, traverses the territory of the United States in a north-northwest direction, from the 29th to the 49th parallel of latitude. The average elevation of its crest is 12,000 feet above the sea, lifting, for a breadth of 300 miles, above the altitude of its eastern and western piedmonts, which, in the latitude of Denver and Great Salt Lake, is fully 6,000 feet. Those valleys, slopes, and gorges, which supply the sources of the Missouri, Yellowstone, Platte, Arkansas, and Rio Grande rivers, are the prominent features of the Territories of Montana, Colorado and New Mexico, and will be the first topics of consideration in relation to gold and silver mining east of the Rocky Mountains.

NEW MEXICO.

If we compare a map of this Territory with any similar publication of the last century, even as early as a chart in Moll's atlas of 1720, the vicinity of Santa Fé is represented as even more populous than at present. The Spaniards thoroughly explored the valley of the Rio Grande, and their mining settlements were very numerous in the mountains of New Mexico There is a tradition that the Indians, whose labor had made the mines of

gold, silver, and copper available to their Spanish conquerors, were at length driven into insurrection, which was so far successful as completely to interrupt all systematic mining. This was about 1680, and at no subsequent period have the conditions of society and industry been favorable to the resumption of mining enterprises. At this time Indian hostilities prevented permanent labor, and almost exploration, in the remote districts of New Mexico.

Twenty years ago, when Colonel Doniphan led a column of American troops to Santa Fé and Chihuahua, Dr. A. Wizlizenus, who accompanied the expedition as surgeon and for the sake of scientific investigation, reported that gold was found to a large extent in all the mountains near Santa Fé, south to a distance of about one hundred miles, or as far as Gran Quivira, and north for about one hundred and twenty miles, to the river Sangre de Cristo. Throughout this whole region gold dust was then abundantly found by the poorer classes of Mexicans, who occupied themselves with the washing of this metal in the mountain streams, while at the Placer Mountain, about thirty miles from Santa Fé, gold-bearing quartz was worked. These statements in regard to gold are confirmed by the second annual message of acting Governor Arny, delivered in December, 1866, to the Legislature of New Mexico, who also reports the discovery of thirty lodes of gold-bearing quartz at Pinos Altos, paying from $40 to $200 per ton; of quartz veins at San José, in the Sierra Madre, intersecting each other in all directions for a mile in width and three miles in length; of a similar formation near Fort Davis, Texas; and of extensive placer mines on the San Francisco and Mimbres rivers.

Governor Arny gives prominence to these gold discoveries, but adds that silver is the prominent and most abundant mineral of the Territory. Lodes of silver, with its many combinations, are very numerous. He thinks it will be the most profitable branch of mining in that Rocky Mountain region, and enumerates as prominently argentiferous the districts of the Placer Mountains near Santa Fé, the Organ Mountains near the Mesilla valley, and the Sierra Madre near Pinos. The first and last of these localities are, as we have seen, gold-producing also. In the Organ Mountains over fifty silver mines have been discovered, the ore being generally argentiferous galena. The district near Mesilla Valley in the Organ Mountains has a mean altitude of 4,400 feet, and is intersected with ravines, affording favorable opportunities for horizontal drifts in opening the veins. There is a belt or series of veins containing six principal veins and many smaller ones, the six larger veins varying from two to fifteen feet in width. On the largest of these veins is the celebrated "Stephenson" mine. This belt of veins crosses the Organ Mountains at or near the San Augustine pass, and both sides of the chain of mountains present similar features and equal richness. The country bordering on the north portion of Chihuahua is a rich silver district. Immediately adjoining the new Mexican boundary are the mines of "Corralitos," the most successful silver mines in the State of Chihuahua, having been mined for forty years in a region most exposed to Indian hostility. Near the old town of El Paso, tradition places the locality of one of the richest silver mines known to the Spaniards, but its site was lost during the insurrection of 1680.

Dr. Wizlizenus, writing in 1847, thus proceeds with his enumeration of the mineral resources of New Mexico: "In Spanish times, several rich

silver mines were worked at Avo, at Cerillos, and in the Nambe Mountains, but none at present. Copper is found in abundance throughout the country, but principally at Los Tijeras, Jemas, Abiquin, Guadelupita de Mora, &c.; iron, though also abundantly found, is entirely overlooked. Coal has been discovered in different localities, as in the Raton Mountains, near the village of Jemez, southwest of Santa Fé, and near, but south of, Placer Mountain. Gypsum, both common and selenite, is found in large quantities, extensive layers of it existing in the mountains near Algodones, on the Rio Grande, and in the neighborhood of the celebrated Salinas. It is used as common lime for whitewashing, and the crystalline, or selenite, instead of window-glass. About one hundred miles south-southeast of Santa Fé, on the high table-land between the Rio Grande and Pecos, are some extensive salt lakes, or salinas, from which all the salt (muriate of soda) used in New Mexico is procured."

Governor Arny, in his late message, observes of the production of copper, that, before the late civil war, two copper mines were extensively worked—the Santa Rita and the Hanover—turning out about twelve tons of copper per week, and employing jointly about five hundred hands. Other copper mines had been opened, and were about to commence operations. A copper mine has lately been discovered a short distance from Fort Union, the specimens indicating a rich deposit. The locality of this discovery will render it very valuable, as it is convenient for the return wagons from Santa Fé and Fort Union to the Missouri River.

The indispensable conditions to the development of the mines of New Mexico are, first, Indian pacification; second, railway communication with New Orleans, Vicksburg, Memphis, and St. Louis; third, a geological reconnoissance.

Some additional statements, on the authority of Doctor Wizlizenus, in regard to the mineral production of the adjoining State of Chihuahua, are valuable as indicating what may be reasonably anticipated in New Mexico. Referring to the rich silver mines of Chihuahua, he remarks that they are found principally in the western part of the State throughout the length of the Sierra Madre, and in a mean breadth of thirty leagues. The ores occur generally as sulphurets, with iron or lead, sometimes as native silver and muriate of silver, and are found either entirely in porphyritic rocks, or in stratified rocks, (limestone) passing at greater depth into igneous rocks. They are worked either by amalgamation or by fire in common furnaces. For the latter process they need generally an addition of greta, (litharge or oxyd of lead.) which forms, therefore, a valuable article of trade.

The celebrated mine of Santa Eulalia, near the city of Chihuahua, produced in seventy-two years, from 1717 to 1789, $52,800,000. The abundance of lead found in Santa Eulalia makes the smelting of the ore very convenient. These mines are not exhausted; but from intrusion of water, want of capital, and the attraction of new mines, they are but little worked. Doctor Wizlizenus describes five other districts where silver ores have been found far superior in richness and extent to the mines of Central Mexico, but in which little has been accomplished on account of the invasions of hostile Indians; and he mentions gold and copper mines as holding a similar relation to the lodes of silver, as prevails in New Mexico. The annual production of silver and gold in 1846 was estimated at about $1,031,251.

COLORADO.

The summits and valleys of Colorado are the sources of the rivers Platte and Arkansas, which are affluents of the Mississippi, and of the Rio Grande, directly tributary to the Gulf of Mexico, and of the Colorado, which falls into the Pacific gulf of that name. No similar area of the Rocky Mountains is more imposing in scenery or physical relations than Colorado. Its mineral development is fully commensurate.

The traveller by the route of the Union Pacific railway, in approaching the Rocky mountains, will first traverse a formation of coal and iron. For over one hundred and fifty miles, from the Arkansas to the Cache le Poudre, bituminous coal, or a superior quality of lignite, has been discovered, at many points accompanied by iron ore. Next in situation westward—quite within the mountains, but much below their snow-covered summits—is a mineral range from five to fifteen miles wide, and extending from Long's Peak two hundred miles southwardly in Colorado, within which most of the discoveries of gold, especially of auriferous quartz, have occurred. Crossing the snowy range, on the western slope, extensive silver mines have been discovered. Governor Evans, of Colorado, in November, 1866, remarked at a public meeting in Chicago: "I have just returned from visiting a district about one hundred miles by ten or fifteen in extent, lying across the main mountain range west of Denver City, which is pervaded throughout by extensive and rich veins of silver; some are of pure silver ores, but the majority of them are argentiferous galena ores, varying in richness, many of them yielding in the smelting furnace as high as six hundred dollars of silver to the ton of ore." Salinas, or extensive deposits of salt, are accessible, as in new Mexico; and even petroleum is found near the eastern base of the mountains. The forests supply timber even for exportation to Kansas, and the mountain streams are generally available for the use of machinery and irrigation.

The area of Colorado is 67,723,520 acres, and the most sanguine view of its future agriculture is comprised in the statement by Surveyor General Pierce, in 1866, that "there are about 4,000,000 acres of agricultural land susceptible of irrigation, which will make productive farms." 250,000 acres were entered under the homestead and pre-emption acts in 1866, and 141,000 acres in 1865. A much larger area is suitable for the sustenance of domestic animals. "The whole of the plains," according to the testimony of Governor Evans, "and the parks in the mountains of Colorado, are the finest of pastoral lands. Stock fattens and thrives on them the year round, large herds and flocks being kept there in the finest possible condition. In some parts, it is true, the snow covers the grass for a part of the winter, but in other places cattle and sheep are wintered without feeding, with entire success. The celebrated parks—North, Middle, South and San Luis—are fine agricultural valleys for grass and small grains."

Gulch or placer mining, although the first form of gold discovery in 1859 has been prosecuted in Colorado with less succes than in California—a remark applicable to all the districts east of the Rocky Mountains, with perhaps the single exception of the Confederate gulch near Helena, in Montana Territory. This may be owing to the less degree of disintegration to which the veins, or gold geologically *in situ*, have been exposed.

It has been observed that on the eastern flank of the great Rocky Mountain mass volcanic and other igneous action has been less violent, the country is less abrupt, and the action of the elements has been less marked than on the Pacific slope, and therefore placers are not so frequent or productive. Whatever may be the force of this explanation, the discoveries and developments of auriferous quartz lodes in the Gregory district have mostly contributed thus far to the settlement of Colorado. This district extends from Gold Hill to Empire City, about thirty miles along the base of the snowy range, and is, on the average, about ten miles in width—an area of 300 square miles of gold-producing mountains, in which many quartz mills are in operation. It is now generally admitted that the range of gold-bearing quartz is not limited to the Gregory district, but is as extensive as the snowy range itself.

The successful reduction of auriferous rock is a problem of the future. The immense production of Siberia, California, and Australia is mostly washed from the sands of rivers or the adjacent detritus, nature, in each case, having overcome the mechanical and chemical difficulties presented by the matrix of gold. In the reduction of Colorado ores the chemical are the chief difficulties. The auriferous quartz of the Sierra Nevada, when pulverized, yields the gold readily to the attraction of quicksilver—the gold is "free;" but, with hardly an exception, a Colorado mine exhibits a most refractory combination of gold with the sulphurets of iron and copper. Nor are these the only mineral associations which often baffle all former appliances for the separation of baser metals. Quartz mining in Colorado has hitherto been unsuccessful from the failure of numerous processes and methods of desulphurization and amalgamation which had proved efficient in Europe and even in California; but during 1866 several American inventions, or new combinations of existing methods, have been introduced, and are now in course of trial. I shall not venture to describe their practical operation or decide upon their success. Hereafter, as a result of personal examination and a full comparison of opinion, it may be practicable to do so; but at present there is no subject which would more appropriately command the attention of a scientific commission.

The mechanical obstructions to working a gold mine in Colorado are very great. In working a vein or lode, the iron or copper pyrites are usually separated from surface quartz by what is called cap, or a shutting up of the vein by the wall rock. This is the great difficulty in opening a mine—it recurs in descending, but the intrusion is less and less. The Montgomery district, in southern Colorado, will afford an illustration. First, the blossom rock, desulphurized by the action of the atmosphere, was readily crushed and yielded its gold to amalgamation; but soon the surface ore was exhausted; it became necessary to traverse the cap rock, often 150 feet deep, which was a tedious and expensive process, but at length the indurated gyritous ore are reached, very productive of gold, but requiring to be removed and reduced at a great cost of time, labor, capital, and skill. Still, as some compensation, the tesmony is quite general that the mine widens and grows more productive of gold at its lower stages.

The auriferous veins of Colorado are represented to be from six inches to nine feet in width. Governor Evans claims that in most of the lodes

now worked the quartz rock yields an average of $36 per ton, but that a production threefold greater may be expected when the reduction of ores reaches the perfection of a scientific assay. Lodes in California, with present facilities of labor, transportation and supplies, are found to pay the owner if $10 per ton gross can be obtained from the rock. In Nevada, over the mountains, only 300 miles from the coast, and with very considerable advantages of transportation by turnpikes, a lode must yield $25 gross per ton to reward the owner for working it; and this statement may be made in regard to quartz mining in Colorado, while in New Mexico and Montana, even with security from Indian hostilities, a lode must yield $40 per ton to pay. If the advantages in prices, freight, etc., which exist in California, were supplied to the interior by railroads, all the mining territories would profitably develop their quartz mines at $10 per ton gross product.

MONTANA.

Of the streams which unite to form the Missouri River, the Jefferson, or most western tributary, has been the principal scene of gold discovery. In the summer of 1862 a party of Minnesota emigrants crossed the northern plains destined to the Salmon River mines. On reaching the Rocky Mountains they found parties of prospectors upon the Prickly Pear and Beaver Head branches of the Jefferson, and in the Deer Lodge Valley, upon remote tributaries of the Columbia. In September these explorations were successful on Grasshopper Creek, a tributary of the Beaver Head, and the placer mines of Bannock City soon attracted a considerable mining population. In May, 1863, a discovery of bar or placer mines was made about fifteen miles west of Bannock, on Horse Prairie Creek, another branch of the Beaver Head. It was of limited extent, but quite productive. In June, 1863, there were further discoveries of placer mines about seventy miles east of Bannock, on Alder Creek, a tributary of the Jefferson. These have proved of much larger extent and richness, extending continuously more than fifteen miles. Virginia City is in their vicinity. These two districts are respectively about fifty miles eastward from the summits of the Rocky Mountains, being within the semicircular park which the Rocky Mountains enclose between latitudes 44° to 46° and longitude 112° to 114°. A still more remarkable development of gulch or placer mining occurred in 1865, at Helena, a district about 130 miles east of north from Virginia City, but still 200 miles southwest of Fort Benton, ascending the course of the Missouri and the Jefferson. Some of the statements in regard to Confederate gulch, near Helena, are difficult of belief. It is said that during three months of the summer of 1866 three miners took 2,100 pounds of gold, or $441,000, from a space three rods square, on Montana bar, in Confederate gulch. A total production of $15,000,000 to $20,000,000 for 1866 is also claimed.

There are many inducements to exaggeration in these statements. For some years after the California discovery the demand for coinage induced large deposits at the government mints, but for the last half of the period since 1848 a great proportion of the gold and silver product in the United States has been cast into bars or ingots by private assayers. This proportion may now be stated at fully one-half. Since, therefore, the United States mints and assay office report $5,505,687 30 from Montana for the

fiscal year ending June 30, 1866, it will be safe to double that amount as the probable production in that year. A communication to the Treasury Department from an intelligent citizen of Montana only claimed $6,000,000 as the production of 1865. The following statement is more likely to be correct than the bulk of newspaper reports:

1863	$2,000,000
1864	5,000,000
1865	6,000,000
1866	12,000,000
Total	$25,000,000

Considerable progress has been made in quartz mining. Over two hundred lodes have been opened sufficiently to prove their value. The average yield of the vein-rock is stated at forty dollars per ton. There are seventeen quartz mills in the Territory, of which ten are in operation. Thirty are in process of erection. In the vicinity of the mining centres enumerated—Bannock, Virginia, and Helena—2,500 lodes represented to be gold bearing have been prospected and titles recorded.

About the 1st of June, 1864, ores of argentiferous galena, of which some indications had been previously observed, were discovered to be valuable. The first silver mines were opened on Rattlesnake creek, a branch of Beaver Head river, about fifteen miles north of Bannock. Then followed, during the summer of 1864, discoveries of similar veins in the Prickly Pear region, within three or four miles of Bannock, in a district about twenty-four miles northwestwardly of Virginia City, near gulches known as the Mill and Wisconsin, and upon the mountains enclosing Deer Lodge valley. These silver veins, although bearing more or less gold, are not necessarily connected with the gold districts hitherto explored; and a geological exploration would probably show that the silver deposits of Montana are more extensive, with a probabiliiy of becoming more productive, than the gold mines. The assays of argentiferous galena have exhibited results from $100 to $1,700 per ton. Three furnaces for smelting silver are in operation—one at Bannock, one at Argenta, on a tributary of the Beaver Head, and the third in the Valley of the Boulder, a tributary of Jefferson.

Upon the foregoing basis of exploration and discovery in Montana, the population may be estimated as follows:

Jefferson and Edgerton counties, including Prickly Pear and Helena districts	12,000
Madison County, Virginia City	7,000
Beaver Head county, Bannock City	2,000
Deer Lodge Valley, (western slope)	3,000
Bitter Root Valley, (western slope)	1,000
Fort Benton and vicinity	1,000
Other parts of the Territory	2,000
Total	28,000

It is now well ascertained that the coal, iron, and petroleum formations observed in Colorado are extended northward under the same conditions and in equal proportion along the eastern flank of the Rocky Mountains

and far into British territory. As the general level of the plains at Fort Benton and vicinity is also ascertained to be about four thousand feet above the sea, or two thousand feet less than the altitude of Denver, there is no appreciable difference of climate between those localities, and the remarks in regard to agriculture and stock-raising in Colorado will equally apply to Montana.

In the autumn of 1866 a large number of copper lodes was discovered on the head-waters of the Muscleshell river, which yield from thirty to seventy per cent. of the pure copper, in crevices ranging from four to six feet in width. The metal is found in combination with the oxide and green carbonate of copper. These copper mines are convenient to the wagon road, from Helena to the mouth of the Muscleshell, which is substantially the head of steamboat navigation on the Missouri river.

Near the old Mormon settlement at Fort Lemhi, upon the head-waters of Salmon River, in Idaho, important gold discoveries in 1866 have at-attracted population—a settlement forty miles distant from Bannock city, and having business relations almost exclusively with Montana.

UTAH.

The dominant ecclesiastical organization of Utah is adverse to mining for gold and silver, although iron and copper mines have been worked successfully in the Wahsatch mountains. The general testimony is that silver will be discovered in many localities. Sixty miles south of Great Salt Lake City veins of argentiferous galena in Rush River district have proved valuable, and mining operations, including the construction of furnaces, are well advanced. These ores assay 260 ounces of silver. Coal for the supply of Great Salt Lake City is mined at a distance of forty miles. An extensive silver district, in the southwestern angle of Utah, was lately transferred to the State of Nevada.

DAKOTA.

In addition to the Missouri and Yellowstone mines of Montana, under the average longitude of 110°, the explorations of Lieutenant G. K. Warren, in 1847, and of Captain W. F. Reynolds, in 1859 and 1860, under directions of the United States topographical office, have satisfactorily established that the Black hills of Dakota Territory, situated on the forty-forth parallel of latitude and between the 103d and 105th meridians of longitude, are rich in gold and silver, as well as coal, iron, copper, and pine forests.

The area occupied by the Black hills, as delineated on a map which accompanies Lieutenant Warren's report, is 6,000 square miles, or about the surface of Connecticut. Their bases are elevated from 2,500 to 3,500 feet, and the highest peaks are about 6,700 feet above the ocean level. The whole geological range of rocks, from the granite and metamorphosed azoic to the cretaceous formations of the surrounding plains, are developed by the upheaval of the mountain mass. Thus, at the junction of silurian rocks, gold becomes accessible, while the carboniferous strata bring coal measures within reach.

With the pacification of the Sioux Indians, and the establishment of emigrant roads, this district of Dakotah would doubtless be the scene of great

mining excitement, as the gold-field of the Black Hills is accessible at a distance of 120 miles from the Missouri river.

SASKATCHEWAN.

As early as 1862, some American explorers washed from the bed of the North Saskatchewan river, at a distance of two hundred miles from its extreme sources in the Rocky Mountains, minute particles of gold, but with no return exceeding *one cent to the pan*, or five dollars per day. In subsequent years the emigrants from Selkirk settlement, and a few American adventurers obtained more satisfactory results, there being frequent instances of ten dollars as a daily average, from bars or gulches nearer the mountains. As the Montana explorations have advanced towards the international frontier, each encampment proving more productive than its predecessors, the opinion has prevailed that the sources of the Saskatchewan would develop rich deposits of gold and silver, especially near the great centre of physical disturbance, where Mount Hooker reaches an elevation of 16,000 feet, and Mount Brown 15,700 feet above the sea, and from which the waters of the Saskatchewan, Peace, Frazer, and Columbia rivers diverge to three oceans. So prevalent is this belief in Montana that a sudden migration of thousands may at any moment be anticipated. Probably the intelligence received in Oregon during November, 1866, that American prospectors at the Kootonais mines had passed the mountains on or beyond the boundary of 49° and found rich washings, returning even $60 daily to the hand, on the sources of the South Saskatchewan, will, if fully confirmed, be the signal of a movement over the border into the Saskatchewan basin as remarkable as that which filled the valley of the Frazer river with miners from California and Oregon in 1859.

VERMILLION DISTRICT.

In 1865 attention was directed to discoveries of gold and silver northwest of Lake Superior, in the State of Minnesota. Lake Vermillion, an expansion of a stream of that name, is the centre of the district in question. The outline of this lake is very irregular. With a diameter of thirty miles, its surface is so studded with islands, its shore so broken with bays and headlands, that the entire coast line cannot be less than two hundred miles in extent. In 1848, Dr. J. G. Norwood, of Owens' geological survey, passed from the mouth of the St. Louis river, at the western extremity of Lake Superior, to the sources of the Vermillion river, and descending through the lake to the Rainy River, furnished a sketch of its natural features and mineral exposures. His statements are repeated, so far as they record the usual indications of a gold formation.

Before entering Vermillion Lake from the south, Dr. Norwood mentions a perpendicular fall of eight feet over "silicious slate, hard and gray, with minute grains of iron pyrites sparsely disseminated through it." This rock bears east and west, with thin seams of quartz between the laminæ running in the line of bearing. There are also irregular patches of quartz from eight to ten feet long, and from six to twelve inches wide, which cross the strike at right angles. The river is broken by falls three-quarters of a mile above, or south of Lake Vermillion.

The islands in the lake indicate very distinctly volcanic action, one of

them being an extinct crater. The prevalent rocks are talcose slate, which Dr. Norwood describes as "eminently magnesian, thinly laminated, and traversed by numerous veins of quartz from an inch to five feet wide, some of which contain beautiful crystals of iron pyrites." He adds, that "from some indications noticed, other more valuable minerals will probably be found associated with it." A specimen obtained about midway of the lake is catalogued as "quartz of reddish brown color; crystaline, with yellow iron pyrites, crystallized as well as foilated, disseminated through it."

These quartz veins were ascertained in 1865–66 to be auriferous. A specimen weighing three pounds, containing copper pyrites, was forwarded by the Governor of Minnesota to the mint in Philadelphia, and upon assay was found to contain $23.63 of gold and $4.42 of silver per ton of 2,000 pounds. The State Geologist, Mr. H. H. Eames, reports an abundant supply of quartz equal in richness. Other assays in New York—in one instance, by officers of the United States assay office—show results from $10 to $35 per ton. There are rumors of larger proportions, but the above are fully authenticated. Professor J. V. Z. Blaney, of Chicago, describes a vein ten feet in width, at the foot of a shaft of fifty feet, which is "indubitably gold-bearing;" and adds, "that specimens taken from its central portion, as proven by assay, would be sufficient in California, Colorado, and other successful mining regions, to warrant further exploration." Washings of the drift near the veins opened have produced gold, but in limited quantities.

The productiveness of the Vermillion mines is not yet determined, but will be tested by several mining organizations during the current year.

CANADIAN MINES.

When, in 1862, gold was discovered upon the sources of the Saskatchewan, a newspaper at Selkirk settlement, the Norwester, published statements of the existence of gold between Lake Superior and Lake Winnipeg. Since the Vermillion discovery, rumors of its extension into British America are prevalent, and suggest a probability that the mountain chain known to geographers as the Laurentian, which separates the waters of the St. Lawrence and its lakes from the tributaries of Hudson Bay, may reveal to future explorers extensive deposits of gold and silver. The basin of the St. Lawrence, including the sandstones of Lake Superior, is a lower Silurian formation; that of Hudson Bay granitic or primary, with many evidences in Minnesota, and along the Canadian shore of Lake Superior, of eruptive or igneous agencies.

Sir Roderick Murchison has frequently advanced the opinion that the productive gold districts of the world occur where the silurian, and perhaps the lower strata of devonian rocks are in contact with, or have been penetrated by, greenstones, porphyries, serpentine, granitic and other rocks of the primary formation. Gold, especially when traced to its original matrix, is found to occur chiefly in veins or lodes of quartz rising from beneath and cutting through the secondary strata or beds of which the surface was previously composed, These conditions are observed in the Vermillion district, and Professor Owen, as early as 1850, traced in this locality of Minnesota, and northeastwardly along the north shore of Lake Superior, in Canada, what he denominated a "great plutonic chain," and

"the main axis of dislocation," from which silurian sandstones extend southwardly through Wisconsin and Minnesota, while on the north the streams which are turned towards Hudson bay traverse a region exclusively granitic or primary. If, in Minnesota, an auriferous belt has marked this line of junction, we may with reason anticipate its extension eastwardly into Canada, and northwestwardly towards Lake Winnipeg. Indeed, as English explorers trace this contact of primary and silurian formations along the basins of lakes Slave and Athabasca, and the channel of the Mackenzie to the Arctic Ocean, it becomes an interesting problem for future solution, whether the auriferous deposits of British Columbia and Saskatchewan may not be extended with various degrees of productiveness along the crests which separates the waters of the Gulfs of Mexico and St. Lawrence from those of the Arctic Ocean and Hudson Bay, quite as the discoveries of this century now follow the Ural mines eastward through Siberia to the Pacific.

The intrusion of granitic rocks is not confined in Minnesota to the northeastern angle of the State. It has been traced southwestwardly, near Sauk Rapids, upon the Upper Minnesota, and even to the northwestern boundary of Iowa, in a wedge-like shape, although covered in most places by the mass of drift which constitutes so large a portion of the surface of Minnesota. A similar granitic cape, with its associated minerals, may be the explanation of the alleged gold deposits in the township of Madoc, near Kingston, in Canada West.

In regard to the Madoc mines, the only facts fully established at the date of this report are, that Chicago parties have become purchasers of fifteen acres, the principal locality of the alleged discovery, for the sum of $35,000; that an excavation of six feet, made originally in search of copper, gold in considerable quantities has been found in course sand, in decayed quartz, and also in a cream-colored quartz that abounded in a crevice and its surroundings; and that an assistant of Sir William Logan, the government geologist, has written a letter to *L'Ordre*, of Montreal, in which he says that the mine—"the Richardson"—"is as remarkable for its richness as for the manner of its existence," and that "he sees, in the Richardson, the best as well as the most encouraging of all indications for the search of gold in Upper Canada." A correspondent of the New York *Tribune*, apparently disinterested, and writing from the vicinity, January 22, 1867, asserts that "some thousands of dollars of native gold have already been secured from this mine and other adjacent localities, and sold in Belleville, Canada West, to jewellers, who pronounced it a very good quality, fully equal to that of Australia." This section of Canada is also known to abound in copper, iron, lead, slate, and marble.

The Chaudiere mines, near Quebec, are probably a development of the Alleghanian range. They have hitherto been confined to placer or alluvial mining on the tributaries of the Chaudiere. Quartz mining has not been prosecuted to any great extent, although an official publication by the Canadian Government reports assays at $21, $37, and even $95 per ton.

NOVA SCOTIA.

The gold fields of Nova Scotia consist of some ten or twelve districts of quite limited area in themselves, but lying scattered along the south-

eastern coast of the province. The whole of this coast, from Cape Sable on the west to Cape Canso on the east, a distance of about 250 miles, is bordered by a fringe of hard, slaty rocks, slate and sandstone in irregular alternations, sometimes argillaceous and occasionally granitic. These rocks are always, when stratified, found standing in a high angle, sometimes almost vertical, and with a course in the main very nearly due east and west. They seldom rise to any great elevation, the promontory of Aspatagon, about 500 feet high, being the highest land on the Atlantic coast of the province. The general aspect of the shore is low, rocky and desolate, strewn often with large boulders of granite or quartzite. This zone of metamorphic rocks varies in width from six to eight miles at its eastern extremity, to forty or fifty at its widest points, presenting in its northern bouudary only a rude parallelism with its southern margin, and composing about six thousand square miles of surface, the general outline of what may, geologically speaking, be called the gold region of Nova Scotia.

A contributor to the Atlantic Monthly Magazine for May, 1864, enumerates Tangier Harbor, Wine Harbor, Sherbrooke, Ovens, Oldham, Waverly, Stormont, and Lake Loon—a small lake only five miles distant from Halifax—as localities which have fully determined the auriferous character of the district already described, and selects for specific description, and as a specimen of other veins, the Montague lode at Lake Loon. The course of this is E. 10° N., that being the *strike* of the rocks by the compass in that particular district. It has been traced by surface-digging a long distance—not less, probably than half a mile. At one point on this line there is a shift or fault in the rocks, which has heaved the most productive portion of the vein about thirty-five feet to the north; but for the rest of the distance, so far as yet open, the whole lode remains true and undisturbed.

"Its dip with the rocks around it is almost vertical, say from 85° to 80° south. The vein is contained between walls of slate on both sides, and is a double or composite vein, being formed, first, of the main leader; second, of a smaller vein on the other side, with a thin slate partition wall between the two, and third, of a strongly mineralized slate foot wall, which is in itself really a most valuable portion of the ore channel.

"The quartz which composes these interposed sheets, thus separated, yet combined, is crystalized throughout, and highly mineralized; belonging, in fact, to the first class of quartz recognized in all the general descriptions of the veins of this region. The associated minerals are, here, *cuprite* or yellow copper, green *malachite* or carbonate of copper, *mispickel* or arsenical pyrites, *zinc blende*, *sesquioxide of iron*, rich in gold, and also frequent 'sights' or visible masses of gold itself. The gold is also often visible to the naked eye in all the associated minerals, and particularly in the mispickel and blende.

"The main quartz vein of this interesting lode varies from three to ten inches in thickness at different points on the surface level, but is reported as increasing to twenty inches thick at the bottom of the shaft, already carried down to a depth of forty feet. This very considerable variation in thickness will be found to be owing to the folds or plications of the vein, to which we shall hereafter make more particular allusion.

"The minerals associated with the quartz in this vein, especially the

cuprite and mispickel, are found most abundantly upon the foot-wall side, or underside, of the quartz itself. The smaller accompanying vein before alluded to appears to be but a repetition of the larger one in all its essential characteristics, and is believed by the scientific examiners to be fully as well charged with gold. That this is likely to come up to a very remarkable standard of productiveness, perhaps more so than any known vein in the world, is to be inferred from the official statement in the Royal Gazette of Wednesday, Jan. 20, 1864, published by authority at the chief Gold Commissioner's office in Halifax, in which the average yield of the Montague vein for the month of October, 1863, is given as 3 oz. 3 dwt. 4 gr.; for November, as 3 oz. 10 dwt. 13 gr.; and for December, as 5 oz. 9 dwt. 8 gr. to the ton of quartz crushed during these months respectively. Nor is the quartz of this vein the only trustworthy source of gold. The underlying slate is filled with bunches of mispickel, not distributed in a sheet or any particular order, so far as yet observed, but developed throughout the slate, and varying in size from that of small nuts to many pounds in weight—masses of over fifty pounds having been frequently taken out. The peculiar mineral has always proved highly auriferous in this locality, and a careful search will rarely fail to detect 'sights' of the precious metal inbedded in its folds, or lying hidden between its crystalline plates.

"Nor is the surrounding mass of slate in which this vein is enclosed without abundant evidences of a highly auriferous character. Scales of gold are everywhere to be seen between the laminæ, and, when removed and subjected to the proceeds of 'dressing,' there can be little doubt of its also yielding a very handsome return. In fact, the entire mass of material, which is known to be auriferous, is not less than twelve to fifteen inches at the surface, and will doubtless be found, as all experience and analogy in the district have hitherto shown to be the case, to increase very considerably with the increased depth to which the shafts will soon be carried. No difficulties whatever are apprehended here in going to a very considerable depth, as the slate is not hard and easily permits the miner, in his progress, to bear in upon it without drilling upon the closer and more tenacious quartz.

"The open cut made by the original owners of the Montague property, and by which the veins have been in some degree exposed, absurd and culpable as it is a mode of mining, has yet served a good purpose in showing in a very distinct manner the structure of these veins—a structure which is found to be on the whole very general in the province. The quartz is not found, as might naturally be supposed from its position among sedimentary rocks, lying in anything like a plain, even sheet of equal thickness. On the contrary, it is seen to be marked by *folds* or plications, occurring at tolerably regular intervals, and crossing the vein at an angle of 40° or 45° to the west. Similar folds may be produced in a sheet which is hung on a line, and then drawn at one of the lower corners. The cross section of the vein is thus made to resemble somewhat the appearance of a chain of long links, the rolls or swells alternating with the plain spaces through its whole extent. Perhaps a better comparison is that of ripples or gentle waves as seen following each other on the ebb tide in a still time on the beach.

"The distribution of the gold in the mass of the quartz appears to be

highly influenced by the peculiar wavy or folded structure. All the miners are agreed in the statement that the gold abounds most at the swells or highest points of the waves of rock, and that the scarcely less valuable mispickel appears to follow the same law. The spaces between are not found to be so rich as these points of undulation; and this structure must explain the signal contrast in thickness and productiveness which is everywhere seen in sinking a shaft in this district. As the cutting passes through one of these swells the thickness of the vein at once increases, and again diminishes with equal certainty as the work proceeds; below this point destined again to go through with similar alternations in its mass."

The gold of Nova Scotia is remarkable for its great purity, it being on the average twenty-two carats fine, as shown by repeated assay. The bars or ingots are current in Halifax at $20 an ounce. Assays by Professor Silliman, of Yale College, have ascertained values of $19.97 and $20.25, and the gold commissioner of Nova Scotia assumes $19.50 as the basis of his calculations of the gold product of the product of the province.

The official returns of the deputy gold commissioners for the several districts to the chief commissioners at Halifax are unusually exact and reliable in regard to the most important point of the whole subject namely, the average yield per ton of quartz crushed at the mills. By' regulations of the mining department, every miner, or the agent or chief superintendent of each mine, is required, under penalty of forfeiting possession of the mine, to make a quarterly return of the amount of days' labor expended, the number of tons raised and crushed, and the quantity of gold. These returns are not likely to be exaggerated, as a government royalty of three per cent. on the gross product is exacted. Besides the miner's report, all owners of quartz mills are also required to render official returns under oath, and in a form minutely prescribed by the provincial law, of all quartz crushed by them during each month, stating particularly from what mine it was raised, for whose account it has been crushed, and what was the exact quantity in ounces, pennyweights and grains. Upon this basis it appears that the average for all the mining districts is $30 per ton; while the maximum yield at some of the prominent mines has been $1,000 per ton at Wine Harbor, $240 at Sherbrook, $220 at Oldham, and $100 at Stormont, during the months of October, November and December, 1863. These results are independent of the great waste which attends the reduction of pyritous ores. The cost of reduction at this time does not exceed $7 per ton, owing to the moderate scale of prices for labor, supplies and fuel in Nova Scotia.

The writer in the Atlantic Monthly, already referred to, accounts for the absence of alluvial gold by the peninsular formation of Nova Scotia. The action of the glacial period would only transport the detritus of auriferous rocks beneath the Atlantic ocean. Therefore, the gold of Nova Scotia is to be successfully sought under the application of the most scientific and systematic method of deep quartz mining. His summary of these methods is so suggestive that it will be cited:

"The ill-considered system of allotting small individual claims at first adopted by the colonial government was founded, probably, on a want of exact knowledge of the peculiar nature of the gold district, and the consequent expectation that the experiences of California and Australia in

panning and washing were to be repeated here. This totally inapplicable system in a manner compelled the early single adventurers to abandon their claims as soon as the surface-water began to accumulate in their little open pits or shallow levels, beyond the control of a single bucket or other such primitive contrivance for bailing. Even the more active and industrious digger soon found his own difficulties to accumulate just in proportion to his own superior measure of activity, since, as soon as he carried his own excavation a foot or two deeper than his neighbours, he found that it only gave him the privilege of draining for the whole of the less enterprising diggers, whose pits had been sunk to the same level as his own. Thus the adventurers who should ordinarily have been the most successful were soon drowned out by the accumulated waters from the adjacent and sometimes abandoned claims. Nearly all of these early efforts at individual mining are now discontinued, and the claims thus shown to be worthless in single hands have been consolidated in the large companies, who alone possess the means to work them with unity and success.

"The present methods of working the lodes, as now practiced in Nova Scotia, proceed on a very different plan. Shafts are sunk, at intervals of about three hundred feet, on the course of the lodes which it is proposed to work, as these are distinctly traced on the surface of the ground. When these shafts have been carried down to the depth of sixty feet, or, in miner's language, ten fathoms, horizontal *drifts* or *levels* are pushed out from them, below the ground, and in either direction, still keeping on the course of the lode. While these subterranean levels are being thus extended, the shafts are to be again continued downwards, until the depth of twenty fathoms, or one hundred and twenty feet, has been attained. A second and lower set of levels are then pushed out beneath, and parallel to, the first named. At the depth of thirty fathoms a third and still lower set of levels will extend beneath and parallel to the second. The work of sinking vertical shafts, and excavating horizontal levels to connect them, belongs to what is denominated the 'construction of the mine,' and it is only after this has been completed that the work of mining proper can be said to begin.

"The removal of the ore, as conducted from the levels by which access has thus been gained, may be carried on either by 'direct' or by 'inverted grades'—that is, either by breaking it up from underneath, or down from overhead, in each of the levels which have now been described, or, as it is more commonly called in mining language, by 'understoping' or by 'overstoping.' When the breadth of the lode is equal to that of the level, it is perhaps not very material which plan be adopted. But when, as at Oldham, Montague, or Tangier, the lodes are only of moderate width, and much barren rock, however soft and yielding, has of necessity to be removed along with the ore, so as to give a free passage for the miner through the whole extent of the drifts, we shall easily understand that the working by inverted grades, or 'overstoping,' is the only proper or feasible method. In this case, the blasts being all made from the roof or 'back,' as it is called, of the drift, the barren or 'dead' rock, containing no gold, is left on the floor of the drift, and there is then only the labor and expense of bringing the valuable quartz itself, a much less amount in bulk, to the surface of the ground. The accumulating mass of the dead rock under foot will then be constantly raising the floor of the drift, and

as constantly bringing the miners within convenient working distance of the receding roof. In the case of 'understoping,' however, in which the blasts are made from the floor of the drift, it will be perceived that all the rock which is moved, of whatever kind, must equally be brought to the surface, which entails much greater labor and expense in the hoisting; and gravity, moreover, instead of co-operating with, counteracts, it will be understood, the effective force of the powder."

There is quite a concurrence of testimony that the quartz seams increase in richness as they descend, although the excavations have not, as yet, been carried to depths exceeding 100 feet.

The mining statistics of Nova Scotia exhibit very accurately the average yield per man, which in 1863 was 95 cents a day; in 1864, $1 39; and in 1865, $2 13. At the rate per diem last mentioned, each man employed produced $684 80 per annum. The Australian estimates of the production per man of the mining population do not exceed an annual average, since 1851, of $500.

The value of gold produced in Nova Scotia during the year ending September 30, 1865, was $509,080, (paying $18,038 in rents and royalties;) in 1864, $400,440; in 1863, $280,020; and in 1862, $145,500. The earliest discovery of gold occurred in 1860. The productiveness of the mines was not diminished during 1866.

ALLEGHANY GOLD-FIELD.

It can only be determined by a geological exploration, which shall embrace Lower Canada, Maine, New Brunswick, Nova Scotia, and Newfoundland, whether the gold formation of Nova Scotia is associated with the Laurentian range, or is an extension of the auriferous belt which, first observed upon the Coosa River in Alabama, extends in a general northeast direction along the eastern flank of the Alleghanies to the Potomac River, with some partial developments in Maryland, Pennsylvania, Vermont, and New Hampshire, and upon the Chaudiere River, of Lower Canada. In the latter case, the mining experience of Nova Scotia may yield valuable suggestions in regard to the auriferous lodes which are known to be very numerous in the talcose and chloritic schists of the southern Alleghanies. Since the California discovery of 1848, little attention has been given to alluvial mining in Virginia, the Carolinas, and Georgia; and until recently capitalists have acquiesced in the opinion, so confidently expressed by Sir Roderick Murchison in "Siluria" and other publications, that, notwithstanding numerous filaments and traces of gold near their surface, the Alleghany vein-stones held no body of ore downwards which would warrant deep quartz mining. At present, with twenty years' experience in gold mining; with the testimony of miners in Colorado that a lode apparently closed by cap-rock can be recovered, with increased richness, at a lower depth; with other analogies, however imperfect, from the successful treatment of pyritous ores in Nova Scotia; and with the earnest application of inventive minds to new and improved processes of desulphurization, it is evident that the working of the southern mines will be resumed, perhaps with the encouragement of a scientific survey under the auspices of the general government.

The deposits of gold at the United States mint and its branches between

1804 and 1866 from the States traversed by the Appalachian gold-field are reported as follows:

Virginia	$1,570,182 82
North Carolina	9,278,627 67
South Carolina	1,353,663 98
Georgia	6,971,681 50
Alabama	201,734 83
	19,375,890 80

If we admit that an equal quantity passed into manufactures or foreign commerce without deposit for coinage, the aggregate production would be about $40,000,000, of which fully three-fourths, or $30,000,000, was mined between 1828 and 1848.

It is not the purpose of this report to enumerate the enterprises now organizing for the development of the Alleghany mines, but to recall some evidence, mostly compiled before the California discovery, in regard to their situation and mineralogical characteristics.

(To be Continued)

TRADE OF THE STATE CANALS.—REPORT OF THE AUDITOR.

The Auditor of the Canal Department, in accordance with the requirements of the statutes, has submitted to the Legislature his annual report of the tolls, trade and tonnage of the canals of this State during the season of navigation of 1866, from which we take the following:

It appears that—

Whole amount of tolls received is	$4,436,639

Which is composed as follows:

On boats and passengers		228,468	On manufactures		153,372
On products of the forest	$940,683		On merchandise		131,021
On products of animals	10,366		On other arttcles		458,440
On products of veg. food	2,512,286	3,463,340			
On other agricultural products		1,988	Total		$4,436,639

The whole amount of tonnage arriving at tide-water by way of the Erie Canal from Western States and Canada, during the last season of navigation, was 2,235,716 tons. The whole amount of tonnage arrived at tide-water, the products of this State, during the same period, was 287,948 tons.

The whole number of barrels of flour arriving at tide-water through the canals, during the last season of navigation was	590,704
The whole number of bushels of wheat arriving during the same period was 7,534,166, which, turned into flour, calculating five bushels to the barrel, would make	1,516,833
Total in barrels	2,107,537

The total number of bushels of corn arriving at tide-water during the same period was 26,516,535. The whole number of boats, new and old, registered during the last year was 485, with a tonnage of 74,630, making an average tonnage of 154.

The total number of lockages at Alexander's lock for the season was 29,882. The greatest number of lockages at any one lock was 30,263—at Lock No. 45, Frankfort.

Comparing the season of 1865 with that of 1866 it shows an increase in revenue of $596,684, and an increase in tonnage of 1,045,566, divided among the different classes as follows:

Products of the forest, inc.	302,679		Products of animals, dec..	8,431	
Vegetable food, inc.....	101,234		Other agricult'al prod., dec	2,834—	11,265
Manufactures, inc.....	20,409				
Merchandise, inc.....	24,910		Increase.....		1,045,566
Other articles, inc.....	607,599—	1,056,831			

The whole amount of tonnage transported on the canals during the last season of navigation, ascending and descending, was 5,775,220, and is composed as follows:

Products of the forest		1,769,994	Manufactures.....	302,241
Products of animals.....	18,810		Merchandise...	179,878
Vegetable food	1,763,931		Other articles.....	1,737,047
Other agricultural products	3,319—	1,786,060		
Total.....				5,775,220

The value of such tonnage is as follows:

Products of the forest.....		$38,754,821	Manufactures.....	18,389,992
Products of animals	$7,377,796		Merchandise	100,169,21
Vegetable food.....	77,854,997		Other articles.....	37,038,718
Other agricult'l products	1,378,141—	$6,610,934		
Total.....				$270,963,676

The total movement of freight, or number of tons carried one mile during the last season of navigation, was 1,012,448,034

The total movement of the several classes composing such tonnage is as follows:

Products of the forest		$233,798,859	Merchandise.....	40,031,747	
Products of animals..	$2,190,916		Other articles.....	218,289,766	300,417,845
Vegetable food.....	475,556,914				
Other agricultu'l prod.	483,500	478,231,380	Total.....		$1,012,448,034
Manufactures	42,096,332				

The increase of lockages at Alexander's lock is 3,845. In flour and wheat, comprised in the returns of vegetable food, there has been a decrease in tonnage the past year of 159,393, and a decrease in tolls of $262,722. In corn and oats there has been an increase in tonnage during the same period of 232,639, and an increase in tolls of $389,728.

Description of property.	Tons of each class carried on the canals.	Tons of each class carried on the railroads.	Total tons of each class carried on the canals & railroads.
Produce of forest.....	1,769,994	730,605	2,500,599
Produce of animals.....	18,810	1, 22,770	1,341,580
Vegetable food.....	1,763,931	1,581,785	3,345,716
Other agricultural produce.....	3,319	445,480	448,799
Manufactures.....	302,241	1,099,382	1,321,623
Merchandise	179,878	1,334 768	1,514,646
Other articles.....	1,737,047	2,775,686	4,512,733
Total tons.....	5,775,220	9,210,476	14,985,696

The following statement shows the number of tons of each class of property carried on the canals during the season of navigation in the year 1866, and on all the railroads in the State, from the 1st of October, 1865, to the 30th of September 1866

Mileage on the canals.....	1,012,448,034
" " railroads.....	1,048,363,225

The mileage on the canals, or number of tons moved one mile, has increased since 1865 168,532,255 tons, and the mileage on the railroads has increased during the same period 181,715,685 tons.

DEBT OF SAN FRANCISCO.

The funded debt of the city and county is $4,651,667; against which sinking funds have accumulated to the amount of $1,000,000, and the provisions are deemed ample for the retirement of bonds within the several periods of maturity. The cash on hand in the Treasury is $449,388, exclusive of sinking and interest funds. The outstanding bonds and interest are classified as follows:

City bonds of 1851, due 1871, 10 per cent	$1,257,000
" " 1855, " 1875, 6 "	275,500
City and county bonds of 1858, due 1888, 6 per cent	1,133,500
" " School bonds of 1860, due 1870, 10 per cent	54,500
" " " " 1861, " " " "	16,000
" " Railroad bonds of 1862 and 1863, due in 1877 and 1878, 7 per cent	277,000
" " Judgment bonds of 1863 and 1864, due in 1883 and 1884, 7 per cent	880,267
" " Pacific railroad bonds of 1864, due in 1894, 7 per cent	400,000
" " Pacific railroad bonds of 1865, due in 1895, 7 per cent	250,000
" " School bonds of 1866 and 1867	110,000
Total	$4,651,667

The value of property included in the assessment roll of 1866 and 1867 amounts to $53,585,421 real and $42,386,049 personal estate—in all $95,972,470, of which sum about $20,000,000 will be exempt from taxation, or subject to litigation on questions pending in the Supreme Court, in which is involved the legality of taxing mortages upon property already assessed to owners of the estate.

Taxes for State, and city and county purposes, are as follows:

City and County Tax—For School Fund	35	
Street Light Fund	15	
Street Department Fund	4½	
General Fund	37½	
Total for current expenses		$1 22
Corporation Debt Fund	38½	
Bonds of 1855, (Sinking Fund)	5	
City Slip Judgment Bonds (Interest)	9	
" " " (Sinking Fund)	7½	
Pacific Railroad Interest tax	8½	
San Francisco and San Jose Railroad bonds (interest)	4	
" " " " (Loan Fund)	2½	
Total for Sundry Debts and Interest		75
Total for City and County		$1 97
State Tax—For General Purposes	30¾	
Interest and Redemption of Bonds of 1857	30	
" " " 1860	1¼	
" " Soldiers' Relief B nds	4	
" " Soldiers' Bounty Bonds	12	
" " Line Officers' Bonds	1	
Support of Common Schools	8	
Interest o Pacific Railroad bonds	8	
Construction of State Capital	10	
Militia Purposes, (In lieu of Military Poll Tax)	5	
Insane Asylum Purposes	3	
Total for State purposes		1 13
Total on each $100 valuation		$3 10

PRICE OF GRAIN—THE CENTAL SYSTEM.

The Secretary of the St. Louis Warehouse Company furnishes to the St. Louis *Republican* the following grain table, showing the value per cental of wheat, corn, rye, barley and oats, at a given price per bushel:

WHEAT.

Per bush.	Per cen'l.	Per bush.	Per cent'l.	Per bush.	Per cent'l.	Per bush.	Per cen'l.	Per bush.	Per cent'l.	Per bush.	Per cent'l.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
40.....	66⅔	90.....	1 50	1 40....	2 33⅓	1 90....	3 16⅔	2 40....	4 00	2 88....	4 80
42.....	70	92.....	1 53⅓	1 42....	2 36⅔	1 92....	3 20	2 42....	4 03⅓	2 90....	4 83⅓
44.....	73⅓	94.....	1 56⅔	1 44....	2 40	1 94....	3 23⅓	2 44....	4 06⅔	2 92....	4 86⅔
46.....	76⅔	96.....	1 60	1 46....	2 43⅓	1 96....	3 26⅔	2 46....	4 10	2 94....	4 90
48.....	80	98.....	1 63⅓	1 48....	2 46⅔	1 98....	3 30	2 48....	4 13⅓	2 96....	4 93⅓
50.....	83⅓	1 00.....	1 66⅔	1 50....	2 50	2 00....	3 33⅓	2 50....	4 16⅔	2 98....	4 96⅔
52.....	86⅔	1 02.....	1 70	1 52....	2 53⅓	2 02....	3 36⅔	2 52....	4 20	3 00....	5 00
54.....	90	1 04.....	1 73⅓	1 54....	2 56⅔	2 04....	3 40	2 54....	4 23⅓	3 02....	5 03⅓
56.....	93⅓	1 06.....	1 76⅔	1 56....	2 60	2 06....	3 43⅓	2 56....	4 26⅔	3 04....	5 06⅔
58.....	96⅔	1 08.....	1 80	1 58....	2 63⅓	2 08....	3 46⅔	2 58....	4 30	3 06....	5 10
60.....	1 00	1 10.....	1 83⅓	1 60....	2 66⅔	2 10....	3 50	2 60....	4 33⅓	3 08....	5 13⅓
62.....	1 03⅓	1 12.....	1 86⅔	1 62....	2 70	2 12....	3 53⅓	2 62....	4 36⅔	3 10....	5 16⅔
64.....	1 06⅔	1 14.....	1 90	1 64....	2 73⅓	2 14....	3 56⅔	2 64....	4 40	3 12....	5 20
66.....	1 10	1 16.....	1 93⅓	1 66....	2 76⅔	2 16....	3 60	2 66....	4 43⅓	3 14....	5 23⅓
68.....	1 13⅓	1 18.....	1 96⅔	1 68....	2 80	2 18....	3 63⅓	2 68....	4 46⅔	3 16....	5 26⅔
70.....	1 16⅔	1 20.....	2 00	1 70....	2 83⅓	2 20....	3 66⅔	2 70....	4 50	3 18....	5 30
72.....	1 20	1 22.....	2 03⅓	1 72....	2 86⅔	2 22....	3 70	2 72....	4 53⅓	3 20....	5 33⅓
74.....	1 23⅓	1 24.....	2 06⅔	1 74....	2 90	2 24....	3 73⅓	2 74....	4 56⅔	3 22....	5 36⅔
76.....	1 26⅔	1 26.....	2 10	1 76....	2 93⅓	2 26....	3 76⅔	2 76....	4 60	3 24....	5 40
78.....	1 30	1 28.....	2 13⅓	1 78....	2 96⅔	2 28....	3 80	2 78....	4 63⅓	3 26....	5 43⅓
80.....	1 33⅓	1 30.....	2 16⅔	1 80....	3 00	2 30....	3 83⅓	2 80....	4 66⅔	3 28....	5 46⅔
82.....	1 36⅔	1 32.....	2 20	1 82....	3 03⅓	2 32....	3 86⅔	2 82....	4 70	3 30....	5 50
84.....	1 40	1 34.....	2 23⅓	1 84....	3 06⅔	2 34....	3 90	2 84....	4 73⅓	3 32....	5 53⅓
86.....	1 43⅓	1 36.....	2 26⅔	1 86....	3 10	2 36....	3 93⅓	2 86....	4 76⅔	3 34....	5 56⅔
88.....	1 46⅔	1 38.....	2 30	1 88....	3 13⅓	2 38....	3 96⅔				

CORN AND RYE.

Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental
c.	$ c.	$	c.	c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
20.....	35 5-7	46.....	82 1-7	72.....	1 28 4-7	98.....	1 75	1 24.....	2 21 3-7	1 50.....	2 67 6-7
22.....	39 2-7	48.....	85 5-7	74.....	1 32 1-7	1 00.....	1 78 4 7	1 26.....	2 25	1 52.....	2 71 3-7
24.....	42 6-7	50.....	89 2-7	76.....	1 35 5-7	1 02.....	1 82 1-7	1 28.....	2 28 4-7	1 54.....	2 75
26.....	46 3-7	52.....	92 6-7	78.....	1 39 2-7	1 04.....	1 85 5-7	1 30.....	2 32 1-7	1 56.....	2 78 4-7
28.....	50	54.....	96 3 7	80.....	1 42 6-7	1 06.....	1 89 2-7	1 32.....	2 35 5-7	1 58.....	2 82 1-7
30.....	53 4-7	56.....	1 00	82.....	1 46 3-7	1 18.....	1 92 6-7	1 34.....	2 39 2-7	1 60.....	2 85 5-7
32.....	57 1-7	58.....	1 03 4-7	84.....	1 50	1 10.....	1 96 3-7	1 36.....	2 42 6-7	1 62.....	2 89 2-7
34.....	60 5-7	60.....	1 07 1-7	86.....	1 53 4-7	1 12.....	2 00	1 38.....	2 46 4-7	1 64.....	2 92 6-7
36.....	64 2-7	62.....	1 10 5-7	88.....	1 57 1-7	1 14.....	2 03 4-7	1 40.....	2 50	1 66.....	2 96 3-7
38.....	67 6-7	64.....	1 14 2-7	90.....	1 60 5-7	1 16.....	2 07 1-7	1 42.....	2 53 4-7	1 68.....	3 00
40.....	71 3-7	66.....	1 17 6-7	92.....	1 64 2-7	1 18.....	2 10 5-7	1 44.....	2 57 1-7	1 70.....	3 03 4-7
42.....	75	68.....	1 21 3-7	94.....	1 67 6-7	1 20.....	2 14 2-7	1 46.....	2 60 5-7	1 72.....	3 07 1-7
44.....	78 4-7	70.....	1 25	96.....	1 71 3-7	1 22.....	2 17 6-7	1 48.....	2 64 2 7	1 74.....	3 10 5-

BARLEY.

Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental	Per bus.	Per cental
c.	$ c.	c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
40.....	83 1-3	66.....	1 37 1-2	92.....	1 91 2-3	1 18.....	2 45 5-6	1 44.....	3 00	1 70.....	3 54 1-6
42.....	87 1-2	68.....	1 41 2-3	94.....	1 95 5-6	1 20.....	2 50	1 46.....	3 04 1-6	1 72.....	3 58 1-3
44.....	91 2-3	70.....	1 45 5-6	96.....	2 00	1 22.....	2 54 1-6	1 48.....	3 08 1-3	1 74.....	3 62 1-2
46.....	95 5-6	72.....	1 50	98.....	2 04 1-6	1 24.....	2 58 1-3	1 50.....	3 12 1-2	1 76.....	3 66 2-3
48.....	1 00	74.....	1 54 1-6	1 00.....	2 08 1-3	1 26.....	2 62 1-2	1 52.....	3 16 2-3	1 78.....	3 70 5-6
50.....	1 04 1-6	76.....	1 58 1-3	1 02.....	2 12 1-2	1 28.....	2 66 2-3	1 54.....	3 20 5-6	1 80.....	3 75
52.....	1 08 1-3	78.....	1 62 1-2	1 04.....	2 16 2-3	1 30.....	2 70 5-6	1 56.....	3 25	1 85.....	3 85
54.....	1 12 1-2	80.....	1 66 2-3	1 06.....	2 20 5-6	1 32.....	2 75	1 58.....	3 29 1-6	1 90.....	3 95 5-6
46.....	1 16 2-3	82.....	1 70 5-6	1 08.....	2 25	1 34.....	2 79 1-6	1 60.....	3 33 1-3	1 95.....	4 06 1-4
58.....	1 20 5-6	84.....	1 75	1 10.....	2 29 1-6	1 36.....	2 83 1-3	1 62.....	3 37 1-2	2 00.....	4 16 2-3
60.....	1 25	86.....	1 79 1-6	1 12.....	2 33 1-3	1 38.....	2 87 1-2	1 64.....	3 41 2-3	2 02.....	4 20 5-6
62.....	1 29 1-6	88.....	1 83 1-3	1 14.....	2 37 1-2	1 40.....	2 91 -3	1 66.....	3 45 5-6	2 04.....	4 25
64.....	1 33 1-3	90.....	1 87 1-2	1 16.....	2 41 2-3	1 42.....	2 95 5-6	1 68.....	3 50	2 06.....	4 29 1-6

OATS.

Per bush.	Per cent'l.	Per bush.	Per cent'l.	Per bush.	Per cent'l.	Per bush.	Per cen'l.	Per bush.	Per cental.	Per bush.	Per cental.
c.	$ c.	c.	$ c.	c.	$ c.	c	$ c.	$ c.	$ c.	$ c.	$ c.
20.....	57 1-7	38.....	1 08 4-7	56.....	1 60	73....	2 08 4-7	90....	2 57 1-7	1 07....	3 05 5-7
21.....	60	39.....	1 11 3-7	57.....	1 62 6-7	74...	2 11 3-7	91...	2 60	1 08....	3 08 4-7
22.....	62 6-7	40.....	1 14 2-7	58.....	1 65 5-7	75....	2 14 2-7	92....	2 62 6-7	1 09 ..	3 11 3-7
23.	65 5-7	41.....	1 17 1-7	59.....	1 68 4-7	76....	2 17 1-7	93....	2 65 5-7	1 10....	3 14 2-7
24... ...	68 4-7	42.....	1 20	60.....	1 71 2-7	77...	2 20	94...	2 68 4-7	1 11....	3 17 1-7
25	71 3-7	43.....	1 22 6-7	61.....	1 74 2-7	78....	2 22 6-7	95....	2 71 3-7	1 12....	3 20
26.....	74 2-7	44	1 25 5-7	62	1 77 1-7	79....	2 25 5-7	96....	2 74 2-7	1 13....	3 22 6-7
27.....	77 1-7	45	1 28 4-7	63	1 80	80...	2 28 4-7	97....	3 77 1-7	1 14....	3 25 5-7
28.	80	46.....	1 31 3-7	64	1 82 6-7	81....	2 31 3-7	98....	2 80	1 15....	3 28 4-7
29.....	82 6-7	47..	1 34 2 7	65.....	1 85 5-7	82	2 34 2-7	99....	2 82 6-7	1 16....	3 31 3-7
30... ...	85 5-7	48	1 37 1-7	66.....	1 88 4-7	83....	2 37 1-7	1 00....	2 85 5-7	1 17....	3 34 2-7
31.....	83 4-7	49	1 40	67.....	1 91 3-7	84....	2 40	1 01....	2 88 4-7	1 18...	3 37 1-7
32.....	91 3-7	50.....	1 42 6-7	68	1 94 2-7	85....	2 42 6-7	1 02....	2 91 3-7	1 19....	3 40
33.....	94 2-7	51.....	1 45 5-7	69.....	1 97 1-7	86....	2 45 5-7	1 03. ..	2 94 2-7	1 20....	3 42 6-7
34.....	97 1-7	52.....	1 48 4-7	70.....	2 00	87....	2 48 4-7	1 04....	2 97 1-7	1 21....	3 45 5-7
35.....1	00	53.....	1 51 3-7	71.....	2 02 6-7	88....	2 51 3-7	1 05....	3 00	1 22....	3 48 4-7
36.....1	02 6-7	54.....	1 54 2-7	72.....	2 05 5-7	89....	2 54 2-7	1 06....	3 02 6-7	1 23....	3 51 3-7
37..... 1	05 5-7	55.	1 57 1-7								

Weights of grain per bushel are estimated in the foregoing tables:

Wheat	lbs 60	Barley	lbs 48
Corn	56	Oats	35
Rye	56		

By a vote of the New York Commercial Association of the Produce Exchange, the cental system takes effect in New York on the 1st day of May, 1867.

COMMERCIAL CHRONICLE AND REVIEW.

Adjournment of Congress—Tariff on Wool—Mr. Sherman's Finance Bill—Business for February—Stock Exchange Sales—Prices Railroad Shares—Course of Governments, Gold Exchange, &c., &c.

The last session of the Thirty-ninth Congress has now adjourned, and the long anxiety with regard to its action on important commercial and financial questions is consequently ended. As fruits of the session, we have among the more important bills affecting the mercantile interests a reconstruction act, a bankrupt bill, a wool tariff, and the compound-interest-note bill, and important amendments in the internal revenue act. The great changes that were threatened in our banking law and in the financial policy already established have, to the satisfaction of all, not been enacted. The new tariff on wool and woolens provides as follows:

On woolen manufactured goods, 50 cents per pound, and 35 per cent. *ad valorem*. On flannels valued at above 40 cents per pound, and not exceeding 60 cents per pound, 30 cents per pound; valued at above 60 cents per pound, and not exceeding 80 cents per pound, 40 cents per pound; valued at above 80 cents per pound, 50 cents (?) per pound, and in addition thereto, upon all descriptions, 35 per cent. *ad valorem*. On tapestry Brussels carpets 28 cents per square yard, and 35 per cent. *ad valorem*. On wools of the first class, valued at the place of export at 32 cents or less per pound, 10 cents per pound and 11 per cent. *ad valorem;* if over 32 cents, 12 cents per pound and 10 per cent. *ad valorem;* on all wools of the second class, the same as on the first class; on the third class, costing 12 cents or less, 3 cents per pound; if costing over 12 cents, 6 cents per pound.

Before the close of the session Mr. Sherman introduced an important financial measure for consolidating the public debt. This new project was not acted upon at this session, nor was it intended that it should be, but it was merely brought forward to be in readiness for next Congress.

The bill consists of four distinct provisions. First, it authorizes the Secretary of the Treasury to prepare and issue a new description of six per cent. gold-bearing bonds, to be known as the "Consolidated Debt of the United States." These bonds differ from all existing securities in that they are to bear on their face the condition that the principal and interest shall be payable in standard coin of the United States. This coin payment will thus become an explicit bargain, and positive irreversible contract between the Government and the bondholder. These new coin-bearing securities are not to be sold by the Treasury for less than par, and the proceeds are to be employed for no other purpose but "the purchase or payment of existing indebtedness of the United States." The Seven-thirties, the Five-twenties, the Compound notes—any and every debt, funded or unfunded, may be bought up by the Secretary under the powers here conveyed to him, and he is subject to no limitation as to the price he shall pay for these outstanding securities, or as to the publicity of his dealings in them. He may buy them secretly through brokers. He may buy them publicly in the open market. He may offer to buy them at a fixed price through the various Sub-Treasuries. There is no restrictions as to the terms at which he shall take from the public the Compound Notes, the Seven-thirties, or the new Demand Certificates, should the latter be authorized. The only restriction that Mr. Sherman's bill imposes, is that the Consolidated Coin Bonds shall not be sold for less than par. Practically, therefore, this bill allows an increase of the principal of the public debt to any extent which may be found necessary for buying up the perplexing multitude of public obligations, and consolidating them into one uniform species of long bonds. As no limitation is fixed to the amount of the new issue, the Secretary, of course, may pay therewith any bounties or other indebtedness which have been or may be incurred by the Government.

The second section of this act provides for taxing the new bonds, the amount of the tax being one per cent. on the principal. If this tax is made payable in coin the new bonds will be virtually 5 per cent. bonds, and will closely approximate in intrinsic value the Ten-forties, which can be bought to-day at about 98. If the tax is payable in currency, the consolidated securities will yield more income than the Ten-forties, and would perhaps sell at higher quotations, were it not for the fact that the Ten-forties are "shaken down" in the market. Few of them are offering for sale, while the new Consolidated Bonds would be pressing themselves on the acceptance of purchasers, and their selling value in the market might be depressed below their intrinsic value as an investment as often as the supply, which would be large, exceeded the demand, which might at first be variable and small. For the sake of more easy collection, the 1 per cent. tax is to be kept back out of the semi-annual interest, and the amounts so collected is not to be paid into the general revenue of the Government, but it is to become a sinking fund, "irrevocably pledged to the reduction of the public debt."

The formation of a sinking fund, of course, requires that a Board of Commissioners shall be appointed to manage it. This board is by the act to consist-

of two members, the Secretary of the Treasury and the Chief Justice of the United States. This board is empowered to invest "the sums derived from the said tax, and all interest accruing thereon," in purchasing the Consolidated bonds. The Commissioners are allowed to buy when, where, and how they please, but they must not pay more than 5 per cent. premium on their purchases. They may also, at their discretion, "select by lot for purchase," at this rate, any Consolidated bond in the hands of the public, and on such selected bonds the interest shall cease forthwith.

Never, probably, was there a financial enactment so comprehensive in its scope or so searching in its operation. The first three sections, as we have seen, attempt to liquify and recrystallize that part of our debt which is held at home. But there is a fourth section, which applies itself to that part of the debt which is held abroad. Here the Secretary of the Treasury is empowered to act alone and independently of the Chief Justice. He is authorized to issue 500 millions of new 5 per cent. 20 year bonds, which shall be unlike any securities ever issued by our Government in two respects. First, "the principal and interest shall be payable at such places in Europe as he may deem best" Secondly, the said principal and interest shall be payable, not in money of the United States, but "in the coin of the country where payable" The Secretary of the Treasury may thus issue sterling bonds payable in London; bonds expressed in francs payable in Paris, or in thalers or guilders payable in other continental cities. These foreign bonds are to be disposed of only in exchange for 6 per cent. Five-twenties, and our Government, in making the exchange, is not to submit to a discount of more than five per cent.

Such is the bill which is now offered for the consideration of the people, and will be debated in Congress at as early a period as other pressing business will allow. Our readers will see that this bill is in its main features identical with measures which have been again and again for years past voted down in Congress. As no new arguments have as yet been advanced in its favor, we at present content ourselves with simply giving utterance to the general impression which, so far as we observed, the bill seems to have produced. The prevailing conviction in some quarters is that the bill is too wide in its sweep, too ambitious in its aims, too productive of change to be safe. Others point out the fact that it does not meet the real difficulties of the Treasury. These difficulties are at present confined to one particular part of the debt—namely, the short obligations. The trouble is to get our Compound Notes funded, to get our Seven-thirties funded, to get every demand obligation funded. Mr. McCulloch, in his last annual report, remarked that as Congress would not confer on him additional power to contract the currency, he had devoted himself to the work of funding short government paper into long bonds. He cannot do better than persevere in this work of funding. It was with much surprise that the country learned that the Treasury, notwithstanding all Mr. McCulloch's efforts in funding, was in fear of embarrassment from the maturing Compound Notes. In five months some 150 millions of Seven-thirties will claim his attention. Once these notes are out of the way, he will see in the distance other importunate claims. The 400 millions of 1868 Seven-thirties will find him enough to do. Until the Treasury has provided for all the Seven-thirties, all the Compound Notes, all the demand obli-

gations, and in fact every debt which falls due at short dates, it will be unwise, and can only tend to embarrassment and public loss, to tamper with the long bonds of the Government, or to liquify and float the funded debt in hopes of making some better bargain with the public creditors at home and abroad.

As to the specific questions relative to the sinking fund, the consolidation of the debt, the proper officers to be entrusted with the management of such delicate and difficult operations, they will come up for discussion if the bill is pressed in Congress. Some of these questions we propose, in any case, to discuss at an early day.

The business of February has been of a generally unsatisfactory character. The spring trade has opened unusually late, and with discouraging symptoms. From the South there has been but few representatives in the market, that section of the country appearing to require but few goods. The credit purchases of last fall have not been paid for with the punctuality which was expected from the comparatively high price of cotton; and the merchants of that section assign as reason that the cotton crop has left but little profit, while a considerable portion of their winter stock of merchandise still remains on hand.

The Western demand for goods has been much less than was anticipated. The jobbers of that section complain of unusual difficulty in making collections, and have, in many cases, to ask from their creditors a renewal of their notes. Under these circumstances there is an unusual number of interior merchants to whom it is not deemed safe to extend the ordinary facilities of credit. At the same time there has been a general lack of confidence in the maintenance of the price of goods, the markets being evidently well supplied, while from the general contractment of expenses among consummers it has seemed evident that there can be but a limited demand. The unsettled condition of legislation upon many vital questions, especially those of reconstruction, tariff and currency, has also had a very direct tendency to depress trade in every department. Toward the close of the month there was an improvement in the amount of transactions; but the prevailing tone continued discouraging, the occurrence of failures among minor firms in the dry goods and grocery trades having added somewhat to the prevailing uneasiness.

This inactivity in general business has naturally favored a growth of ease in banking affairs. The month opened with a large gain in the legal tender reserves and the deposits of the banks and a decline in loans; but, from the middle of the month large sales of new Sixty-five bonds by the Treasury drew a considerable amount of currency out of the banks, which, however, was refunded to the extent of seven or eight millions at the close upon purchases of Seven-thirty notes by the Assistant Treasurer. The rate of interest on demand loans has ranged mostly at 5@6 per cent. throughout the month, with less of the severe discrimination as to collaterals than was observed in January. The banks have discounted merchants' paper much more freely, though with a marked caution as to certain branches of trade deemed specially risky, the rate on prime notes having ranged at 6½@7½ per cent.

The following are the rates of loans and discounts during the month of February:

RATES OF LOANS AND DISCOUNTS.

	Feb. 2.	Feb. 9.	Feb. 16.	Feb. 23.
Call loans	7 @ –	6 @ –	6 @ 7	5 @ 6
Loans on Bonds and Mortgage	6 @ 7	6 @ 7	6 @ 7	6 @ 7
A 1, endorsed bills, 2 mos	7 @ –	7 @ –	7 @ –	6½@ 7
Good endorsed bills, 3 & 4 mos	7 @ 8	7 @ 8	7 @ 8	7 @ 7½
" " single names	8 @ 9	8 @ 9	8 @ 9	7½@ 9
Lower grades	8 @10	8 @10	8 @10	8 @10

In the stock market there has been a material falling off in transactions, resulting from the uncertainty connected with legislation upon the currency question, it being generally felt that the course of the money market must depend ultimately upon that issue. The aggregate transactions in stocks at both boards for the month amount to 1.475.363 shares, against 2,423,684 in January. Government securities have been unusually active, owing to large conversion operations by the agents of the treasury, and to an enlarged demand for Five twenties from Europe; and prices range at the close considerably above the average.

The volume of shares sold at the boards in January and February, and since January 1, is shown in the following statement:

	January.	February.	Since Jan. 1.
Bank shares	2,461	1,929	4,390
Railroad "	2,200,510	1,282,251	3,482,761
Coal "	24,286	10,369	34,655
Mining "	65,375	29,980	95,355
Improv'nt "	20,344	18,950	39,294
Telegraph "	49,501	33,857	83,358
Steamship "	56,504	91,618	148,122
Other "	4,703	6,409	11,112
At Regular Board	765,359	634 121	1,399,480
At Open Board	1,658,325	841,242	2,499,567
Total 1867	2,423,684	1,475,363	3,899,047
Total 1866	2,459,817		

The amount of Government bonds and notes, State and city bonds and company bonds sold at the regular board in the same months compares as follows:

	January.	February.	Since Jan. 1.
United States bonds	$6,863,300	$6,150,300	$13,013,600
United States notes	1,988,200	1,764,850	3,753,050
City and State bonds	2,524,800	2,422,800	4,947,600
Company bonds	732,500	752,200	1,484,700
Total, 1867	$12,108,800	$11,090,150	$23,198,950
" 1866	12,155,700	9,822,000	21,977,700

The following are the closing quotations at the regular board to-day, compared with those of the six preceding weeks:

	Jan. 18.	Jan. 25.	Feb. 1.	Feb. 8.	Feb. 15.	Feb. 21.	Feb. 28.
Cumberland Coal	....	33	....	....	....	....	30¾
Quicksilver	41	38¾	....	40	40	39	....
Canton Co	46½	45	44	46½	45¼	46	45
Mariposa pref	30¾	33½	23¾	22½	21¾	23¾	22¼
New York Central	108	101	x d.99⅛	103⅛	100	101⅜	102¾
Erie	63¼	58⅞	56⅜	59¼	56⅝	56⅜	55¼
Hudson River	125¼	121	127	130⅜	130	134¼	137
Reading	103	102	104⅜	104¼	104⅛	104⅛	102⅞
Michigan Southern	78	71	71¾	75⅞	73	72⅝	72½
Michigan Central	107	103½	107	109	108	107½	....
Cleveland and Pittsburg	9	81½	83	85¼	83	79¾	81
Cleveland and Toledo	125½	120¾	120	120¾	....	....	118½
Northwestern	42	36⅞	36½	38¼	36	36	35⅝
" preferred	79¼	64¾	64¼	68½	66¾	65½	65
Rock Island	98⅞	96½	95½	98¾	97¼	97	95⅝
Fort Wayne	96⅜	95½	97⅛	98¼	97½	96⅝	94¾
Illinois Central	120	112½	114¼	114¾	115¾	116	115½

The following table gives the closing prices of the principal government securities on each day of the month :

PRICES OF GOVERNMENT SECURITIES, FEBRUARY, 1867.

Day of month.		6's, 1881. Coup.	6's, 1881. Reg.	6's, (5-20 yrs.) 1862.	Coupon 1864.	Coupon 1865.	Coupon new.	5's, 10-40 yrs. Coup.	7-30s 1867.
Friday	1	107⅝	107⅝	.....	105⅛	105¾	104⅜	....	104⅝
Saturday	2	107⅞	107¾	107⅞	106	.....	104⅜	99⅞	.....
Sunday	3	.....	.....	.....	.....	.....	.....	.....	.....
Monday	4	107⅞	108	107⅞	.....	106¼	104¾	100¼	105⅛
Tuesday	5	108⅛	.....	108⅛	106⅛	106⅝	105	.....	105¼
Wednesday	6	108¼	.....	108⅛	106⅛	106⅞	105	100⅛	105⅜
Thursday	7	108⅜	108⅜	108⅛	.....	107⅛	105	100⅜	105⅜
Friday	8	108⅜	.....		106⅞	107⅜	105¼	.....	105⅜
Saturday	9	108⅜	108⅝	108⅞	106⅞	.....	105¼	.....	105⅛
Sunday	10	.....	.....	.....	.....	.....	.....	.....	.....
Monday	11	108¾	.....	.....	106⅞	107⅛	105¼	.....	105⅜
Tuesday	12	108⅝	108⅝	109⅛	107	107⅝	105⅜	101⅜	105⅜
Wednesday	13	109	109	109¼	107⅜	107¾	105⅜	101⅛	105⅞
Thursday	14	109⅜	109⅜	109⅞	.....	.....	105⅜	101¼	106
Friday	15	.....	109⅛	109⅞	.....	107¾	105¾	101⅛	106
Saturday	16	139½	109⅝	109⅞	.....	.....	105¾	101⅛	106
Sunday	17	.....	.....	.....	.....	.....	.....	.....	.....
Monday	18	109⅝	109¾	110⅛	107⅛	.....	106	101⅛	106⅛
Tuesday	19	110	109⅞	111	.....	109	106	101⅛	105⅞
Wednesday	20	110⅛	.....	111⅞	108¾	109	106¼	101⅝	106
Thursday	21	110½	.....	111⅝	108¾	.....	106⅜	.....	105⅞
Friday	22	———	———	Washington's Birthday—Legal Holiday.				———	———
Saturday	23	.....	.....	111¼	.....	.....	106⅜	101⅝	106
Sunday	24	.....	.....	.....	.....	.....	.....	.....	.....
Monday	25	110⅜	.....	111	108⅜	108⅝	106⅜	101⅝	.....
Tuesday	26	.....	.....	110⅞	107⅞	108⅛	106⅞	101⅜	105⅞
Wednesday	27	110⅜	.. ..	111	108	108⅞	106¾	101⅝	105⅞
Thursday	28	.....	.....	111	108	108¾	106¾	101¾	105⅞
First		107⅛	107⅝	107⅞	105⅛	105¾	104⅜	99⅞	104⅝
Lowest		107⅛	107⅜	107⅞	105⅛	105¾	104⅜	99⅞	104⅜
Highest		110⅛	109¾	111⅞	108⅛	109	106⅞	101¾	106⅜
Latest		110⅛	109⅜	110⅜	108	108¾	106⅞	101¾	105⅞

The quotations for three-years compound interest notes on each Thursday of the month have been as shown in the following statement :

Issue of	Feb.	Feb. 14.	Feb. 21.	Feb. 28.
June, 1864	117⅜@117⅝	117⅜@117¾	117⅝@117⅞	117⅝@117⅞
July, 1864	116⅞@117⅛	117 @117¼	117⅛@117⅜	117⅛@117⅜
August, 1864	11 ⅜@116⅜	116⅛@116¾	116⅝@116⅞	116⅝@116⅞
October, 1864	115⅜@115⅝	115⅛@115¾	115⅝@115⅞	115⅝@115⅞
December, 1864	114⅜@114⅝	114⅜@114¾	114⅝@114⅞	114⅝@ 14⅞
May, 1865	112 @112⅛	112¼@112½	112⅜@ 12⅝	112⅜@112⅝
August, 1865	111 @111¼	111¼@111½	111⅜@111⅝	111⅜@111⅝
September, 1865	110⅝@111⅜	110⅞@111	110⅞@111¼	110⅞@11 ¼
October, 1865	110⅜@110⅝	110⅝@110¾	110⅝@110⅞	110⅝@110⅞

COURSE OF CONSOLS AND AMERICAN SECURITIES AT LONDON—FEBRUARY, 1867.

Date.	Cons for mon.	Am. securities U.S. 5-20s	Ill.C. sh's.	Erie shs.	Date.	Cons for mon.	Am. securities U.S. 5-20s	Ill.C. sh's.	Erie sh's.
Friday 1	90¾	72⅞	80¾	39	Sunday 17	....	....	...	..
Saturday 2	90⅝	73	80¾	38½	Monday 18	91	73¾	78	37½
Sunday 3	..	....	....	....	Tuesday 19	91	74	78	38¼
Monday 4	90⅞	72⅝	81	38¾	Wednesday 20	90¾	74¼	78	38
Tuesday 5	90¾	72½	81	39⅛	Thursday 21	91	74	78¾	37¾
Wednesday 6	90¾	72⅝	80½	39¾	Friday 22	90¾	73½	77¾	37¾
Thursday 7	90¾	72⅝	80½	39¾	Saturday 23	91	73¾	77	37¼
Friday 8	90⅞	72⅞	81	40	Sunday 24	....	....	....	....
Saturday 9	91¼	73¾	80⅞	39¾	Monday 25	91	73¾	77¼	37½
Sunday 10	....	.	.	....	Tuesday 26	91	73¾	77¼	37½
Monday 11	91	73¾	81½	39¼	Wednesday 27	91	73¼	76¾	36¾
Tuesday 12	90⅞	73½	81½	39½	Thursday 28	90½	73¼	76½	36½
Wednesday 13	91	73¾	81¾	39½					
Thursday 14	91	73¼	78½	40	Highest	91¼	74¼	81½	40
Friday 15	91	73½	78¼	39¼	Lowest	90⅝	72½	x76¾	36¾
Saturday 16	91	73½	....	38	Range	⅝	1¾	4¾	3¼

The lowest and highest quotations for U. S. 6's of 1862, at Paris and Frankfort, in the weeks ending Thursday, have been as follows:

	Jan. 31.	Feb. 7.	Feb. 14.	Feb. 21.	Feb 28.
Paris	81½@83	82 @82⅝	82¼@82¾	82⅝@83⅛	82¼@83¼
Frankfort	76@76⅝	74¾@76½	75½@76¾	77 @78	76⅝@77½

The price of gold has been subject to wide fluctuations, in sympathy with the varying phases of legislation upon the reconstruction of the Southern States and the course of legislation upon the currency question. The demand for customs duties has been large, owing to the desire of importers to get their goods out of bond before the adoption of a higher tariff; and this cause has tended to put up the premium. The price opened at 135¼ and closed at 139⅜, having touched at the highest point 140⅜. The receipts from California and foreign ports during the month have been $1,850,109, and the exports $2,600,000, showing an excess of $749,891 in exports over receipts.

COURSE OF GOLD AT NEW YORK, FEBRUARY.

Date.	Open'g	Lowest.	High'st.	Closing.	Date.	Open'g	Lowest.	High'st.	Closing.
Friday 1	135½	135¼	135¾	135⅜	Wednesday 20	136¾	136⅝	137⅜	137⅜
Saturday 2	136⅛	136⅛	136⅜	136½	Thursday 21	137⅜	137½	138⅛	138⅜
Sunday 3	....	....	....	....	Friday 22		(Holiday.)		
Monday 4	136⅜	136⅜	137¾	137¾	Saturday 23	138½	138¼	138⅜	138¼
Tuesday 5	137⅝	136⅝	138¾	136⅝	Sunday 24	....	....	....	....
Wednesday 6	136⅞	136⅜	137¾	137¾	Monday 25	138	137¾	138¾	138⅜
Thursday 7	138¼	137¾	139	137½	Tuesday 26	138½	138¼	139¼	139¼
Friday 8	137⅞	137½	138½	137⅞	Wednesday 27	139¼	139¼	140⅜	139⅝
Saturday 9	137⅞	137	137½	137⅛	Thursday 28	139⅜	139⅛	140⅜	139⅜
Sunday 10	....	....	....	....					
Monday 11	136¾	136½	136¾	136⅜	Feb....1867	135½	135⅛	140⅜	139⅜
Tuesday 12	136½	136½	137¼	137½	" 1866	140½	135¾	140⅝	136
Wednesday 13	137½	136⅜	137½	136¾	" 1865	204¾	196¾	216¾	202½
Thursday 14	137⅜	136⅞	137½	136⅞	" 1864	157½	157½	161	159¼
Friday 15	136¾	136½	136¾	136⅛	" 1863	157½	152½	172½	172
Saturday 16	136½	136½	137	136⅞	" 1862	133½	102½	104¾	102¼
Sunday 17	....	....	....	....	" 1861	100	100	100	100
Monday 18	136¾	136⅜	136¾	136⅝					
Tuesday 19	136⅛	13[illegible]⅛	136⅞	136¾	s'ce Jan. 1, 1867	132⅞	132¾	140⅜	139¾

The imports and exports of treasure at this port in February and since January 1, have been as shown in the following statement.

MOVEMENT OF TREASURE IN FEBRUARY AND SINCE JANUARY 1.

	January.	February.	Since Jan. 1.
Receipts from California	$2,472,895	$1,740,109	$4,213,004
Imports from foreign ports	126,719	136,491	236,210
Total from both sources	$2,599,614	$1,876,600	$4,474,214
Exports to foreign ports	2,551,356	2,124,461	4,675,817
Excess of exports over receipts	.....	$247,861	$199,603
Excess of receipts over exports	$48,258	.....	.....

The following shows the amount of receipts and exports in February and since January 1, for the last seven years:

	Receipts from Cal.		Imp. from for'n p'ts		Exp's to for. ports	
	Feb.	Since Jan. 1.	Feb.	Since Jan. 1.	Feb.	Since Jan. 1.
1867	$1,740,109	$4,213,004	$136,491	$263,210	$2,124,461	$4,672,917
1866	3,603,000	5,088,314	172,122	224,893	1,807,030	4,513,366
1865	914,735	2,958,192	106,904	159,172	1,023,201	4,208,054
1864	1,250,069	2,189,270	88,150	229,940	3,015,367	8,474,446
1863	951,823	3,289,505	213,971	315,877	3,965,664	8,690,238
1862	2,250,795	4,450,328	62,007	225,575	3,776,919	6,435,192
1861	3,622,893	7,807,998	2,274,067	9,536,296	1,102,926	1,161,820

The amount of specie and bullion drawn from unreported sources—private hoardings, Treasury sales, unmanifested receipts from California and foreign ports (including coin brought by immigrants), and receipts from the interior and overland from the gold regions—was in January $5,133,944, and in February $6,424,630. or since January 1, $11,558,574, as shown by the subjoined formula :

	January.	February.	Since Jan. 1.
Specie in banks at or near commencement	$13,185,222	$16,332,984	$13,185,222
Receipts of treasure from California	2,472,895	1,740,109	4,213,004
Imports of specie and bullion from foreign ports	126,719	136,491	263,210
Coin paid by Treasury for interest	7,485,945	521,832	8,007,777
Total reported supply	$23,270,781	$18,731,416	$25,669,213

From which subtract amounts withdrawn from market, viz :

Export of specie and bullion to foreign ports	$2,551,356	$2,124,461	$4,675,817
Paid into Treasury on account of customs	9,520,385	11,452,204	20,972,589
Total withdrawn from market	$12,071,741	$13,576,665	$25,648,406
Excess of supply over withdrawals	$11,199,040	$5,154,751	$20,807
Specie in banks at or near close	16,332,984	11,579,381	11,579,381
Drawn from unreported sources	$5,133,944	$6,424,630	$11,558,574

Foreign Exchange has been unusually steady, the rate of sterling bankers' bills, 60 days, having ranged at 108½@109. The following are the daily quotations.

The first series of figures represents the buying, and the last the selling prices at first-class broker's offices.

COURSE OF FOREIGN EXCHANGE (60 DAYS)—FEBRUARY.

Days.	London. cents for 54 pence.	Paris. centimes for dollar.	Amsterdam. cents for florin.	Bremen. cents for rix daler.	Hamburg. cents for M. banco.	Berlin. cents for thaler.
1	108⅜@108⅝	520 @517½	41⅛@41⅜	78¾@79⅛	36⅛@36⅜	72 @72⅛
2	108⅛@108¾	522½@518¾	41 @41⅜	78⅝@79	36 @36⅛	72 @72¼
3						
4	108⅛@108¾	522½@518¾	41 @41⅜	78⅝@79	36 @36⅜	72 @72¼
5	108¾@108½	522½@517½	40¾@41¼	78⅛@79	36 @36⅜	71⅞@72¼
6	108⅜@108½	522½@517½	40¾@41¼	78⅛@79	36 @36⅜	71⅞@72¼
7	108⅜@108½	522½@517½	40¾@41¼	78⅛@79	36 @36⅛	71⅞@71⅞
8	108⅜@108½	522½@517½	40¾@41¼	78⅛@79	36⅛@36⅜	71⅞@71⅞
9	108⅛@108⅝	520 @517½	40¾@41¼	78⅛@79	36⅛@36¼	71⅛@71⅛
10						
11	108⅛@108⅝	518¾@517½	41⅛@41⅜	78¾@79	36¼@36¾	72 @72¼
12	108¾@108¾	520 @518¾	40¾@41¼	78⅛@79	36 @36¼	71¾@72¼
13	108⅛@108¾	520 @516¼	40¾@41¾	78¾@79	36 @36¼	72 @72⅛
14	108⅛@108⅝	518¾@517½	41⅛@41⅜	78¾@79	36⅛@36⅜	72⅛@72¼
15	108⅛@108⅝	518¾@517½	41¼@41⅜	78¾@79	36¼@36⅛	72⅛@72¼
16	108⅜@108¾	520 @516¼	41 @41⅜	78¾@79	36 @36⅜	71⅞@72¼
17						
18	108⅛@108¾	518¾@517½	41⅛@41¼	78¾@79	36¼@36¾	72¼@72¼
19	108⅛@108¾	518¾@517½	41⅛@41⅜	78¾@79	36¼@36¾	72⅛@72¼
20	108⅛@109	520 @517½	41⅛@41⅜	78⅛@78¾	36⅛@36⅜	71⅞@72⅛
21	108⅛@109	517½@516¼	41⅛@41⅜	79 @79⅛	36¾@36½	72⅛@72¼
22		Washington's Birthday—Legal Holiday.)				
23	108¾@109	517¾@515	41¼@41⅜	79 @79⅛	36⅜@36⅜	72⅛@72¼
24						
25	108¾@109	517½@515	41⅜@41⅜	79 @79⅛	36¾@36½	72¼@72¼
26	108¾@108¾	517¾@516¼	41⅜@41¾	79 @79⅛	36¾@36½	72¼@72¼
27	108⅜@108⅞	518¾@516¼	41¼@41⅜	78¾@79	36¼@36½	72⅛@72¼
28	108⅝@108⅞	518¾@516¼	41¼@41⅜	78⅞@79	36¼@36½	72⅛@72¼
Feb	108¾@109	522½@515	40¾@41⅜	78¼@79¼	36 @36½	71½@72¼
Jan	108⅝@109⅜	520 @513¾	41⅛@41⅜	78⅛@79¼	36⅛@36¾	72 @72¾

Short sight on London has been as follows:

Days.		Days.		Days.	
1.....	109⅛@109⅛	11..... .	109⅛@109¼	21.....	109¼@109¼
2.	109 @110⅜	12.....	109⅛@109¼	22.....	(Holiday.)
3.....	.....@	13.....	109¼@109⅜	23.....	109⅛@109⅞
4.....	109 @109⅛	14.....	109⅛@109¼	24..... ..	.....@.....
5..... ..	109 @109¼	15.....	109⅛@109¼	25.....	109¾@109⅞
6..... ..	109 @109¼	16.	109¾@109½	26.....	109½@109⅝
7.....	109 @109½	17..... ..	... .@.....	27.....	109⅝@109⅝
8.....	109 @109¼	18.....	109⅜@109⅜	28...	109⅜@109⅝
9.....	109⅛@109¼	19.....	109⅜@109½		
10.....	.....@.....	20..... .	109¼@109¼	Month.....	109 @109⅞

JOURNAL OF BANKING, CURRENCY, AND FINANCE

Act for Retiring Compound Notes—Debt Statement for March—Returns of the New York, Philadelphia, and Boston Banks.

The old Saxon proverb which says that "over doing is undoing" has received many an illustration from the political and social changes of this country. When the Certificates of Indebtedness were paid off, toward the close of last year, our readers will remember that we expressed doubts as to the expediency of taking such popular and harmless government securities out of the hands of investors, and suggested that, in some future emergency, when the Treasury should be in need, the issue, as experience had fully proved, might be made available to the extent of 100 millions of dollars or more. Besides the old certificates, which amounted at one time to 280 millions of dollars, other short-time obligations of the Treasury were paid off, leaving, as it was supposed, nothing outstanding which during the present year could produce embarrassment. This, we admit was our understanding of the Treasury movements, and we presume the same conviction prevailed among the public generally. We confess, therefore, to have been not a little surprised when it was announced that authority to issue greenbacks or a new kind of certificates was necessary for liquidating 100 millions of compound notes falling due this year. A bill was introduced into Congress for this purpose, and after undergoing several changes became a law in the following form:

Be it enacted, &c., That for the purpose of redeeming and retiring any compound interest notes outstanding, the Secretary of the Treasury is hereby authorized and directed to issue temporary loan certificates in the manner prescribed by section four of the act, entitled "An act to authorize the issue of United States notes and for the redemption or funding thereof, and for funding the floating debt of the United States," approved Feb. 25, 1862, bearing interest at a rate not exceeding three per centum per annum, principal and interest payable in lawful money on demand; and said certificate of temporary loan may constitute and be held by any national bank, holding or owning the same as a part of the reserve provided for in sections 31 and 32 of the act entitled "An act to provide a national currency secured by a pledge of United States bonds, and to provide for the circulation and redemption thereof," approved June 3, 1864. Provided that not less than two fifths of the entire reserve of such bank shall consist of lawful money of the United States; and provided, further, that the amount of such temporary certificates at any time outstanding shall not exceed $50,000,000.

The certificates here authorized differ from the old ones in two respects—first they are payable in greenbacks on demand, and secondly, they are permitted to

be held by the banks as part of their reserve. These new certificates are in reality due-bills, or sight drafts on the Treasury, payable not in National Bank notes, as are other maturing securities, but in greenbacks exclusively. Being thus exchangeable into greenbacks on demand, the certificates can be available as reserve wherever there is a Treasury office close at hand provided with a sufficient stock of greenbacks to meet them. But in the smaller cities, where no Sub-Treasury exists, what are the banks to do? They will be unable to hold this kind of reserve, for, in the event of a sudden run, they might be obliged to stop payment before they could convert certificates into greenbacks.

The debt statement for March which appears in this number offers several interesting features. It will be seen that no less than 42 millions of long bonds have been disposed of—32 millions in exchange for compounds and seven-thirties, and 10 millions for money. Only a part of this cash has been disbursed, so that the currency balance has been augmented 7½ millions. The coin balance has also accumulated 10 millions in consequence of customs receipts. Its amount is now $107,271,031. As the claims against this gold by holders of coin certificates amount to $18,376,180, the net balance of coin is $88,894,851. There is a very strong antipathy both in and out of Congress against allowing so large a sum of idle cash to remain locked up in the Treasury while the Government is paying so heavy a rate of interest as 8 per cent. on all the long bonds it issues. The interest at 8 per cent. on the sum we have now in the Treasury vaults would amount to 12 millions of dollars a year. If this sum could be reduced by one-half 6 millions a year would be saved.

In view of the recent changes in the income tax, which may reduce its product from 60 to 40 millions, or perhaps less, the country cannot afford to lose so large an annual sum in interest. Especially in this accumulation of currency to be objected to when, as in the present case, it is obtained by selling gold-bearing bonds. What private individual in his ordinary business could afford to borrow money at high rates for the sole purpose of keeping it idle? We sometimes hear the excuse that the public credit is improved when we can show a full purse, and that a large balance in the Treasury helps the price of our bonds. There is no practical force in this reasoning. A working balance is all we want. If adequate for actual payments a small balance is better than a large one. What helps the public credit is not the idle balance but the incoming revenue. An overgrown temporary balance is a temporary reservoir which may become exhausted, but a revenue is a stream which flows perennially. There are many popular objections to the heavy Treasury balances which Mr. McCulloch has lately allowed himself to accumulate. But in the present state of the country it ought to be unnecessary to urge any other argument than this one of economy.

Below we give the returns of the Banks of the three cities for the month of February.

NEW YORK CITY BANK RETURNS.

Date.	Loans.	Specie.	Circulation.	Deposits.	Legal Tend's.	Ag. clear'gs
January 5. ...	$257,852,460	12,794,892	32,762,779	202,533,564	65,026,121	486,987,787
January 12.....	258,935,488	14,613,477	32,825,103	202,517,608	63,246,370	605,132,006
January 19.....	255,032,223	15,365,207	32,854,928	201,500,115	63,235,386	520,040,028
January 26	251,674,804	16,014,007	32,957,198	197,952 076	63,426,559	568,822,804
Febru ry 2... .	251,264,355	16,332,98	32,995,347	200,511,596	65,944,541	512,407,253
February 9.....	250,268,825	16,157,257	32,777, 00	198,241,835	67,628,992	508,825,532
Febru'ry16.....	253,131,328	14,79 ,626	32,956,309	196,072,292	64,642,940	455,833,829
Febru'ry23.....	257,823,994	13,513,456	33,006,141	198,420,347	63,153,895	443,574,036

PHILADELPHIA BANK RETURNS.

Date.	Legal Tenders.	Loans.	Specie.	Circulation.	Deposits.
January 5	$20,209 064	52,312,317	903,663	10,388,820	41,308,327
January 12	20,006.255	52,528.491	903,320	10,380,577	41,023,421
January 19	19,448,099	53,458.307	877,548	10,381,595	30.048,645
January 26	19,363,374	52,168,473	880,582	10,384,683	39,001,779
February 2	19,269,128	55,55 ,130	871,564	10,430,898	39,592,712
February 9	19,659,250	52,384,329	873,614	10,449,982	39,817,595
Febru'ry16	18,892,747	52,573,130	867,110	10,522,972	40,050,717
Febru'ry23	17,837,598	52,394,721	841,223	10,566,434	38,646,013

BOSTON BANK RETURNS.

(Capital Jan. 1, 1866, $41,900,000.)

	Loans.	Specie.	Legal Tenders.	Deposits.	Circulation—National.	Circulation—State.
January 7	$97,009,742	1,183,451	17,033,387	40,824,618	24.580,367	312,664
January 14	98 461,778	1,334,300	16,829,495	40,246,216	24,997,446	311,749
January 21	95,298,982	1,078,160	16,59 ,299	38,679,604	24.275,162	301,911
January 28	97,891,329	1,058,329	16,816,481	39,219,241	24,716,597	302,298
February 4	97,742,461	956,569	16,394,604	39,708,053	24,691,075	306,014
Febru ry11	97,264,162	873,396	1 ,102.479	39,474,359	24,686,663	305,603
Febru'ry18	96,949,473	929,940	15,898,338	38,900,5 0	24,765,420	305,604
Febru'ry25	95,33 ,900	779,402	15,741,046	37,893,963	24,953,605	303,228

PUBLIC DEBT OF THE UNITED STATES.

Abstract statement, as appears from the books and Treasurer's returns in the Treasury Department, on the 1st of January, the 1st of February, and the 1st of March, 1867, comparatively :

DEBT BEARING COIN INTEREST.

	Jan. 1.	Feb. 1.	Mar. 1.
5 per cent. bonds	$198,091,350	$198,091,350	$198,091,350
" " of 1867 and 1868	15,783,442	15,779,442	15,679,442
" " of 1881	283,740,850	283,745,250	283,745,400
" " 5.20's	891,125,100	910,029,500	954,889,000
Navy Pension Fund	11,750,000	12,500,060	12,050,000
	$1,400,490,742	$1,420,145,542	$1,464,955,192

DEBT BEARING CURRENCY INTEREST.

6 per cent. bonds	$10,622,000	$12,922,000	$12,922,000
3-year Compound Interest Notes	144,900,840	143,064,640	141,308,830
3-year 7.30 notes	676,856,600	663,686,100	632,798,050
	$832,379,440	$819,672,740	$787,028,880

DEBT ON WHICH INTEREST HAS CEASED.

Various bonds and notes	$16,518,590	$15,791,454	$14,576,689

DEBT BEARING NO INTEREST.

United States Notes	$380,497,842	$381,427,090	$376,235,626
Fractional currency	28,732,812	28,743,734	29,514,722
Gold certificates of deposit	16,442,680	19,992,980	18,376,180
	$425,673,334	$430 163,804	$424,126,528
Aggregate debt	$2,675,062.505	$2,685.773.540	$2,690,587,289
Coin and Currency in Treasury	131,737,333	142,423,791	159,823,399
Debt, less coin and currency	$2,543,325,172	$2,543,349,749	$2,530,763,890

The following statement shows the amount of coin and currency parately at the dates in the foregoing table :

	Jan. 1.	Feb. 1.	Mar. 1.
Gold Coin	$97,841,968	$97,354,604	$107,271,031
Currency	33,895,765	45,069.187	52,253,368
T tal gold coin and currency	$131,737,633	$142,423,791	$159,823,399

MISSOURI STATE DEBT.

A bill "to restore and maintain the credit of the State of Missouri" was introduced in the Senate of Missouri on the 24th of January. The bill proposes to fund all the railroad debt, including coupons up to January 1, 1867, into bonds running twenty years and payable at New York. The following provisions are included in the bill:

SEC. 2. Said bonds shall be used for the single object of consolidating the railroad debt of the State, now in default, with the accrued interest thereon, and shall be issued only in exchange for the bonds and overdue coupons thereon, heretofore issued by the State, or guaranteed by the State, in aid of certain railroad companies, as follows: For the $7,000,000 issued to the Pacific Railroad; for the $4,500,000 issued in exchange or guaranteed for the same company; for the construction of the Southwest branch; for the $4,350,000 issued to the North Missouri Railroad Company; for the $3,501,000 issued to the St. Louis and Iron Mountain Railroad Company; for the $650,000 issued to the Cario and Fulton Railroad Company, and for the $700,000 issued to the Platte County Railroad Company; and the holders of the bonds aforesaid shall at any time after the passage of this act have the privilege of exchanging the same for consolidation bonds, and of funding the coupons due at the date of the passage of this act, when presented in sums of $1,000; provided that for any balance less than $1,000 the State Treasurer shall give in exchange certificates of indebtedness, which shall be converted into consolidation bonds, whenever presented in sums of not less than $1,000.

SEC. 8. There is hereby appropriated to the interest and sinking fund the sum of $4,500,000 out of the moneys to be received from the United States under the provisions of the act of Congress entitled "An act to reimburse the State of Missouri for moneys expended for the United States in enrolling and equiping and provisioning militia forces to aid in suppressing the rebellion," approved April 17, 1866, which appropriation shall be disposed of as follows: $1,500,000 to go to interest fund proper; $2,000,000 to be invested in United States six per cent. bonds, to be held as a reserve fund to meet any deficiency in the semi-annual payments of interest on the State bonds, and may be used for obtaining temporary loans to pay interest, but for no other purpose, or so many as are necessary may be sold to make up any deficient in the interest fund, to meet interest as it becomes due; but if any part of said bonds are sold, a like amount shall again be purchased whenever there is surplus funds belonging to the interest or sinking fund, so as to keep the reserve up to meet future emergencies. The remaining $1,000,000 hereby appropriated shall go to the sinking fund to be used in the purchase of outstanding indebtedness of the State.

SEC. 9. Whenever there is, in the judgment of the fiscal agent, any surplus of the interest fund that will not be needed, it shall be credited to the sinking fund, and be used in the purchase of State bonds. The interest collected from the bonds belonging to the reserve fund, and all interest accruing from the principal of sinking fund, shall go to the interest or sinking fund, as the fiscal agent may find it necessary, and all moneys hereafter paid in the treasury on account of the purchase of any of the railroads sold by the State, shall go to the sinking fund.

SEC. 10. There shall be collected for the year 1867, and for every year thereafter, a special tax of $\frac{1}{4}$ of 1 per cent. on real estate and other property and effects subject to taxation, as provided for by the railroad ordinance in the constitution which shall be returned and paid over as a special tax, and, as fast as collected, shall be deposited in bank to the credit of the interest fund, and shall be used to meet the semi-annual interest as it accrues upon the bonds to be issued under this act, and any surplus to go to the sinking fund as above provided: said special tax fund shall be used for the payment of all accruing obligations of the State for the purchase of outstanding State indebtedness, but for no other purpose whatever.

CANADIAN TRADE SINCE THE ABROGATION OF THE RECIPROCITY TREATY.

The Montreal *Gazette* says that the exports from Canada instead of decreasing actually increased, the figures being: Total value of exports in 1865, $7,512 752; do. 1866, $8,599,030. There is a falling off in the exports "by rail," but this is more than made

up by the increased exports "by sea," and shows how we were driven to seek a new, and, we believe, more profitable--at all events a self-reliant--market for the balance of the goods thrown on our hands by the protective tariff of the United States.

In 1865, for instance, the exports from Montreal "by rail," came to a total value of $2,977,135, and last year fell to $1,742,042. The exports "by sea," on the other hand, only amounted to $4,535,617 in 1865, and last year had risen in value to $6,856,988. We sold, Montreal alone considered, one million less to the Americans, but then found extra direct sale for two millions with the British and Lower Province consumers.

We now propose to point out the items more immediately affected by the treaty, in order to show how our interests were affected by its abrogation. This will be best shown in a comparative tabular form

	1865.	1866.		1865.	1866.
Plank and boards	$18,662	$35,568	Sheep	$81,688	$1,008
Shingles	558	1,196	Poultry	17,910	32,685
Other woods	6,103	14,457	Butter	337,592	262,690
Copper ore	550	12,457	Cheese	5,693	15,256
Pig and scrap iron	1,812	2,068	Eggs	128,087	72,263
Pickled fish	10,768	9,320	Hides	4,862	2,749
Horses	414,588	387,467	Pork	6,171	57,005
Horned cattle	89,934	77,052	Wool	48,987	19,973
Swine	23,002	6,789			

The following recapitulation will also show where the great increases and decreases of the exports generally particularly take place:

	1865.		1866.	
	By sea.	By rail.	By sea.	By rail.
The mine	$891	$3,392	$35,080	$14,895
The fisheries	1,489	11,917	.....	9,329
The forest	667,798	235,732	459,447	147,608
Animals	1,049,838	1,122,660	1,444,949	1,945,288
Agriculture	1,560,083	405,527	3,370,902	345,876
Manufactures	25,929	66,978	297,186	126,318

These figures show an increase last year of $46,687 in articles the produce of the mine; a decrease of $4,137 in fish and oil; a decrease of $216,465 in the produce of the forest; an increase of $26,739 in animals and their products; an increase of $1,751,218 in agricultural produce, and an increase also in manufactures of $130,697. So far as this port, therefore, is concerned, we have no reason to complain of the abrogation of the treaty, an increase instead of a decrease being remarkably perceptible on the general result.

COMPOUND INTEREST NOTES OUTSTANDING.

Below we give a full statement of estimated outstanding compound interest notes and interest due thereon to date of maturity, read in the Senate a few days since by Mr. Sherman:

Date of issue.	Estimated outstanding.	Interest at maturity.	Date of maturity.
June 10, 1864	$6,000,060	$1,164,313 78	June 10, 1867
July 15, 1864	17,500,000	3,395 915 19	July 15, 1867
Aug. 15, 1864	39,265,000	7,619,463 42	Aug. 15, 1867
Oct. 15, 1864	17,400,090	3,376,409 96	Oct. 15, 1867
Dec. 15, 1864	19,500,000	3,784,019 78	Dec. 15, 1867
Total	99,665,000	19,340,122 13	
May 15, 1865	19,499,640	3,783,949 92	May 15, 1868
Aug. 1, 1865	12,500,000	2,425,653 71	Aug. 1, 1868
Sept. 1, 1865	6,400,000	1,241,934 71	Sept. 1, 1868
Sept. 15, 1865	2,000,000	388,104 59	Sept. 15, 1868
Oct. 1, 1865	2,000,000	388,104 59	Oct. 1, 1868
Oct. 16, 1865	1,000,000	194,052 30	Oct. 16, 1868
Total	$143,064,640	$27,761,921 95	

GOLD PRODUCTION OF NEW ZEALAND.

A London (England) paper prints the following respecting the gold produce of New Zealand:

No little misapprehension exists as to the amount of gold annually exported from New Zealand. This chiefly arises from the fact that most of the New Zealand gold reaches this country by way of Melbourne and Sydney, hence it goes to swell the total received from Australia. The Custom-house authorities here have no means of making separate returns, so that New Zealand is deprived of her fair share of fame. The government of New Zealand has supplied the following returns, clearly showing the immense wealth of the gold fields in those islands:

Years.	Ounces.	Value.	Years.	Ounces.	Value.
1857	10,136	£10,442	1863	628,450	2,431,723
1858	13,533	52,443	1864	480,171	1,857,847
1859	7,336	28,427	1865	574,574	2,226,474
1860	4,533	17,585	1866	570,803	2,208,192
1861	194,234	752,657			
1862	410,860	1,591,389	Total	2,894,937	£11,207,179

It will thus be seen with what enormous strides the auriferous regions of New Zealand have progressed, having in the short space of 9 years increased their yield more than 40 fold.

During the quarter ending Sept. 30, 1866, the total yield of the gold fields was 181,405 ounces, valued at £701,635, but of this large amount only 1,875 ounces were shipped direct to England, thus confirming what we have already stated as to Australia reaping the credit due to New Zealand.

COIN AND CURRENCY IN THE UNITED STATES TREASURY.

The following statement, published by the New York *Times*, showing the balance of coin and currency, and places where held, subject to draft of Treasurer of the United States, from the amount as made up to Feb. 8, 1867:

	Date of return.	Coin.	Currency.
Washington	Feb. 1	$2,851,780	$901,590
Boston	Feb. 1	7,988,610	1,176,611
New York	Feb. 1	75,419,503	15,309,373
Philadelphia	Feb. 1	2,332,968	663,2 7
St. Louis	Feb. 1	554,478	.....
San Francisco	Jan. 5	612,338	.....
New Orleans	Jan. 19	230,976	129,746
Charleston	Jan. 26	8,847	137,652
Denver City	Jan. 19	7,051	.....
Baltimore	Feb. 1	1,262,343	9,553
Buffalo	Feb. 1	36,735	15,208
Cincinnati	Feb. 1	525,176	872,866
Louisville	Feb. 1	67,183	148,796
Pittsburg	Feb. 1	19,921	86,748
Chicago	Feb. 1	.....	266,930
St. Paul	Feb. 1	19,882	12,246
Santa Fe	Jan. 12	1,750	26,649
Omaha		10	8
Olympia	Nov. 30	775	.....
Oregon City	Dec. 8	470	112,386
Mobile	Jan. 19	82,701	.....
Little Rock	Jan. 19	.....	12,280
National Banks	Feb. 1	.....	26,845,060
Assay Office of the U. S., New York		3,452,513	.....
Mint of the U. S., Philadelphia		744,654	.....
" " San Francisco		1,235,000	.....
" " Denver City		3,100	.....
Total		$97,458,773	$46,726,91[illegible]
Items in suspense		72,265	1,003,880
Balance proper		$97,386,508	$45,723,039

THE LAKE SUPERIOR COPPER PRODUCT IN 1866.

The Houghton (Mich.) *Gazette* of January 24 gives the following statistics of the Portage copper mining business in 1866:

	Tons.	Lbs		Tons.	Lbs.
Quincy Mine	1,380	34	Calumet Mine	154	56
Franklin Mine	1,071	1,558	Sheldon Columbi'n Mine	138	1,313
Pewabic Mine	895	1,201	Hecla Mine	30	56
Huron Mine	665	818	Concord Mine	24	1,150
Hancock Mine	386	12	Douglass Mine	13	1,217
Isle Royale Mine	346	51	Arcadian Mine	4	300
Grand Portage	337	930	South Pewabic Mine	2	1,000
Albany and Boston Mine	201	51			

RECAPITULATION.

	1866		1865.	
	Tons.	Lbs.	Tons.	Lbs.
Quincy Mine	1,380	34	1,360	1,900
Franklin Mine	1,071	1,558	1,063	1,319
Pewabic Mine	875	1,201	1,193	1,432
Huron Mine	665	818	601	736
Hancock Mine	386	12	100	1,436
Isle Royale Mine	346	51	460	393
Grand Portage Mine	337	930	366	1,489
Albany and Boston Mine	201	51	162	1,745
Calumet Mine, ingot	154	56	....	....
Sheldon-Columbian Mine	138	1,313	80	1,288
Hecla Mine	30	56	....	....
Concord Mine	24	1,150	5	1,900
Douglass Mine	13	1,217	4	900
Arcadian Mine	4	300	3	500
South Pewabic Mine, ingot	2	1,000	....	....
Total	5,617	1,747	5,415	638
Increase in 1866			232	1,100

TAXES PAID BY BANKS.

Mr. Rollins gives the following statement of Internal Revenue taxes paid by National Banking Associations for the years 1864, 1865 and 1866:

1864—Dividend and surplus	$381,780 33	
License	175,774 00	$557,554 33
1865—Dividend and surplus	2,207,987 81	
License	734,005 06	2,941,992 81
1866—Dividend and surplus	2,775,192 32	
License	849,340 00	2,924,537 32
Total		$6,424,084 46

Mr. Spinner reports the following taxes from National Banks for the same period:

For 6 months preceding	Duty on circulation.	Duty on capital in excess of U. S. bonds.	Duty on deposits.	Total duty each term.
July 1, 1864	$53,096 97	$18,402 23	$95,811 26	$167,310 45
Jan. 1, 1865	234,643 48	37,229 40	317,142 74	589,015 62
July 1, 1865	498,604 11	96,109 46	769,139 49	1,363,853 06
Jan. 1, 1866	872,566 41	220,807 26	1,331,658 08	2,428,031 75
July 1, 1866	1,234,218 89	186,140 48	1,297,010 15	2,717,369 52

The duty for the six months preceding January 1, 1867, being in process of collection, the amount thereof cannot now be stated.

We estimate these taxes at three millions of dollars.

Subjoined is a recapitulation of the aggregate taxation on National Banks for three years:

On circulation	$287,740	On licenses	175,77
On capital	55,361		
On deposits	412,954	Total taxes for 1864	$1,313,880
On profits	381,780		

On circulation	$1,371,171	On licenses	734,005
On capital	316,916		
On deposits	2,103,797	Total taxes for 1865	$6,733,876
On profits	2,20 ,987		
On circulation, capital, deposits, profits (the last six mos. est.)	$6,717,365 / 2,075,192	On licenses	849,345
		Total taxes for 1866	$8,641,906

The aggregate taxes for the three years are:

On circulation, capital, deposits	$10,265,578	On licenses	1,759,124
On profits	4,664,959	Total taxes for the 3 yeaes	$16,689,564

GOLD CERTIFICATES ISSUED, REDEEMED AND OUTSTANDING.

The following is a tabular statement of the amount of gold certificates which have been issued and redeemed, with the amount outstanding:

	Total issued.	Redeemed,	Out-standing.
20s	$267,020	$165,300	$101,720
100s	4,797,800	3,020,200	1,777,600
500s	549,000	191,500	357,500
1,000s	22,449,000	18,580,000	3,869,000
5,000s	144,685,000	126,740,000	17,945,000
10,000s	5,000,000	5,0 0,000	.....
Total	$177,747,820	$153,697,000	$24,050,000

NEVADA TREASURE MOVEMENT FOR 1865-6.

The Gold Hill (Nevada) *News* of Dec. 10 gives the following statement of bullion shipped through Wells, Fargo & Co.'s Express for the years 1865 and 1866 from the Virginia and Gold Hill offices, showing an excess of $2,074,174 35 for 1866 over the preceding year, for these two places alone. The amount from other places—Carson, Aurora, Austin, &c.—shipped in 1865, makes the total product for that year $14,000,000. For the past, 1866, it stands as follows:

From Virginia City	$7,807,626 18
From Gold Hill	7,100,263 00
From Carson City	341,366 80
From Reese River	490,587 00
From Aurora	171,534 00
Shipped outside of Wells, Fargo & Co	350,000 00
Total for 1866	$16,171,381 98

Bullion shipped from Virginia and Gold Hill, Nevada, for 1865 and 1866:

	1865.			1866.		
	From Gold Hill.	From Virginia.	Totals.	From Gold Hill.	From Virginia.	Totals.
Jan	$252,602 89	$949,152 13	$1,193,755 02	$432,044 28	$520,177 20	$952,221 48
Feb	229,856 24	1,033,?5 89	1,263,712 13	475,491 63	492,322 91	968,814 54
Mch	265,435 68	1,154,749 76	1,390,335 44	490,123 89	705,210 33	1,195,334 22
Apr	150,102 45	1,191,172 00	1,341,274 45	413,196 17	646,987 51	1,060,164 68
May	197,802 30	1,012,435 59	1,210,237 89	562,074 83	648,476 71	1,210,851 54
June	246,725 62	694,356 11	940,981 73	673,111 40	562,938 70	1,236,050 10
July	260,001 59	511,127 57	771,129 16	673,385 93	595,503 77	1,268,889 70
Aug	314,808 93	550,730 73	865,539 71	672,690 14	779,276 50	1,451,966 73
Sept	399,613 99	492,203 79	891,817 78	700,940 36	643,963 97	1,344,904 30
Oct	496,165 00	547,365 58	1,043,530 58	726,464 08	686,517 23	1,412,981 31
Nov	408,307 90	539,217 76	947,525 66	613,779 62	739,512 80	1,353,291 92
Dec	354,425 00	619,455 28	973,880 28	666,984 70	786,428 95	1,453,423 66
Total	3,546,397 59	9,286,822 24	12,833,719 83	7,100,268 00	7,807,626 18	14,907,894 18

The circular of Messrs. Woods & Cheeseman gives the following interesting table of the dividends and assessments of the leading mines of Nevada in the year 1866:

Company.	Bullion Product.	Dividends.	Assessments.
Alpha	.....	.....	$144,560
Bacon M. & M. Co	.....	.....	18,000
Baltimore American	.....	.....	13,000
Belcher	.....	.....	143,520
Bullion	.....	.....	175,000
Chollar-Potosi	$848,750	.....	.....
Confidence	303,920	.....	78,000
Crown Point	1,313,357	$234,000	.....
Daney	.....	.....	26,000
Empire M. & M. Co	486,778	32,400	.....
Exchequer	.....	.....	32,009
Gould & Curry	1,605,228	252,000	.....
Hale & Norcross	1,199,768	350,000	.....
Imperial	910,187	176,000	.....
Lady Bryan	.....	.....	15,000
Ophir	459,000	.....	184,800
Overman	27,953	.....	208,000
Savage	1,805,800	360,000	.....
Sierra Nevada	.....	.....	55,500
Yellow Jacket	2,310,000	390,000	180,000
Total	$11,261,741	$1,794,400	$1,272,380

The total bullion brought down from the Nevada region for the year was, as given in our annual report, $15,215,218. The balance came from mines not embraced in the table, and from those which made no report. The result is that $1,794,400 in dividends has been paid to the stockholders of seven mines, one of which—the Yellow Jacket—in the early part of the year called for $180,000. Thus those seven mines have given $1,614,000 profit to their holders.

The market value of those mines have increased as follows since the tide turned with the new deep ore discoveries in February:

Mines.	No. feet.	Feb. 24 Price per foot.	Feb. 24 Value.	Jan. 12 Price per foot.	Jan. 12 Value.	Dividends.
Crown Point	600	1,020	$612,000	1,400	$840,000	$234,000
Empire	75	3,200	240,000	2,800	210,000	32,400
Gould and Curry	1,200	1,020	1,224,000	615	738,000	252,000
Hale and Norcross	400	1,030	412,000	3,500	1,400,000	350,000
Imperial	184	2,600	488,000	3,150	580,000	176,000
Savage	800	840	672,000	1,950	1,560,000	360,000
Yellow Jacket	1,200	400	480,000	1,380	1,596,000	390,000
Total	4,459		$4,128,000		$6,924,000	$1,794,400
Average per foot			925		1,552	402

POSTAGE CHARGES TO BREMEN AND HAMBURG.

An arrangement has just been concluded with the Bremen and Hamburg Post Department, revising and reducing the rates of postage to be hereafter charged upon letters exchanged by the Bremen and Hamburg mail. The postage charges in future will be as follows, viz.: To Bremen by Bremen mail 10 cents; by Hamburg mail, 15 cents. To Hamburg by Hamburg mail, 10 cents; by Bremen mail, 15 cents. To Oldenburg by Bremen mail, 13 cents; by Hamburg mail, 15 cents. To Luxenburg by Bremen mail, 15 cents; by Hamburg mail, 18 cents. To Austria, Prussia, Bavaria, Saxony, Hanover, Wurtenberg, Baden, Luxenburg, Brunswick, Mecklenburg Schwerein and Mecklenberg Strelitz, Lubeck and Thara. Fee taxes of the Postal Department by Bremen or Hamburg mail is 15 cents; to Schleswig Holstein, and Denmark, by Bremen or Hamburg mail, 18 cents; to Sweden, by Bremen or Hamburg mail, 21 cents; to Norway by Bremen or Hamburg mail, 25 cents; to Holland, by Bremen or Hamburg mail, 18 cents; to Russia, by Bremen or Hamburg mail, 20 cents; to Belgium, by Bremen or Hamburg mail, 18 cents; to Switzerland, by Bremen or Hamburg mail, 19 cents; to Italy, by Bremen or Hamburg mail, 24 cents; to Turkey, by Bremen or Hamburg, mail, 32 cents; to Greece, by Bremen or Hamburg mail, 35 cents; to Gibraltar, Spain and Portugal, by Bremen or Ham-

burg mail, 25 cents; to Australia, India and China, by Bremen or Hamburg mail, via Marseilles, 37 cents; via Trieste, 55 cents. Prepayment of postage is optional in each case, except only letters for Australia, India and China, on which the postage is required to be prepaid by stamps. Letters coming from those countries to the United States by Bremen or Hamburg mail are subject to the same postage charge and the same conditions of prepayment with the following exceptions: From Luneburg, by Hamburg mail, the charge is 20 cents; from Schleswig-Hostein and Denmark, by Bremen and Hamburg mail, 20 cents; from Sweden, by Bremen and Hamburg mail, 25 cents; from Norway, by Bremen and Hamburg mail, 28 cents; from Russia, by Bremen and Hamburg mail, 25 cents; from Italy, by Bremen and Hamburg mail, 27 cents; from Gibraltar, Spain and Portugal, by Bremen and Hamburg mail, 30 cents; from Australia, India and China, via Trieste, by Bremen and Hamburg mail, 30 cents.

MASSACHUSSETTS INTEREST LAW.

The following is the text of the new interest law which passed the Massachusetts Legislature:

SECTION 1. When there is no agreement for a different rate of interest of money, the same shall continue to be at the rate of $6 upon $100 for a year, and at the same rate for a greater or less sum, and for a longer or shorter time.

SEC 2. It shall be lawful to contract to pay or reserve discount at any rate, and to contract for payment and receipt of any rate of interest: Provided, however, That no greater interest than six per centum per annum shall be recovered in any action except when the agreement to pay such greater rate of interest is in writing.

SEC. 3. Sections 3, 4 and 5 of Chapter 53 of the General Statutes, and all acts and parts of acts inconsistent herewith, are hereby repealed.

SEC. 4. This act shall not affect any existing contract or action pending, or existing right of action, and shall take effect on the first day of July next.

DIFFUSION—A REVOLUTION IN SUGAR-MAKING.

[*From the London Produce Market Review.*]

The extraction of the maximum of saccharine matter from the cane or the beet, or other raw material, with the minimum of expense, is a problem that has for a long time occupied the attention of some of the ablest chemists. We are inclined to lay the more stress on this circumstance, as it might not without some show of reason be imagined that all researches of this nature were simply of a mercenery nature, and were dictated by no higher considerations than those growing out of the ordinary temptations to make haste and grow rich. That he element of gain is an important constituent, and a most wholesome stimulus to exertion besides, is not gainsaid; but there can be no doubt that an incentive even more powerful than this is to be found in the attractiveness of the pursuit which can bind the most distinguished *savans* to the pursuit of science, when the result of their researches would seem to have brought large pecuniary gain within their grasp. To go no further than our own country for an example of the elevating character of their pursuit; we suppose that the profits arising from any one of his numerous scientific discoveries would have enabled any one less disinterested than Professor Wheatstone long since to have abandoned all further researches, and to have lived at ease, had such been the ultimate object of his desires. But, fortunately for the general benefit of mankind, one discovery in science seems only to whet the mind for subsequent adventure, and to this happy law of nature we are indebted for the recent investigations on the subject of "diffusion," which have now enabled practical men to apply the principle to manufacturing purposes, and amongst others to that of sugar.

Our country is not so immediately engaged in the extraction of sugar as France and Germany, and our scientific men have not paid so much attention to the subject as the Continental *savans*. Sugar exists in certain parts of saccharíferous plants, pure and unmixed with other ingredients, but by all the processes until recently at work the saccharine juice was not extracted in its pure state, but mixed with salts and vegetable and other matters, which caused the juice to ferment rapidly, and in addition, made the sugar more difficult of manufacture. The problem, then, of sugar-making was to extract all the sugar contained in plants without the admixture of extraneous matters; and this great question, so important in its bearing on the comfort of the human race, has, so far as can yet be seen, been successfully solved by Herr Robert, of Seelowitz, in Prussian Silesia, by a happy application of the great natural law of "diffusion." Theoretically stated, the principle of "diffusion" is, according to M. Dubrunfant, an attractive force (akin to that of gravitation) developed in particles of matter at the moment of their being placed in juxtaposition. The principle appears to have been discovered, though not thoroughly carried out, by our own talented and ill-used Priestly. The allied phenomena of endosmoisis and exosmosis were further investigated by Dutrochet, who found that if fluids of unequal density are separated by an animal or vegetable membrane, the denser will attract the less dense through the membrane that divides them; this property be called endosmose, when the attraction is from the outside to the inside, and exosmose when it operates from the inside to the outside of the body acted upon. By the endosmometer, an instrument for measuring the rapidity with which fluids of unequal density mix, M. Dutrochet also found that less dense fluids pass with greater rapidity into the more dense than *vice versa*. These phenomena were still further investigated by Mr. Graham, by means of his instrument, the dialyser, made by stretching parchment paper (to serve as a septum or membrane) over a gutta percha hoop, and pouring the liquid to be dialysed into the dialyser, which was then floated in a dish containing distilled water. By this instrument it was found that substances which diffuse rapidly are generally crystalline, and hence substances, according to their capability of being diffused, or the reverse, are termed crystalloids or colloids, from collin, the scientific name for gelantine, which is an uncrystallisable substance. Crystalloids, moreover, have a much greater affinity for water than colloids. Now the great value of the principle of diffusion, as applied to the extraction of sugar-juice, arises from the circumstance that sugar, being a crystalloid, will diffuse with much greater rapidity than uncrystallisable matters, which were mixed with it by the old process of extraction, and which, being colloids, diffuse very slowly, if at all.

Diffusion in the factory of Herr Robert gives the most striking results. From the beetroot, so comparatively poor in saccharine matter, 10 per cent. of actual raw sugar is extracted, and the refuse left after manufacture hardly contains the slightest chemical trace of saccharine matter—in other words, all the sugar is extracted. A well known East Indian manufacturer came to Europe some time since in order to see how the competition of the beet was to be met, and was at once struck by the suitability of diffusion for his purpose. In order fully to recognise the peculiar applicability of this principle to the manufacture of cane sugar, we must bear in mind the principal features in the structure and organization of

the plant. A horizontal section of a portion of the sugar cane, which has arrived at the period of its maturity, placed under the microscope, presents the following appearance: "Its internal structure consists of a series of cells, generally hexagonal in shape, which touch each other in every direction. They are formed by a thin delicate tissue, which encloses them—not laterally merely, but both above and below, so that each is perfectly closed and separate from those adjoining. No communication, by pores or otherwise, can be discovered between them when examined under the highest power. This structure is called the cellular structure; interspersed through it are a number of vessels, running in groups of two, three or four, each of which is enclosed in a sheath of woody fibre; surrounding the whole stem is the cortext or bark, covered by its coating of silica."—(Dr. Evans on the Sugar Cane.) The cells and the vessels are quite distinct in their contents and in their functions; the former contain saccharine matter only, while the latter contain the sap, salts, and other matters necessary for the aliment of the plant. By some action of nature, which we are unable to detect, but which is, to a certain extent, reproduced in the novel principle of diffusion, a transposition—in a modified and partial form, it is true—of these two liquids is constantly going on. "During life," says Dr. Evans, in the work quoted above, "there appears to be going on a constant exchange of principles between the contents of the cells and those of the vessels, by means of endosmose and exosmose. The cells absorb a portion of the water contained in the sap vessels, by which the crystallisation of their saccharine contents is prevented; and they in return give to the sap a certain amount of their sugar, which increases its richness and nourishing properties." The novel method of extracting the sugar juice by the process of diffusion is, therefore, only an imitation by chemical means of the lesson taught by nature, the main object being to extract the saccharine matter, freed, as far as possible, from any admixture of alien ingredients. The principle is at once apparent, for it is nothing more than the absorption of the crystallisable bodies to the exclusion of other matters. It is true that certain other crystallisable matters contained in the cane are diffused as well as the sugars, but they are also extracted by the present processes, and they are easily eliminated in manufacture, and after all only form, according to Dr. Icery, 29 per cent. of the weight of the cane, while the sugar forms 18.36. It was the uncrystallisable matter which caused the fermentation and acidity, and worked so much mischief by the old process of extraction, and this would be left in the refuse by diffusion.

The principle of diffusion is thus applied to the sugar cane. The fresh cane is cut into thin slices, and a certain portion is put into closed iron vessels, called extractors, of which there are six arranged in what is called a battery. Into the first of these, No. 1, pure water, slightly warmed, is admitted by means of a stopcock from a cistern placed at some height above the "extractors." The liquid is allowed to rest half an hour, and then passed on to the next extractor, and so on to the last, from which it is passed on to the factory. It is found that when pure water is applied in the first vessel the quantity of saccharine matter extracted from the cane is small, but when passed into the next the proportion becomes larger, and so on till it reaches the last, where all the sugar is extracted at the first operation. This fully bears out M. Dutrochet's statement that a less dense liquid will pass more rapidly into a more dense liquid than *vice versa*.

The specification of the patent is numbered 594, 27th February, 1866, and is taken out by Mr. William Edward Gedge for Mr. Frederick James Vivian Minchin, of Aska, Madras Presidency, India. The well-known excellence of the Aska sugar, made on the old plan, is a sufficient guarantee that the invention has found favor in thoroughly practical eyes, and we believe by the time of the great Paris Exhibition of this year that it will have been fully tested; and that samples of the sugars made by this beautifully simple process will be shown. We confess that we entertain sanguine hopes of the success of diffusion, as applied to the sugar cane from the experimental trials already made; but of course until the invention has been thoroughly tried its commercial results remain open to question. The process of diffusion claims a distinct superiority over all other processes, in its capacity for extracting a much larger amount of juice than has heretofore been obtained by ordinary pressure. It is confidently asserted that at least as much as 15 per cent. of saccharine matter can be obtained. In the next place, the expenses attending the extraction of the juice are about 50 per cent. less; and the cost of the machinery is about 40 per cent. less; thirdly, the machinery is comparatively simple and inexpensive in its management; and finally, "the process excels not only in its simplicity and regularity, but the juice can be delivered to the factory diluted with but 15 per cent. of water." Diffusion is also said to be peculiarly applicable to the extraction of sugar from the sorghum and the maize.

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