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HUNT'S MERCHANTS' MAGAZINE

AND
COMMERCIAL REVIEW.

JULY, 1854.

Art. I.—SAIL AND STEAM COMMERCE.

DESIDERATA OF SAIL COMMERCE—OBVIOUS ADVANTAGES OF THEIR REFORMATION—THE DESIDERATA OF STEAM COMMERCE—INEFFICIENCY OF COLLINS' STEAMER "PACIFIC'S" WHEELS—HER UNAVAILABLE MOTIVE POWER—RIVER STEAMERS.

THAT which is directly incorporated into our very prosperity, which is a part of our individual and national life, and peculiarly so of our international life, speaks its own eulogy at the door to the public mind; its advances are as rapidly proclaimed as from time to time they occur; but the present and the past speak not the future, except as to its firm basis, which is beyond the reach of decline; except they tell that its advances are unknown, which may mark its culminating progress, as it has been so forcibly marked by the past; and except they tell that the present, as that of no past epoch in the day of its unsurpassed honors, has not reached its meridian splendor.

Marine Commerce has proclaimed within a half century last past her successful alliance with steam, her extension of that treaty to Trans-Atlantic Commerce, her improvements in model and rigging, as shown in the fast modern clipper in contrast with the anterior, dull-sailing ship, and her nautical improvements under the scientific aid rendered through the National Observatory Department.

It would be arrogance to suppose that the public is not already fully sensible of the wide-spread, extending, and deep-rooted interests of marine Commerce in our vital prosperity, and sufficiently so to watch the pulsations of her manly system. Not to watch them, through fear lest her sail or her steam branch shall decline or lose its vitality; such a thought would be contradicted by the prosperous enterprises of our commercial men, by the constantly advancing attainments of her mechanical departments, of her ship-builders, her riggers, and engine-builders; of her army of mercantile and navy commanders, so bold to meet the dangers of the deep, and so no-

ble in humanity's calls, aspiring to the noblest and highest duties and honors of their profession; and it would be false to the late successful accomplishments of science in her so full hydrographical history and obvious instructions therefrom, so ably set forth to mariners as at an early day of their practical trial at once to establish important advantages, and their profitable and reliable character; all of which speak her progress and not her decline, even speak her future eminence unknown—but to watch them to know at all times her healthy or unhealthy state.

The human pulsations indicate, better even than the external appearance, the real state of the physical system, and while all around judge by the external appearance, that imbecility, disease, dangers, and death brood now and then over different members of the great family, often over many of them at the same period of time, he whose profession especially qualifies him to judge critically, watches the pulsations of the internal system, and as he determines the disease, actual or threatening, wisely determines the proper restoratives or preventives. So, too, the public judge of the external appearances of sail commerce, and observe now and then her imbecilities, her diseases, her dangers, and the too numerous deaths, as they hover over and attack different members of her great family; but he whose profession constitutes him a judge of her internal system, should watch her more sensitive pulsations, and knowing her threatening and actual diseases and dangers, should know of and provide the remedies.

The general and specific diseases by which sail Commerce may be personated, have all her lifetime hung about her system, like uncertain, occasional diseases and dangers to the constitution of man. Thus, as when the ship lies at her dock ready to spread her canvas to the winds, but the winds are not forthcoming at her wish, or are too adverse for the narrow channels or threatening shores; and as when she drops anchor at the door of our harbor, because the winds are too light or too indirect to speed her to her berth, the resting and reinvigorating place, which she seeks so anxiously after the tedious, protracted, and perhaps disabling labors of her day, (her passage,) then is she imbecile as the invalid upon the sick bed; as she finds herself in the calms that settle upon the bosom of the ocean, that prevail at certain seasons and that monopolize certain broad "belts," as in the tropical and equatorial calms, to their peculiar and constant reign, then is she like the feeble patient sleeping to recover hope and vigor; as the faint breezes fan her, then does she show recovering vigor; as the dead head-winds assail her, then is she like the strong man striving boldly against disease, perhaps convulsive attacks, or perhaps moderate or mild in form; as the "slant" winds drive her from her chart course, then is she like the robust man baffling a staggering disease; or, as when she finds herself by enticing or decoy winds under their sudden reversion, helplessly too near the lee shore dangers, and as when she is driven by winds overpowering her skill, also too near threatening coast dangers, then is she like the almost hopeless and helpless victim of terrible diseases; but, worst of all, when the far too numerous and too terrible shipwrecks overtake her, then is she like man tossed in the arms of Death; and we would that she did not so alarmingly often carry in her embrace numbers, and often large numbers of human victims to her disease, to the same watery grave!

But, again, Wisdom, in the outfit of his bark, (man,) provides for his diseases by professionally bringing the preventives and restoratives of Science and Art to the aid of the mortal frailties of his nature, that he may

preserve or restore a healthy constitutional vigor; which frailties of man are well known, for they are taught by fact, as well as by the words that gave life to the fact when it was uttered unto the woman, "I will greatly multiply thy sorrow and thy conception; in sorrow shalt thou bring forth children;" and unto Adam, "Cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life; in the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken; for dust thou art and unto dust shalt thou return." We all feel and realize the fact, hence we desire, appreciate, and honor the faculty that comes to our relief; and the medical department of science is based upon the firmest foundations, for it is seated upon the best understanding and judgment, and is deep-rooted in the affections of man.

The constitutional diseases of sail commerce are just as well known by facts, and by that inspiration that said—"The wind bloweth where it listeth, and thou hearest the sound thereof, but canst not tell whence it cometh or whither it goeth," and it is left to the latter half of the nineteenth century to repeat the echo—from whence cometh help?

No medical department for her ills and woes is publicly known, and none is pretended, and so far as we can judge of public sentiment and effort, and commercial apathy in this regard, none is sought for; supineness and patient, passive sufferance, seem to me to predominate, and wealth lavishes from her abundance to so multiply the numbers of her crafts as to make good their inefficiencies from disease, and to reinforce, by new levies, the numbers that deacease.

Observe, due care is taken by the keen foresight of Finance to avail herself to the utmost of science, art, and nautical skill, when the ship is healthy, that no fractional percentage of the gratuitous forces of nature that conduce to such health shall pass their deposits beyond her coffers, but the mite from those deposits she does not send forth to invite from the apothecaries of Commerce—Science and Art—the forces of art to prevent and relieve her from the diseases of her system. The smoothly-gliding model is duly encouraged—the ingenuity of man in spreading her multiplied canvas, bearings broad as the long-arm of strength can reach, as high as the upper currents and as low as the surface currents, and longitudinally sail after sail to catch every "slant," winding, or diverted current of the wind, is encouraged until every flowing, fluttering breath of force must lead their aid in enabling her to creep like an infant, at times, to walk like a child, and to engage in the electric race of life, as when in the race with time she has beaten (as yet at times) the most rapid steamers that have ever furrowed the tranquil inland, or billowy, oceanic waters; the highest skill is sought in her nautical instruments, and the highest energy and talent in her commanders; yet it is said of her—"one thing thou lackest," and it is thus, as if we would do everything to adorn the body so naturally and perfectly developed, but scorn to provide for the inspiration of the soul by force—since force is the living spirit of the ship—when nature ceaseth so to do, and leave her a victim to her mortality.

Steam Commerce possesses the two familiar ways of developing the force of steam in the run of the ship, but that which is best for the full steamer, (the paddle-wheel,) so greatly encumbers the ship in fair sailing, that it is secondary to the screw as an occasional motor. Neither is the screw propeller adapted, in that it hinders more in fair sailing than it helps through adverse winds, which fact is practically known; and the

philosophy of the fact rests upon another fact, that the fair winds by which a ship may run "close hauled" to her chart course, considerably exceed the adverse winds—as in the European trade they equal four-fifths of all the winds to the outward-bound passages, and five-eighths to the return passages—so that the distance through which her propeller acts as a "dead drag" to the ship, even though its blades are feathered, forbids its availability. Therefore the use of the screw, without transferring her sailing identity to that of a steamer, is like giving the naturally well man medicine quite debilitating, that he may have its restoring tendencies when naturally sick.

Consequently, the personification of Sail Commerce shows her possessed of a characteristic vigor and substantial progress so long as the natural elements—winds and currents—conspire to give her life, health, and an energetic vitality—shows her, when the winds are fair and full, the pride of the ocean, and an emblem of man's best estate; but when these elements desert her, it shows her helpless "upon the bosom of the deep" as an infant in its mother's arms. When they assail her, she is tossed as in a lottery of uncertain misfortunes, in which she may adroitly draw some favor and ultimate headway, from her natural opponents, in which she may hold a conservative position, or in which she may be overpowered, pressed backward or forward into dangers, or perhaps into the coasting grave.

The voice and the echo of our commercial country, of our halls of science, of our studios of invention, and of our shops of industry, should be, "Why is not such an alliance made with Steam as that she may always have at her command Force?" Force that shall establish her above these embarrassments, dangers, and losses—force that shall carry her through the calms of life with a steadily onward course; not rapidly, like the steamships, because its laboratory would require too much room in her nursery chambers; but moderately, so as to keep up a healthy pulsation of almost six knots hourly, which a little homeopathic engine would breathe into her system, while yet its presence would hardly be observed, except by its wonderful effects, would hardly be known, in its so great bed-chamber, yet whose preventing, relieving, and restoring tendencies could hardly be realized. It would carry it through the "horse latitudes" (tropical calms) as if nature was cheated of her purposes of delay; it would carry her through the horrors of the "doldrums" (equatorial calms) as if the scepter of Neptune had yielded to the progress of republicanism—to the healthy industry and practical science of the age; it would glide her steadily through the too light breezes, as a gentle and nourishing stimulant encourages the slow and feeble energies of man; it will help her as the adversities of life buffet her progress, and keep her unvaryingly in her onward course; and, as when new diseases ordinarily assail us, if we have an antidote at hand they are harmless; and when, by the overpowering winds, she is driven waywardly far distant into the broad expanse of the waters, or into proximity to dangers or into dreadful disasters, then it is able to meet the assailing elements of the winds and the waters by the no less powerful elements of fire and water vaporized, so that its subtle force withstands the winds and billows, and yields not to their mastery, but boldly defies them, and resists or exceeds them, and adds to her noble prow safety and progress.

The universal absence of such a panacea tells the answer. It is because

human skill has not arisen to one of the greatest necessities of Commerce; and can we say further, that it is because it cannot thus arise? This would be a lie to the onward course of man; it would be insulting that spiritual halo that hovers over genius to direct it in the paths of usefulness; it would be abusing the progress of science, industry, and ingenuity, so happily blended, as when they bring forth the radically important improvements of the age; it would be charging impotency to the Medical Department, because they had not relieved and restored a patient whom they had never been called to visit—the patient, in the meantime, having been giddy under the wealth which his sickly system, even, could gather, scorned to interrupt the steady treasury flow by wisely caring for the greater flow which a healthy system would produce.

When these diseases shall have cried long enough in vain; shall have been long enough endured by the cool apathy of the directly interested parties and friends; shall long enough have made our marine news columns to groan under the long lists of disasters—then, perhaps, an investigating and inventive genius, like a Watt, or a practical mind and skill, like Fulton's, or an alliance of pure science and genius, like that of Morse, may arise to meet these so pressing necessities; or perhaps like the little colliery railways that profited man in their humble underground services, and in due time stretched themselves out to unite and profit cities, states, and nations, the system of our little pleasure crafts that bedeck the bays, now scudding before the breeze, now stemming the breeze by the steady stroke of the oarsmen, shall grow until it pervades the ships as the railways do the lands; and until the row-man's arm becomes the strong arm of the Cornish engine, (which has always swayed its scepter of superior virtues and power over the crank engine, in the heavy European mining operations;) and when the small engine cylinder and boiler that tugs not only the ship but its own hull, so very advantageously through the waters of our harbors, shall be honored with a retired chamber on board ship, and shall have dismantled itself of its massive unnatural propelling wheels in exchange for some device appropriate and practical, yet as simple as the oar itself—hence more effective than the wheels or screw—then will Sail Commerce profit by the simple mechanical design shown in rowing, just as Inland Commerce has profited by the little railways that in the deep chambers of the earth led to their present extended and increasing use over the earth.

It is very evident that no propelling device that is to be immersed during the fair winds, can possibly be profitable as a remedy to the disadvantages or diseases we have specified; as we have seen that the wheels and screw have both been proved entirely incompetent, and they can only be used where steam is the constant motor. In the little pleasure-boat we may go easily and briskly by sail, when the winds are fair and full; or by oars when the winds fail or are too adverse; or by both when the winds are slightly though insufficiently available. Just such a device, in character, not in detail, Sail Commerce needs for her ships; for we can by no means substitute the little paddle-wheel or screw, as delicately proportioned to the row-man's power as is the oar, and accomplish like effects; and their entire absence from pleasure-boats, of men's power, shows them in comparison to the oar worthless; for that they cannot be adapted to a few men's power upon the small boat as well as to an army of men upon the leviathan steamer, will not be presumed or claimed.

The fact that the simple principles of the oar have never been adapted to the steamer does not, therefore, presuppose them inappropriate; it is simply an acknowledgement of the historical fact, but in no way prophetic. No person should be so indiscriminate as to infer from the reciprocating propelling devices which have been experimented with in the early, middle, or latter history of steam navigation; that they have ever embodied the simple rowboat transmission of the actuating power—this has never been done; and the task undertaken heretofore has been far more difficult, since it has been the task of producing the reciprocating rectilinear (or curvilinear) propelling action from a rotatory resultant, (or crank transmission,) produced by the reciprocating primary; whereas, this disadvantage and loss of power in producing the rotatory force (in this reactionary manner) constitutes the well-known practical superiority of the Cornish engine transmission over that of the crank engine, as developed in the heavy mining operations of Europe, where, for this simple reason, (both being equally well adapted to the duties, except in their transmissive properties,) the Cornish duty is greater than the crank duty as (100 is to $77\frac{1}{2}$) four is greater than three.

It is very obviously just as indirect and complicated to convert the simple rectilinear action of the piston to a rotatory force through the crank in navigation, to produce the horizontal run of the vessel, as it is in the drainage duties of Europe to make the same unnatural use of the power to produce the vertical rise of the water. The inefficiency in the latter case, or drainage duties, by converting the rectilinear motion to a rotatory force (as in the crank-engine for pumping) to produce the vertical rise of the water, compared to producing the vertical rise directly from the same rectilinear reciprocating motor, is just as notorious as is the fact that this most early and extended business exists. And the inefficiency of the common crank-engine in this mining duty, peculiarly adapted as a merit-test of the mechanical principles, is just as well established as that of the paddle-wheel or screw is for the little pleasure boat, compared to the oar; and because the practical proof agrees with and sustains the scientific proof, that in the former case three-fourths the fuel (everything else like and equal, except the converting of the rectilinear primary motor to a rotatory force by oblique actions upon and radial reactions through the crank and its shaft fixtures) only is required by the Cornish pumping-engine that is required by the crank pumping-engine to do like and equal duties; and that in the latter case, also admirably adapted to test the mechanical principles, boys with oars in the little pleasure boat can outrun men with paddle-wheels or screw, (of course, strictly well proportioned in their relations,) all other things being like and equal, except the muscular power, and its mechanical transmission to the boat. These extravagant deficiencies in transmitting the actuating power renders both these common though unnatural fixtures (at present) of navigation comparatively unknown, wherever the natural, simple transmissions of power have been rendered practical.

Consequently sail commerce, with such prodigal waste of its mechanical motive power—for the same elementary principles as are the bases of the above experiments, should be the direct transmissive principles of steam mechanism—can only receive a little over half the aid or propelling power due to the primary motor upon the piston. The immense power upon and developed by the pistons, as in our trans-Atlantic steamers, shows the great accumulation of motive-power, since it consists, effectively, of about two

thousand horses' power, or nearly eighteen thousand men's power, essential to sustain these extravagant, prodigal losses, due to their mechanical propelling systems. Besides the comparative proof of these losses, which are seldom realized because seldom critically and fully examined, we might show by the most positive proof, based upon the published data and log of the Collins' steamer *Pacific*, that the motive-power developed by her piston, which is entirely unavailable in the speed of the ship, equals not less than four-fifths of the quantity that is available in her speed. Science traces the development of the unavailable power just as strictly as it does that available in her speed; hence there is no more uncertainty attending it in the one case than in the other.

It is further evident that a multiplicity of oars, simply used, as in the row-boat, are in nowise practical upon the steamer—even an oar to each horse-power, literally, if mechanically governed, would be absurd. Yet the oar system, reduced to a single propelling oar, so to speak, or the simple Archimedean lever, to each side, and each with a simultaneous returning oar or lever, so as to alternate at every piston-stroke, and each attached to a complement of oar-blades, (in size and number at the pleasure of the builder,) all as one, running or reciprocating lengthwise of and horizontally upon the side of the vessel, and returning above the water, giving to the differing velocities of piston-strokes any desirable velocity of floats, and we have a simple, efficient system, with the exception of a single difficult feature. This exception is, evidently, to produce the “dipping” and “lifting” of the complements of floats, or immersed areas, mechanically, just as in rowing we do it by the will, muscularly.

That this exception can be overcome, is most probable from the fact that we imitate many far more difficult human actions than this, mechanically, and with most positive uniformity and precision. No mechanical device is more simple than the lever, if the applied force acts perpendicular to it; and nothing is better adapted to transmit the power, and to sustain its inflexible positions; and nothing is better adapted to produce from the ordinary piston velocity the desired speed of the vessel; and the reciprocation of the Cornish piston and the floats (each complement embodied as one) are governed by the regulations of the steam and the rock-shaft “bumper” in the same time, and just as easily and effectively as when the piston acts upon the crank.

The important alliance between the simple, directly transmissive principles of the Cornish engine with the simple, directly transmissive principles of the oar, by which from the rectilinear primary (or piston force) a rectilinear resultant (or the speed of the vessel) is directly produced, rests upon the single difficulty of providing a mechanical device to exactly imitate the descent and ascent of the oar-blades, in which the oar-lever through which the power acts (just as simply as through the “walking-beam” of the river engine) shall be flexibly connected with the oar-blade gang, (as a locomotive to its train, or the piston to its working-beam,) so that the oar-blade gang only partakes of the dip and lift, leaving the lever movements as free and invariable as that of the working-beam of an engine.

To say that genius, inventive talent, and mechanical skill cannot effect this alliance, extremely important, yet resting upon a single difficulty, would be a stigma upon the past, and false to the resources of the age. Why it has not been done, is because it has never been attempted. The reader should bear in mind that the reciprocating devices now historical,

or piled away in the patent-office apartments, have never attempted this alliance, but a far different one—namely, that of a rectilineal primary, with an unnatural mechanical rotation, (just as unnatural as for a man to expand his muscular effort upon a crank in the same manner and as incorrigibly as the engine does, and not rather produce in the application of his force a muscular rotation by the guidance of his judgment and will, which, if he did not do, would stamp him as stupidly verdant—yet science knows no two laws for the man and the engine,) and such a rotatory force with a curvilinear reciprocation. Or the same question might be answered in the same manner and for the same reasons as we would, prior to every improvement, answer, why has not it been attained, even though its specific necessity or value had not been known until introduced.

The subject thus presented is not simply speculative, but it is rationally prophetic, in that the deductions are based upon undisputed data, while those from science are indisputable, and the inductions follow as effect ever follows cause.

OBVIOUS ADVANTAGES OF THEIR REFORMATION.

The advantages of such a practical alliance would render steam applicable to sail Commerce generally, without its losing its identity at all as a sail marine in its economical relations, though it would lose its present characteristics of uncertain, tediously lengthy, and dangerous passages.

In regard to the shipping of the great trans-Atlantic thoroughfare, our reliable statistics show that the average fair winds, when outward bound, equal about 81 per cent, and when homeward bound equal about 62 per cent of all the winds. Now, if we take the average tonnage as given last year for the Liverpool packets, or 1,175 tons, and give to each a small engine, with the supposed improvements, such as tugs them at present in our harbors at from 6 to 8 knots, and consumes about four tons of coal per 24 hours, we shall greatly increase its efficiency. By the National Observatory authority, as laid down by Lieut. Maury, we have to the outward routes for January, February, March, and April, to 10 degrees west of Cape Clear, 2,287 miles of fair winds, 469 miles of slant winds, (or such as drive a ship from her chart course,) and 76 miles dead-ahead winds; and we have 72 vessels for the same months and routes averaging $19\frac{3}{4}$ days, which gives a nominal run of 6 knots per hour.

Hence her specific sailing may, perhaps, be thus expressed:—

	Days.	Hours.
Through fair winds, 2,287 miles, at 8 knots.....	12	..
Through slant winds, by chart 469 miles, by sail 606 miles, at 5 knots..	5	..
Through dead head-winds, by chart 76, by sail 201 miles, at 5 knots...	1	16
Calms and delays..	1	2
Total.....	19	18

Their slant and head-winds being run "close hauled," and their distance by sail given without allowance for drift, and since one mile drift requires two and a half miles run on account of the transverse sailing to recover it, the difference between the rates will not be considered too large.

It is evident that in making the run of 2,287 miles through the fair winds there will be, under a general average, light breezes and very low runs, so that, perhaps, we might assume to the strongest winds an average of about eight days' sail at 9.7 knots, so that we should give to the balance of the

distance of fair but too light winds the aid of steam. From the most accessible facts and deductions, it is probable that, to the assumed tonnage, the addition of steam to the light winds and slant winds would give about 7 knots upon the chart course; and steam alone to the dead head-winds (ship close reefed) would average 4 knots or more. Hence we would have the following results:—

	Days.	Hours.
Strongest fair winds, 1,867 miles by chart route, at 9.7 knots.....	8	..
Light fair winds, 420 miles by chart, steam and sail at 7 knots.....	2	12
Slant winds, 469 miles by chart, steam and sail at 7 knots.....	2	18
Dead head-winds, 76 miles by chart, steam and sail at 4 knots.....	.	18
Total	14	00

Making to the credit of six days' steam $5\frac{3}{4}$ days' time.

To the same months, and the return passages from 10 degrees west of Cape Clear, we have only 1,664 miles of fair winds, 1,009 miles slant, and 179 miles dead head-winds, and to which we have 110 passages averaging 32 days. The chart distance is 2,851 miles, and the nominal rate 3.7 knots, though the sail-courses, due to the winds, without drift, is 3,406 miles, or at the rate of 4.44 knots. These relations arise from the westerly winds prevailing over the easterly, and their specific runs may, perhaps, properly be given thus:—

	Days.	Hours.
Fair winds, by chart course 1,664 miles, at $6\frac{1}{2}$ knots.....	10	16
Slant winds, 1,009 miles by chart, 1,262 miles by sail, at $3\frac{1}{2}$ knots....	15	..
Dead head-winds, 179 miles by chart, 471 miles by sail, at $3\frac{1}{2}$ knots..	5	14
Calms as extra, three-quarters of a day	..	18
Total	32	00

If we suppose that to 1,280 miles of the strongest fair winds they could have a run of 8 knots, then, with the rates before assumed to steam and sail, we have, to the

	Days.	Hours.
Strongest fair winds, 1,280 miles by chart, by sail, at 8 knots	6	16
Lightest fair winds, 384 miles by chart, by sail and steam, at 7 knots.	2	7
Slant winds, 1,009 miles by chart, by sail and steam, at 7 knots.....	6	..
Dead head-winds, 179 miles by chart, by sail and steam, at 4 knots...	1	21
Total	17	00

Making, to the credit of 10 days' steam, 15 days' time.

In uniting the passages for the same months, the actual average to both ways is $51\frac{3}{4}$ days, and the supposed passages by sail and steam jointly equal 31 days, so that we have due to 16 days' steam, at low rates and consumption of fuel, 20 days' time, or a saving of nearly two-fifths the present time.

If we deduct from the average tonnage the freight of engine, machinery, coal, &c., by the saving in her running time she would increase her aggregate available freight by an addition equal to one-half of all her present freight, and also increase her passenger capacity by two-fifths of her present lists.

This is, to be sure, an extraordinary economy; and in these considerations, while some things are reliably taken—such as the chart distances which would be followed by sail and steam, the relations of the winds, which are based upon thousands of recorded observations by a large num-

ber of mariners, the time of the average actual passages, and the consumption of coal to such an engine—other points are only supposed nearly correct, as the specific rates of sailing given to the relative winds and given to sails and steam, and the rate given to steam under the average head-winds, the appropriate machinery, &c., being supposed attainable; hence the given difference is, to a certain degree, problematical; yet it is not doubtful, from the nature of the case, but that with such an engine and appropriate and efficient machinery, nearly these runs may be produced, and with great certainty and regularity.

It is an important consideration that, as we shorten the passages, we not only lessen the risks by dangers and disasters in the same proportion, but at the same time increase the ability to withstand and avoid dangers, and prevent delays. During the same months of 1852 we have the arrival of 135 vessels from Liverpool, London, and Havre, which averaged $35\frac{1}{2}$ days' passages. In the account of these passages, from the single port of Liverpool, we read thus of one vessel: "12 days west of Georges Banks"—(a little over three hundred miles from New York;) one "28 days between long. 30 deg. west and 40 deg. west," (or 28 days between the meridians of 10 degrees of longitude in the broad Atlantic;) another, "16 days from Nantucket to the Hook;" another, "7 days making 3 degrees of longitude west;" another, "6 days with pilot aboard;" one "7 days within 60 miles of the Hook;" one "20 days without making any longitude west;" another, "20 days in reaching Cape Clear from her port;" another, "25 days making 600 miles from Liverpool, and 14 days making the last 600 miles into New York;" another, "20 days from the Grand Banks;" and many other lesser, yet very embarrassing delays from the same port.

If we take simply the arrivals for the month of March of the same year, we have a peculiar illustration of the uncertainties attending sail voyages, and, too, under the well known abilities of the Liverpool masters. Thus, the shortest passage was 17 days, and the longest passage nearly four times the shortest, or 66 days; the next shortest was 18 days, and the next longest three and one-fourth times the longer, or 59 days. We have also two ships that were a longer time without making any longitude west (that is without crossing a meridian which they had reached at an earlier day,) than either of these shortest runs. And another instance of a packet ship which was longer reaching Cape Clear from Liverpool (not far from 300 miles,) than either of these shortest passages; and another ship that was a longer time making 1,200 miles (a little over one-third of her chart route, and it being the first 600 and last 600 miles of her route,) than twice that of either of the two shortest passages.

To fourteen passages of ships arriving within three months from one port, there is an aggregate of extreme delays equal to 7 months or 217 days, (and delays not included in the list of disasters,) and the distance covered by this sum of delays with a six-knot steam-power, would have been run in thirty-seven days, showing a net saving of six months time, or 180 days. Nearly two-thirds of this sum of delays is west of the Grand Banks, (off Newfoundland,) hence a greater coastwise exposure, greater risks of life, of shipping, of merchandise, and of disasters.

But from the other English and European ports we have a similar tale of embarrassments, and to all an addition of a large portion of the too lengthy daily lists of disasters, many of which would be directly avoided by such an available steam-power.

A commentary upon these facts, to speak their pressing demands upon commercial men, to speak the economy of a remedial alliance with steam, (which cannot be effected under the present system,) and to speak the humanity of such an alliance, to preserve the lives of those now swept by hundreds to a watery grave during a single prevailing storm; where the ship is without a single hope from its inherent resources, and what is worse, without the least preparation for relief by possessing a contending power to the winds, or steam fixtures for the emergencies, is useless; *they* speak more forcibly than words of eloquence, than rhetorical appeals, and they speak financially as well as to the understanding and the heart.

ADVANTAGES IN THE SOUTHERLY, EASTERN, AND WESTERN COMMERCE.

In the ship's great highway to the Pacific's eastern and western Commerce, southerly by the capes, we find still more extraordinary circumstances showing the necessities for an alliance of canvas and the winds with steam. The common and almost universal dread of the calms of the "Horse Latitudes" and the "Doldrums," of both the Atlantic and the Pacific, have led, by their embarrassments, to the most careful and philosophical investigations, and nautical instructions therefrom; and their profitable development by most perfect ships and able commanders—all of which we cannot too highly appreciate as one of the great modern improvements. But when the winds and currents cease their motion, the ship's locomotion ceases; and when they are adverse she is greatly restrained from her destined course.

Whatever the destination south of the equator, all take the same thoroughfares, according to the season of the year, best to clear the South American Cape; (St. Rouque, a little south of the line,) hence, the routes to the equator are highly important. The facts and data of these routes are in contrast with the European routes, in that the common and extreme delays in the former, proceed from the absence of winds chiefly; while in the European trade they proceed, chiefly, from adverse winds, except in the milder months; but they are similar in their uncertainties—in their irregularities—good ships having lain longer in the "doldrums" than others have taken from the New England ports to California—in their long average of passages, compared to the shortest when the ships pass the "dreaded" latitudes and equinoctial "horrors," as the exceptions to nature's common laws—and in that the relations of winds to the equator, agree very nearly with those to Europe; while yet the passages to the equator agree more nearly with the passages from Europe, distances considered; hence they both agree in their pressing necessities for relief, through their only possible resource, that is, by a suitable alliance with steam.

Nothing more forcibly than the simple, careful examination of the ship's "logs" to these passages can be deduced to show their embarrassments, and the great relief they would sustain from a small steam power appropriate to canvas ships. By such an examination of the log of the Flying-Fish, in her celebrated run of nineteen days to the line, it shows plainly that three days' steam, partly in the "horse latitudes" and partly near the equator, would have saved her two days' time; and in the Flying-Cloud's celebrated run to California, three-and-a-half days' steam would have saved her four-and-a-half days' time to the equator; while several days'

steam would shorten many a passage more than one-half of their actual time. In certain months the average time ships have occupied in crossing the "belt" of equatorial calms exceeds the average steamship run to Europe; while by a little steam-tug, (with a twenty-eight inch cylinder and six-foot stroke, to a 1,200 ton ship,) such as ply in our own harbors, would have crossed them in two-and-a-half days, and saved the time of the shortest steam runs to Europe.

Although the average runs to the line have been remarkably shortened under the so useful instructions of Lieutenant Maury, yet, from their peculiarities, it is evident that steam used about one-fourth of the time of the present average would lessen that average to about two-thirds its present time, giving very uniform runs—the dull-sailing ships requiring more steam than the fast-sailers.

The runs to California have been very greatly reduced in two ways, one by having better ships and better rigging, and the other by better knowledge of the best routes, and better sailing instructions; but neither of these reaches the great desideratum of Sail Commerce, namely, motive force towards her destined port, when the winds cease entirely, when they are but faint breezes, and when they oppose such progress.

These embarrassments are such, that to the Flying-Cloud's short run, had she had a six-knot steam power, by twenty-two days' steam, she would have saved eighteen days' time, and 1,457 miles of her actual run. By her log her position at noon, each day, is given, hence we can tell accurately how much she would have saved in distance, from these positions, by steam, (that is, she could not have saved less,) and yet have kept her same general route; and her forty-nine days, when she would not have used steam, would have been unvaried, and in which she ran 10,940 miles, or at an average rate of 9.3 knots per hour. To her other forty days she ran 5,011 miles, or at an average of five-and-a-quarter knots, nearly; but by steam's enabling her to keep her chart routes, although its use is at different parts of her passage, her forty days are reduced to twenty-two days, steam and sail, and her 5,011 miles to 3,554 miles, and which is run at an average of six-and-three-quarter knots nearly per hour. Hence we see how it is that so little steam does so great good; for, just like homeopathic medicine, it reaches the disease directly—yet the little medicinal store is hardly noticed in the great nursery chambers.

In the partial log of the Sovereign of the Seas, (in which the commander gives to the National Department, only fifty-three days out of his eighty-two days' run from the Sandwich Islands,) in one of her celebrated runs, we observe, that for thirty-five days out of the fifty-three days, she averaged $10\frac{1}{2}$ knots, running 8,552 miles; the other eighteen days in which she ran 1,993 miles at $4\frac{3}{5}$ knots, would have been run in ten days, and have saved four hundred miles of the distance, or averaging nearly $6\frac{2}{3}$ knots. But this part of the log was evidently given chiefly to show his best sailing; to the other twenty-nine days of his run steam would probably have been much more observably essential.

But since these are among the best runs ever made, they are those least likely to require steam, or least likely to show its necessities, though we see its great advantages very forcibly.

The average of all American vessels that arrived at San Francisco during 1850 is $187\frac{1}{2}$ days. Of course some of these made intermediate ports, some were dull sailers, and some had extravagant delays. And

thirty-six vessels from New York, Boston, and Philadelphia, that followed Lieutenant Maury's instructions, averaged 152 days from port to port.

The average passage of thirty-seven clipper ships that arrived at San Francisco, from our Northern Atlantic ports, from January 1st, 1851, to April 1st, 1852, is 124 days. Upon this fact it is easy to establish reliably, a general average of from eighty to eighty-five days' passage, uniform, very nearly, in time with steam. In 1852 twenty-nine vessels averaged 124 days from port to port.

The twenty-nine best passages in 1851-52 averaged 111 days, having followed Lieutenant Maury's instructions; and some of these are unequaled in 1853. Now, if we give to these ships only the number of days of fair winds which the *Flying-Cloud* had out of her short run; and an average of nine knots, then twenty-five days' sail and steam will make the run in seventy-four days from New York to San Francisco. We should even remember that, to this first class of clipper ships, it is not to the inability to run well in fair strong winds that regularly prevail through the greater part of their passages, that their lengthy average and irregular runs are attributable—for their logs show to those ports uniformly good runs; but to their delays by calms, faint breezes, and adverse winds, which are entirely beyond definite consideration—for to these ports their logs show the differences and otherwise extraordinary irregularities.

Admitting, then, a practical alliance with steam, that shall not sensibly diminish the sailing properties of the ship—her propelling mechanism being out of and above the water, just as naturally as the oar (though not like it) when not in use—and such as to give ordinarily a six-knot run, and we have further very reliable data upon which to establish the certainty of 74-day average passages, which is just two-thirds of the 111-day average.

The freight due to the machinery and coal would, of course, lessen the available freight somewhat—but should not equal one-sixth; and at the furthest could not exceed one-sixth, even when providing for more than ordinarily favorable passages; therefore, three cargoes by sail and steam, each less by one-sixth of sail cargo, equal two-and-a-half sail cargoes; and three sail and steam passages are performed in the same time as two sail passages; hence, the aggregate available freight capacity is increased over that of its sail capacity by an addition equal to one-fourth of its sail capacity, (or half of a cargo) in the time of every two sail passages.

The increased price of freight due to so greatly shortened and reliably regular passages, would much more than cover the expenses due to steam; hence, these considerations leave a net increase of available duty to each ship, equal to twenty-five per cent of the present available duty.

In the return passages by the Sandwich Islands, China, and India, the necessities are in like manner pressing; but from the less complete knowledge in relation to these routes, we cannot tell so definitely the considerations properly due to them.

The considerations thus far, present the embarrassments of Sail Commerce as we are to hand them down to our successors—to the future, uncertain, irregular, and inefficient; or else, into which we are to wreath the laurels of relief and reform, and thus hand it down under the blessings of a skillful culture, which shall have engrafted to its powerful body a branch which draws from the fountain-head of nature, (the coal mines) an additional source of life, so as to insure a perpetual vigor through an alli-

ance with the forces of Art, when the gratuitous forces of Nature fail to produce a constantly efficient progress.

THE DESIDERATA OF STEAM COMMERCE.

We would that no other considerable branch of Marine Commerce was stamped with equal inefficiencies, compared with what they should be—with no local internal debilities—with no crippled locomotive properties, and with no constant diseases permeating through her system!

When Commerce made her alliance with steam, now so extensively developed, it is greatly to be regretted that her successful Prime Minister (Fulton) had not effected the alliance with the then as now well-known superior branch of the mechanical system, with the elder, the efficient Cornish engine—and not with the inferior branch, which had been weighed in the scales of utility, as it is also weighed by the standard of science, and “found wanting,” with the younger crank engine.

Under the reign of Watt the former reached that high pre-eminence it has ever so signally held, and the latter received its birth; even the latter has, therefore, more than doubled the life of man in actual profitable service—and while both were born to very different spheres, yet both are essential to fill up the peculiarities of Providence; and to the lighter duties of the railways, shops of industry and of art, the former makes no pretense; while to the heavy duties of navigation the latter has less pretense of right, or merit, than it has to the heavy mining operations—since it is forced to ally itself with an unnatural or crippled locomotion—while in drainage duty, the latter and the former possess the same locomotive developments—the same double-acting drainage apparatus.

It is important, therefore, to notice their respective spheres—and that peculiar to the Cornish transmissive principles, is to develop a rectilinear motor in a rectilinear resultant. The reciprocation of the motor is mechanically immaterial.

That peculiar to the crank transmissive principles is to develop a rectilinear motor in a rotatory resultant.

But in steam navigation by the present system that duty becomes twofold; because the rotatory resultant from the piston force must, by the same laws, be reconverted to a rectilinear resultant.

Ordinarily, these conversions are under the simple mechanical laws, with the actions and transmissions perpendicular to the radii of the machines—hence immaterial how often multiplied; but not so in steam navigation—for these laws are strictly applicable to but one point of the actuating force upon the crank, (when the piston connections and crank are at right angles to each other;) and to but one point of the rotatory power of the wheel upon the vessel, (when the action upon the water is parallel to the run of the vessel, as when the paddle is perpendicular under the center of the shaft.)

Under the laws of simple mechanics the phenomena of the crank engine are impossible. From the simple transmissive principles of the Cornish engine, a miracle could only develop the variable impulsive crank piston stroke—hence, no sophistry should ever cover the truth, that the one develops itself under the laws of simple forces; and the other under the laws of compound forces, or of diversified developments. Newton classifies the expansive action upon the piston, and its development upon the crank, as under the compound development of the acting and a de-

rived reacting energy, or function; while D'Alembert classifies it as simple diversified developments; commonly, we adopt the former, though analytically we often adopt the latter. Both give like results from like causes, and, though it is immaterial by which we speak, the former will be the more generally understood.

Mr. Tredgold and others have correctly analyzed these values and summed up the resultants, which abstractly equal only (.636) six hundred and thirty-six one-thousandths of the primary. But practically, Mr. Tredgold makes them nearly (74) seventy-four per cent of the primary. (The Editorial Appendix Considerations *embody only one part* of the essential phenomena of the crank development, hence the conclusions are unreliable. The practical considerations by Mr. Bourne, editor of the "Artisan Club," and other reprints of the same considerations, are in like manner incomplete and unreliable.*) The abstract and practical differences arise from the variable expenditures of steam. Abstractly, an equal quantity of steam is supposed expended to each variable obliquity of action; practically, this supposition is not true—hence, in the practical considerations we take, (and they are given by Mr. Tredgold,) *the actual expenditures to each*. Therefore, when no steam is expended, the transmission is zero; when near the piston extremes, the rotatory force is very small—science measures to the least fraction just the steam that develops its force to the least possible space of piston motion, or to its greater corresponding crank-pin motion, and their sum, unerringly throughout its stroke. The more exact sum than is given by Mr. Tredgold, equals $77\frac{1}{2}$ per cent of the primary, independent of and without regard to friction.

It is obviously as well as scientifically true, that comparing the apparent piston development, when acting upon the crank, with the crank-pin development, is like comparing one drunken, staggering man with another, since both have drank of the same debilitating drug; for it is very obvious that if the piston was not radically intercepted, its velocity would be uniformly constant, and equal to its velocity at the most rapid part of its stroke. Hence, when we unnaturally interpose the radial interceptions of the crank and shaft fixtures to the velocity of the piston, which would otherwise be not less than that of its most rapid point, we cannot take the lessened velocity as the velocity due to an unintercepted development.

The difference between the rotatory development (or the apparent piston development) and the actuating primary motion (or the piston development, if always at right angles to the radius,) equals the sum of all the reactionary developments, derived from the rectilineal primary to produce the force of rotation.

If sophistry could always cast a mantle, as she has sometimes done, over the fact, that as the rotatory pressure is lessened by the obliquity of action to the radius, the velocity of the piston is lessened also—then the important truth of the inefficiency of the crank-engine, by a prodigal waste

* Because they take the greater crank-pin velocity over the actual piston velocity as an increased velocity due to the oblique actions upon the crank, whereas the piston's actual velocity is lessened by the oblique crank interceptions, below the velocity due to the piston in perpendicular action to its radius or crank, in the same relations that the actual piston velocity is lessened below the crank-pin velocity. Hence, under the analytical rotatory pressures without the fly-wheel the crank-pin velocity is uniform, and the piston velocity variable as in practice; therefore, we add the fly-wheel to restore an equilibrium velocity of crank-pin between the variable analytical rotatory pressures and the uniform practical load; which takes force from the active piston-center, as the steam is expended faster, and adds force to the dead-centers, as the uniform load exceeds the pressure of rotation.

of nearly one-fourth of all the actuation upon the piston, as practically proved and well known in the mining districts, which has staggered the indiscriminate mind, and will continue so to do, although it admits a truth for which it cannot account.

It is even presumptive to suppose, if unprejudiced by sophistry or indifference as to the truth, that the unnatural phenomena in mechanics developed by the crank-engine, in that it twice to every piston stroke acts lengthwise of its radius of transmission, and twice through all possible angles to it, only one of which equals the directly transmissive action, as when perpendicular to the radius, can, notwithstanding the direct positive contradiction, equal the development if the piston was always perpendicular to the radius.

Omitting the rigid scientific proof, we state simply its results, which are that only $77\frac{1}{4}$ per cent of the actuating motion upon the piston is available upon the paddle wheels or screw propeller of a steamer, the difference being just as absolutely unavailably developed as if so much of the steam escaped through the safety-valve of the Cornish engine.

UNNATURAL PROPELLING SYSTEMS.

Again, in the alliance of steam and Commerce, the most unnatural philosophy of locomotion seemed to pervade the eminently practical genius of Fulton. Our propelling systems have ever been disowned by nature, and they are obviously the paraphernalia of man; for nature would have endowed Commerce with far more efficient locomotion, as with but one exception she has the entire locomotive creation—the exception being that class of which it was declared, “upon thy belly shalt thou go, and dust shalt thou eat all the days of thy life.”

Having a primary motion of precisely the same character as is required in the speed of the vessel—reciprocation in navigation is immaterial, or rather is favorable—it is surprising that we complicate the production of the speed by the most wasteful and unnatural mechanical media.

From the first unnatural development we have a rotatory resultant enfeebled by an exhaustion of nearly one-fourth of its producing vitality; but the second unnatural development is also enfeebling and exhausting.

Like the frog, introduced to all schoolboys, that could jump three feet in his progress out of the well every day, though he could not avoid falling back one foot every night, the paddle wheels of the noble steamer go horizontally back—“slip” from one-sixth to one-third as fast as her hull goes forward. A river “slip” of one-sixth the velocity of the effective pressure of her paddles equals one-fifth of the vessel’s run; and one-fifth slip equals one-fourth run, and one-third slip equals one-half the run: hence, so much of the rotatory power of the wheels as is developed to produce the horizontal slip of the wheels cannot, of course, be developed in the horizontal slip of the vessel or her speed. When she is fast at anchor, to her wharf, or aground, her whole motive power is thus developed in the slip of her wheels.

The slip of the screw propeller exceeds that of the wheel and is secondary to it in transmitting the rotatory power to the vessel; hence, we shall not further allude to it.

In the wheels there is an additional slip, or cycloidal slip, which is produced by the rotatory motion of the wheels and the horizontal motion of the vessel, and arises from the constant passing of the unending series of

floats from the water's surface down to their lowest immersion and up again to the surface; hence, each float is far more embarrassed in its duties and complicated in the development of its actuating force than was the frog in his retrograde movements; and what is true of each float is true of all.

But the unnatural developments are more than twofold; and the third is the radial action of the wheels upon the water and their oblique re-transmitted action upon the vessel, by which we have a constant series of very unnatural developments. So unnatural, that in the Trans-Atlantic steamers at their usual or average immersion, the first or surface entering paddles would, if the vessel was as the same specific gravity as the water, raise it into the air at the angle of about 45 degrees to the surface of the water; so, too, the leaving paddles, if fully resisted and not counteracted by its buoyancy, would submerge the ship at the same angle; and thus in the dipping floats, we have an increasing series of available actions upon the vessel as the obliquities grow less and less, until parallel to the vessel's run; and a diminishing series in the rising paddles, as the obliquities increase.

Another unnatural development of the wheels is their excess of, or unnatural travel in the air. Each float is compelled to move about three miles in ocean steamers, and about five miles in river steamers, in order that they may aid to move the ship one mile, less the horizontal slip of the wheels. Now it is no inconsiderable development of their motive power which whirls these high wheels through the air, made very dense by the water thrown through and pervading every nook and crook of the houses. Evidently, the per centage of this power is much greater in river than in ocean steamers, and but light in slow steamers.

The last, though not least unnatural development, is in her far too diminutive resisting area.

Experiment, guided by the best judgment of men, has established that about one hundred square inches are necessary as the area of an oar-blade best suited to resist, and be otherwise available to a man's power in rowing.

Now, if we may illustrate the propelling system by the published data and logs of the Collins steamer *Pacific*, we find that she has to each wheel of 35.6 ft. diameter, 28 floats, each 10.6 ft. by 21.5 in., of which 7 are immersed upon an average to each wheel; and that their average dip, or at half coal, is 7 ft. All immersed floats, therefore, average $263\frac{1}{2}$ square ft. of propelling surface, or 37,926 square inches.

For several passages each way she averaged 1,828 effective horses' power. Now, if we take each effective horse power as equal to nine men, then her motive power upon her pistons equaled an army of 16,452 laboring men.

Deducting the reactionary development through the obliquities upon the crank of $22\frac{2}{3}$ per cent, which, in addition to the extra friction due to the oblique actions over direct actions, equals 25 per cent, and we have an effective rotatory power upon the wheels of 12,339 men. Hence, we have to each man's power only $3\frac{1}{6}$ square inches of immersed propelling surface from both wheels.

Having 28 floats per wheel and 7 immersed, it is evident we have twice this area immersed per stroke, or only $6\frac{1}{3}$ square inches to each man's power per piston stroke, or only $\frac{1}{15}$ of that due to a rowman.

There is still an important consideration in these relations, in that the

oar acts steadily and effectually upon the inertia of the water parallel to its boat's run, while the float of the wheel acts from a dipping angle of 45 degrees to an equal leaving angle, so that the water is stirred to a perfect froth.

Increasing the area of the paddles does not remedy these embarrassments, for, owing to the great cycloidal slip, the water is churned by the unending series of entering and passing floats to a mere foam; and the present size, in their cycloidal movement, presents two horizontal surfaces to each wheel, and wider floats would rather shut past each other, as window blinds, and would encumber the dipping and lifting of the floats, and increase the water thrown through the wheel-houses, and consequently increase the power required to drive the returning floats against the air and wheel-house spray. In these considerations, we may not take the variable relation of the floats as if in simple circular rotation at the wharf, but in their peculiar changes due to their horizontal velocity.

The resistance, therefore, to the known power upon the wheels, under the most favorable considerations, does not equal one-fifteenth the resistance we find essential in rowing; and however signally it implicates the mechanical skill of the system, it is just as if we would give the "Whitehall" rowmen oar-blades only one-fifteenth of their present surface, or less than the flat of a man's hand; and it only equals, to each effective horsepower upon the wheels, three-fifths of an oar-blade.

THE PADDLE-WHEEL DEVELOPMENTS.

As a consequence of these very unnatural mechanical arrangements, we find a large development of the rotatory power of the wheel—1st, in producing the horizontal slip of the wheels; 2d, in producing the cycloidal slip; 3d, in producing a horizontal run from the oblique actions upon the vessel; and, 4th, the residuary development, which is only available in the run of the vessel.

To illustrate these developments by the published data and logs of the Collins steamer *Pacific*, we find that in several passages each way she made 214,303 double strokes of piston, or revolutions of wheels; hence the mean effective pressure of her paddles moved in rotation 3,810 geographical miles, while the ship's run was only 3,098 miles, showing a horizontal slip of the wheels of 712 miles, or 23 per cent of the ship's run.

Her cycloidal slip is, of course, much greater, as it covers the passage of each float from the surface to its deepest dip and up again to the surface. It is difficult to determine this slip actually or relatively, precisely, yet it obviously equals nearly half the run of the wheels.

The development by the oblique lifting action upon the weight of the vessel, and the depressing action upon its buoyancy by the radial floats, we can readily determine, and in the *Pacific's* relations equals 12 per cent of the actions which tend to produce the run of the ship.

Whatever is developed to produce the slip of her paddles cannot, of course, enter into the propelling actions upon the ship, no more than the power used in overcoming the friction of a machine can be again used.

The question arises, therefore, and it is a highly important question—What is that quantity of the rotatory power of the wheels developed in producing their slip?

In propelling, the water acts as a fulcrum to the motive-power, the same as if we stood in a boat and pushed against the wharf; but if the boat is

fast, and we row, the power is developed in the slow movement of the oar; and if the resistance to the oar just equals that to the boat, then the motive-power will be equally developed in the slip of the oar and the slip of the boat. The water is, therefore, a mutual restorative of equilibriums.

From the nature of the case, the horizontal resistance to the oar, or floats, into its motion, equals the horizontal resistance of the vessel into its motion, (supposing all actions parallel to her run;) and when the resistance to the oar is immovable or infinite, as when the boat is free, and we act upon the wharf, or when the boat is fast and we act upon the water, which is movable, then the immovable resistance constitutes a perfect mechanical fulcrum. And it is further evident that when both resistances are movable, the resistances will be inversely as their velocities. This obviously arises from the equilibro-restorative medium, under which the actuating power is free to be diverted, in whole or in part, to the lesser resistance—therefore, the power is increased to the lesser resistance, just as the resistance is lessened.

Hence, the quantities of motive-power developed upon their respective resistances, is as their respective velocities.

[This law and its conditions should not be improperly confounded with the general law under other conditions, that the resistances to bodies in water is as the squares of their velocities, for their variable conditions harmonize them; for if the powers were independent, and not mutually, restoratively, variable inversely as the resistances, then the powers developed upon the respective resistances would be as the squares of their velocities.]

These considerations present reliably the general relations of the actual motive-power developed, respectively, in the horizontal slip of the wheels and the run of the vessel, of both of which we have tangible data.

From difficulties pertaining to reliable data in relation to the cycloidal slip, and the uncertainty as to how far the horizontal slip covers the legitimate consequences of this slip, we may omit a specific computation of it, preferring to come short of the real disadvantages of the system, rather than to give any uncertain relations, or to exaggerate them. If, however, there was no horizontal slip, then the friction of the cycloidal slip to trans-Atlantic steamers would be an independent and not an unimportant consideration.

We may present, therefore, confidently knowing that it is below the actual, practical disadvantages, the following computation of the variable developments of the rotatory power of the paddle-wheels.

INEFFICIENCY OF STEAMER "PACIFIC'S" WHEELS.

We have, as reliable data, of the Pacific's published log—

1st. That the horizontal slip of the wheels is to the speed of the ship as 712 is to 3,098, or as 23-100ths of 1 is to 1.

2d. That the motive-power developed by the constantly variable reactions upon the vessel to produce a horizontal resultant power, equals 12-100ths of all the retransmitted actions upon the ship.

3d. That the motive-power developed in the speed of the ship equals 88-100ths of all the actions upon the vessel.

Consequently, omitting the other developments, it is evident—

1st. That the development in the velocity of the ship is less than the sum of all the actions upon the ship by 12 per cent of their sum.

2d. That the sum of the actions upon the vessel is less than the rotatory

power of the wheels, by the development which produces the slip of the wheels.

If, therefore, we let $a+b+c$ equal the rotatory power of the wheels; and

a equal the power producing the slip of the wheels;

b equal the power developed by the oblique actions upon the ship, to produce the ship's velocity;

c equal the power producing the velocity of the vessel;

then a equals 23 per cent of c ; and since $b+c$ equals the action upon the vessel, b equals 12 per cent of $b+c$, and c equals 88 per cent of $b+c$.

Hence these values are represented thus:—

a equals 16.83 per cent of the rotatory power of the wheels;

b “ 9.98 (or 10) per ct. “ “ “ “

c “ 73.19 (73½) “ “ “ “

Their sum equaling the full power of the wheels.

$a+b$, equal to 26.81 per cent of the rotatory power of the wheels, equal the unavailable power, or the mechanical loss, while c equals the available power.

It is equally evident that these unavailable developments do not cover all that are unavailable; and that the available developments given are still considerably larger than is actually, practically, true.

We have, then, summarily, the steamer *Pacific's* developments, thus:—

- 1st. 77.25 per cent of the actuating power upon her pistons available upon her wheels;
- 2d. 56.54 per cent of the actuating power upon her pistons available in her speed;
- 3d. 43.46 per cent of the actuating power upon her pistons unavailable, or mechanically lost.

These values accrue without any regard to the known losses by extra friction due to the oblique strains over directly transmissive actions upon the crank; by the power developed in the cycloidal slip in addition to the horizontal slip of the wheels; and by the power developed in the unnatural action of so many paddles against the air and wheel-house spray.

From these reliable principles and facts, it is hardly problematical that of the actual motive-power developed in the Collins steamers, not over one-half is available in their speed. Most susceptible of positive proof is the fact, that nearly one-half of their motive-power is entirely unavailable in their speed or economy.

The simple, effectual developments of the Cornish transmission and row-boat propulsion, when properly united by mechanical or inventive skill, are to succeed these very unnatural and inefficient developments.

The losses that accrue by slip and otherwise to the wheels of the first class of light-draft river steamers, only equal from 15 to 20 per cent of their rotatory power.

The aggregate power available in their speed equals about two-thirds of their primary actuating power.

These summary considerations present in plain facts, obvious and scientific truths, the strongest and most urgent incentives to the intelligence of the age, to investigate the present, and seek of science, genius, and practical skill those improvements that shall elevate this department to that of the general enterprises of the age.

ART. II.—THE FIELD OF THE AMAZON.*

FRACTIONAL ASPECT OF THE MISSISSIPPI—RELATIONS WITH THE AMAZON—ATLANTIC THE NATURAL OUTLET OF WESTERN SOUTH AMERICA—THE PERMANENT REGION OF COMMERCIAL SUPREMACY—DESCRIPTION OF THE THE AMAZON—POPULATION, PRODUCTS, AND TRADE OF ITS VALLEY—PERU, BOLIVIA, BRAZIL, UPON ITS FREE NAVIGATION.

THE development of the great MISSISSIPPI System of the United States—with all its mighty gatherings of waters—the interminable area of its drain—the measureless bulk and variety of the products borne downward by its hundred conveying tides—and the limitless expansive capacity of its harvests—overshadowing as it does all other commercial and industrial enginery combined by nature and art within the country—with all its distinctness and entirety as compared with other fluvial organizations—is not yet, in itself, either in its wonderful present, or in the magnitude of its giant prospective, a thing *complete*. Such is the fact now; although there has been a time within the brief period of our national existence, when a mind of unusually penetrative force, in an unusual effort of that superior foresight, was required to discern what nature had endeavored so plainly to point out to the empire-founders of middle North America: that this elongated sea with all its articulations, composed, and could compose, no more than one navigation system, essential in its wholeness to the greatness, the power, wealth, age, even the safety of the single nation here established—that it was but the complement of their magnificent reach of ocean-shore, and was indispensable to the full realization of these unequaled coast-advantages.

Nature, in her primeval arrangements of the territorial surface, as well as pre-ordaining the magnitude of nations, marking out with most intelligible lines the boundaries by which they should be legitimately and to a degree per force circumscribed, has also measurably indicated the extent and intimacy of their outward correspondence. Not that there are established, in these respects, unvarying limits for all states and conditions of men. We adhere with some emphasis to the modern idea that the expansion of a nation's domain, and the extension of its intercourse may safely and advantageously correspond with the force and activity of its governmental, its commercial, its social, in short, of its *civilizing machinery*. Barriers invincible to rude tribes, have scarcely the air of an obstacle in the way of the union or correspondence of partially civilized communities. Walls higher, thicker, stronger, are by the power of a superior enlightenment, transpierced, and riddled with intelligence-holes, until the honey-combed fabric offers no obstruction to the free passage of the sun-light, and the mutual sympathies of mutual interests find unreserved interchange. Before the progress of human improvement all fortresses of national limitation, except a few eternal barricades, designed from the first to maintain immutable separation of certain major divisions of the earth, vanish, as the endless distances and insurmountable heights of the child become trifling feasibilities to the man.

Proportioned then to the state of the subject people, there are natural

* *Exploration of the Valley of the Amazon*, made under direction of the Navy Department, by Wm. LEWIS HERNDON and LARDNER GIBSON, Lieutenants United States Navy. Part. I. By Lieutenant HERNDON.

laws regulative of the extent of national domain and correspondence. One thoroughly conversant with Physical Geography, could such a one have existed before the division of the race into these minor families, might have delineated upon a map of the world the actual boundary and correspondence-lines of many nations as at present existing, especially of such as have for ages maintained unchanged social condition and frontier, and could have indicated the sort of neutral space within which the wavy partition-threads of others might oscillate.

Within the New World, and especially that part of it which we inhabit, although there exist hedges sufficient for the confinement of an uncivilized or lethargic population, nature had pre-arranged a physical system which, under the occupation of the intellectually robust people who established the mid-continental colonization, was certain to afford a development of empire and of intercourse entirely beyond the scale of European magnitudes. Notwithstanding early jealousies and a somewhat morbid tenacity of their segregate provincialism, the certainty of fusion throughout the long range of English plantations, eventuating in the formation of a country-embracing nearly the whole sea-coast of temperate North America, and the width of the Cis-Alleghanian belt, was very early evident. The French conceived the gigantic scheme of a colonial dominion extending all the way by the grand line of water-courses between the deltas of the Mississippi and the estuary of the St. Lawrence. The scheme was no vagary. Soon after our independence, the mistrustful forebodings with which many had regarded the whole transmontane region, were forced to give way; our vast coast and numerous Atlantic bays and rivers afforded an insufficient commercial accommodation. The finger of destiny pointed to the Mississippi, and its entire trunk, with the whole immensity of its western tributaries becoming ours, it was converted from a border stream into the great central nerve of the country.

It requires, at the present time, no more penetration than led to the effort to secure the embouchure and farther branches of the Mississippi, to see that the *wholeness* which that object appeared to comprise was only apparent. The view then taken, broad as it was, corresponded only with the comparatively narrow interest of a near future. The Mississippi, in all its magnificence of volume, its immensity of explored, improved, steam-navigated secondaries, with their city-crowned, life-stirring banks, though as regards political dominion, it may have completed all presently *necessary* amplitude of our circle, is yet, as regards the range of our *intercourse*, as much an imperfection as was the Monongahela before. It is as much a fragment of a great river system, as is at present the Kansas or the Wachita.

North America is not, in itself, a perfect division of the earth—at least, if ever such, it has ceased to be longer. It is a half-continent, joined to its twin-section by the Siamese ligament of Darien, and within this complement of the North the Mississippi finds its correspondent—the **AMAZON**.

Between the great rivers of Asia and Africa, or of Asia and Europe, as the Indus, the Nile, the Danube, there may be no especial relationship, but it is not thus with the two great streams of America. Rising in the same wonderful chain of mountains that extend from the Arctic Ocean to Terra del Fuego, forming the common backbone of both divisions, these running seas partake fully of the grandeur of their source. Starting forward in

contrary directions, they approach toward each other at every step of their progress, and disembogue their floods, at length, in the same great ocean.

The one has brought down the wealth gathered from the heart of North America, the other *would* deposit on the Atlantic coast, and within easy reach of our Commerce, had the burden been committed to its tide, all the inestimable wealth of torrid America, in its whole equinoctial length. Nor does it end with connecting thus the very shores of the Pacific with the Atlantic. Streams like these are not immediately lost, even in the profundity of the ocean. The tide of the Amazon, on reaching the sea, turns to the northward, and pushing its way through, or bearing along with it, the obstructing portions of the seemingly inert mass, passes the coast of Guiana, and penetrating the same archipelago to which the Mississippi volume hastens across the Gulf of Mexico, meets and mingles with its brother-tide at the coast of Florida, and thence along the Gulf Stream they rush together—skirting, as it were, a large part of the coast of the United States, and bending out, finally, toward the other hemisphere, with which the concerns of agencies of intercourse so vast could not fail of close connection, were the relationship less plainly indicated. Here, then, we have the Mississippi on a far more extended scale, with a much vaster amplitude of drain, larger and more numerous branches, a longer course, and more remote termini than it had been usual to embrace in our contemplation.

The Amazon has been *heard of* in the United States. There is a very universal school-boy knowledge, derived from the rudimental epitomes of geography, of its great length; but the dimensions of the anacondas of that neighborhood, pictured in the manual as winding about traveler, horse, and tree, their abundant folds, and preparing to follow this exhibition of affection by swallowing the former two whole, are more particularly remembered. Serious inquirers after cosmographical information, the travelers in gazetteers, the drawing-room companions of Humboldt, Hakluyt, Von Tschudi, Castlenau, and their collaborators, had admired the wonderful liberality with which nature has distributed her favors in that region, and would have gone to behold it, had it not been farther off than the nearest public square. Merchants well posted up in the opportunities and prospective achievements of their profession, have admired the magnificence of the commercial field here inviting, so long ineffectively, the resort of enterprise. Politicians, have, at times, deemed it a subject well worthy of *their* speculations. Mr. Quincy Adams, during his administration, attempted a politico-commercial alliance with the South American republics, which, had it succeeded, would certainly have had important connection with the improvement of the Amazon region. No succeeding administration revived the project of Mr. Adams, and until very lately, although some little attention has been paid to our South American relations, the means of best advancing our commercial interests in that quarter, seem to have entirely escaped the observation of the whole body of our officials. The late administration, so particularly attentive to all prospects of extending the Commerce of the United States, had the credit of making, after so long neglect, a fresh move in this matter. The direct subject of the Amazon as a new field for our commercial enterprise, was taken into serious consideration by Mr. Fillmore's cabinet, and in 1851, a practical exhibition was made of this interest, in the shape of a survey, made by

Lieutenants Herndon and Gibbon, of the navy, under very full and particular instructions from the department, directing a complete exploration of the Amazon from its source to its mouth, and a thorough examination of the products, resources, condition, and prospects, of the region about that river and its tributaries.

The Amazon itself takes its rise in Peru, and some of its principal branches flow wholly through that country, while others have their source within its limits, or within those of Bolivia. A particular interest attaches to the expedition from the large explorations necessary within these countries, the fame of whose mineral wealth had reached every corner of the world, when California and Australia were buried hundreds of years within the womb of futurity, and whose wealth purchased for them at least an historic notoriety, inciting as it did the deeds of unhallowed daring and of ensanguined victory, performed by the few volunteers of Spain. Although treasures so immense have been drawn from their mines, in the drain of three centuries, furnishing so vast a portion of the present currency of the world, and affecting, beyond all calculation, the increase of Commerce, of the arts, of wealth, of intelligence, of individual comfort, of national revenue and strength, over almost the whole earth's surface, yet the source is unexhausted. Nay, the field would seem to have been scarcely opened. Peru and Bolivia are as rich as ever. Mines which were formerly worked lie idle now, merely for the want of means to continue operations—of machinery, of money, and above all, of an enterprise akin to the spirit of Yankee effort; while there are veins yet untouched, of both gold and silver, scattered through their mountains, and auriferous sands along their gulches, which promise to rival all the abundance of the palmiest treasure-exporting days of Peru and Bolivia.

Nearly the whole of these countries lie upon the Amazonian slope of the Andes, the average distance between the mountains and the Pacific sea-coast not being above sixty miles, while the width beyond the mountains, descending towards central South America, can be nowhere less than three hundred, and must in many parts exceed six hundred miles.

By far the greater portion of these countries, then, is completely debarred, and forever, from the privilege of the Pacific. There are, indeed, some comparatively feasible passages across the Cordilleras, but these are few, and so remote to most portions, and the difficulty of reaching the passages themselves by land, (for almost all journeying in *this* direction must be by land,) is so great, that they must give up all thoughts of anything but a very small and unprofitable communication with the coast.

Nor under the nature of the country, is it possible that there can ever be any system of roads established, either for mule or steam carriage, which can effect the interdicted connection. So continuous is the great chain planted as an eternal barrier along every inch of sea-coast, so multiplied, broad, and close are the parallel ranges seated inwardly of this, and seeming to occupy half the whole area of Peru, especially, that one observing the map may discover at a glance, that nature has put her positive inhibition upon the communication of these parts of America with the Pacific, which their propinquity to that ocean would else insure; and that she has effectively guarded the supremacy of her mandate. On the other hand, the long slopes, the vast inclining planes, and the

multitudinous, broad, deep, swift, and lengthy streams, all hastening to join the King of Rivers, invite, with temptations such nature as seldom offers, aye, command, and must enforce communication with the remote ocean that washes the eastern shore of the continent. In the direction assumed by its rivers, must the main current of a nation's intercourse, of the land as well as water, be established; and when, in these two countries, scarce a drop of all the immense floods shed from the eastern slope of the Andes, is able, though following along at the foot of the mountains for hundreds of miles, to effect a western passage through that wall, and merge with the Pacific, it is certainly plain enough that if the Peruvians and Bolivians would ever become a great commercial and prosperous people, they must, like the ancient Persians, turn their faces towards the East.

There is not within the entire range of physical geography, to our comprehension, so remarkable a feature as this of the mountain barrier of South America. Parallel to it, there is none upon the surface of the whole earth. In the northern half of the continent, the range is less continuous, much less formidable, being sometimes dispersed into a series of hills, merely, and what is more noticeable, although parallel with the the coast, located at such a distance from it as to admit of the establishment of large, wealthy, and powerful countries on the Pacific shore, for which every requisite of nature is provided, in greater abundance even than in the region beyond. Here are the fitting theaters of a great Commerce with China, Japan, the remoter India, and with the whole immense Polynesian archipelago; while to afford the fullest development to this trade and to enlarge all their other intercourses, the Cordilleras do not cut off, in fact permit, a comparatively easy communication with the interior and Atlantic regions of the continent.

The moment it has passed the isthmus, however, the chain swells into a mighty column of huge, close and cloud-dividing peaks, with interlocked bases, ranged in double and treble files, and hugging the sea-coast in its entire extent from Panama to Magellan, frowning upon the ocean, like an army posted along the banks of a frontier river to repel alike the assault or unsolicited intimacy of the power beyond. All the engines which human ingenuity has prepared for the conquest of nature, all the boasted power of reorganizing her works, and better adapting them to the convenience and interest of man, utterly fail here, and he is made painfully conscious of her entire superiority; he finds himself cribbed in, held back, his utmost energy palsied, and learns that his sphere is to assist, to work in unison with, and not to vanquish or reform nature.

There is indeed a space left between the barrier and the sea as a sort of terrace or foothold for man, in order that the passing navigator may not suffer from the interminable desolation of all that range of coast—but this strip is far too contracted, poor, and insignificant, to be cultivated into any marked respectability of opulence, power, or of general Commerce. It is true, that the oldest, some of the most famous, and, except those immediately upon the Atlantic shore, the most populous and considerable of all the South American cities and ports, are here, and that Chili, the most prosperous of the Spanish republics, is an entire country planted upon the Pacific descent of these mountains. It was, indeed, from the Pacific coast that the treasures passing through Spain to enrich Europe, were exported; hither Drake and other naval commanders of

England, were sent when she was at war with Spain, to intercept her richly-freighted galleons; the Dutch East India Company, essayed after Pizarro, a conquest at this point of Spain's treasure-fields; the metallic wealth of South America was in all time past, and to this day of geographical intelligence, is, identified in the world's mind, with the great South Sea; to these cities and ports came formerly all, and comes yet, the far greater bulk of the merchandises sent from Europe, or elsewhere, as payment of the labor of the mines and the profit of the treasure-vender, or to be sold among the interior population; the Commerce of Pacific South America, amid the prevailing lassitude of the region, is still somewhat respectable, seems to grow, and has latterly attracted considerable attention from European nations, and from the United States, as well, in the hope that it may be encouraged to a material expansion—the progressing development of California, indeed, has cast a new interest upon these regions, and has seemed to give promise of elevating them at once in commercial and industrial dignity, to the position they are so well qualified to attain.

In reply to all this, we have but to observe, that the mineral wealth exported from the coast of the countries named, formed the whole basis of the foundation, maintenance and growth, of the cities there established; this wealth was obtained, like the products forming the staple of the present trade, from a few places within the mountains, near by to the cities, or but a little inwardly, and at points where the passage to and from the coast happened not to be entirely impracticable—though it might well have been considered so to any mode of transport, except by the back of the sure-footed mule. The more distant, perhaps richer mines, in fact, the great surface of the treasure-field remained, as to this day it is, untouched, awaiting the energy that shall come from the right quarter, and establish the proper entry and egress. The difficulties of penetrating inwardly, and of living there as men who had enjoyed the comforts of civilization would desire to live, kept the whites upon the coast, giving the cities there an appearance of respectability, and leaving the great interior, as it remains now, almost in the exclusive possession and use of the Indians.

Upon these people they have had to depend for the very riches upon which their own existence depended, and do still, for the light products with which they manage to keep up an outward Commerce. The few mines ever worked have been generally for many years closed, having been perhaps in some cases exhausted, though the principal reason is that the increasing difficulties of the progressive descent into the mountains has rendered further operations impossible, without means wholly out of their command. The gold with which these regions certainly abound was still more out of their reach than the silver. The few products which are now gathered and exported from Payta, Truxillo, and Callao, no more correspond with the wealth of the Peruvian soil and forest, than the former mineral operations gave the measure of its subterranean riches. Of the seashore itself, the products are indeed scanty, and in Bolivia, the Desert of Atacama occupies almost the whole of that region.

The world has certainly profited much by what has been achieved, in the mode indicated, in Peru and Bolivia, and but for the revelation to the world of their natural wealth, through this avenue, the inducement might never have been sufficient to cause their being sought through any other.

But to these countries themselves the good accomplished has been small, indeed, proportioned to the results that another system would have developed.

With all the material for nations of the foremost rank in population, opulence, and comfort, they remain vast wildernesses, with a very few towns in which a white population preponderate, and the balance of their people being made up of lazy, indigent, and degraded Indians, who, if they make out to obtain from the liberal soil food enough for themselves, have from the want of all encouragement, little beyond that quantity either to sell or to give.

Where is the return from the world without for all the wealth these countries have sent to its hands? What compensation is found here for the thousands of millions shipped hence since the eyes of Pizarro were dazzled by the glitter of the great Temple of the Sun and the Incarial Palace? Have not the few millions as yet exported from California built up San Francisco to a superior rank to that which the outgo of centuries has secured to Lima? The truth is, the Commerce of Peru and Bolivia have been carried on at too much expense. The article of export has cost them too much at the place of shipment, and the article of import has cost them too much at the place of consumption. Both, and especially the latter, being large in bulk in proportion to the value for which it was exchanged, and depending for its profit much upon interior distribution, have had tedious, expensive, and dangerous journeys to perform. The enhancement of price necessarily resulting has greatly limited, and in a large degree utterly prevented their use by the Indians where they could be reached, whose consumption in some shape was yet a necessity to the importers.

In the present state of the Indians, who are the workers and producers of these countries, and who as the result of that position, have gone as far toward the state, and acquired as many of the wants of civilized men as possible under the circumstances—in their present state we see what is far more the effect of their necessitated dependence upon a Commerce effected by the Pacific, than as has been the alleged cause, of their oppression by the Spanish population. The latter are, indeed, too much separated from them at present to make their presence very sensible in any way; and beside, by the laws of Peru at least, slavery is not allowed. The misery of the Indian consists in his geographical situation. The Andes have engulfed more of his wealth, of the value of his products, and of his earnings, many times over, than they have yielded up to his labor. It would have been a blessing to him, apart from the lure held out to Spanish cupidity, had those mountains, with all their magazines of treasure, been removed to the bottom of that ocean, and a free coast and clear horizon left.

An illustration of the difficulty, we may say the absolute impossibility of any considerable trade between this coast and the interior, is seen in the fact mentioned by Lieut. Herndon, regarding the towns and villages upon the extreme upper branches of the Amazon, which now receive only a portion of the lighter goods imported by them from Lima, and receive all their heavy goods by the river voyage, all the way from Para, at the mouth of the Amazon, which, in spite of frequent rapids; the necessity of occasional portages in the upper waters, and of the transshipment from

larger to smaller vessels, and then to boats and canoes, is yet the only feasible route by which they can be supplied.

At Chili, there is a small bend of the mountains inwardly, giving a little more coast space than exists in the nations above, and a number of short streams, or rather torrents, rush down to the near ocean. But Chili is still so contracted as almost to escape notice in the map, looking like the turned edge of Buenos Ayres. Its rivers are useless for any purpose of navigation, and not even susceptible of ordinary bridging. The prosperity of Chili is rather comparative, regarding the state of the other republics, than absolute, and is entirely the result of its superior political condition, it being almost entirely free of the tumults which vex, and certainly retard the progress of the others. But Chili can never become a great, a populous, or a wealthy nation. Its position must forever prevent its rise, even to the top level of minor countries.

In regard to California, the influence of her enterprise in the improvement of this coast must soon be exhausted. Like the original discovery and conquest of the Spaniards, its main benefit will be in directing, or rather in re-directing attention to the valuable region which is fringed by this coast, and in pushing forward the proper system for its development.

But the western side of South America has really no more coast advantages than it has benefit of country. Nature never lavishes her favors in vain, and when she has denied the material and the land conveniences of Commerce, she does not trouble herself with forming a succession of fine harbors, accessible bays, and protective promontories and reaches of the land. To such a coast she does not attach that peculiar order of outline, and that general conformation which is essential to a proper modification of the force and currents of the sea, and to the direction and variations of the winds, so requisite to every coast where navigation is to thrive. On the eastern side of South America, you find a series of indentures of varying magnitude, and evidencing the purpose for which nature designed them, and to which use the country is itself adapted. But while the advantages of this coast are not at all remarkable, and infinitely below the admirable arrangement of the Atlantic frontier of the United States, how vastly superior it is to the opposite shore! Of that side a few stiff, straight, and ungraceful lines give the whole contour, unvaried, except in Patagonia, by bays, sounds, archipelagoes, or capes, and scarcely relieved by the presence of solitary islands.

Unrestricted by any of these essential friends of navigation, unchecked even by the floods ejected from river mouths, the tides of the ocean pursue their continuous way along the coast, and the winds blow in a like undisciplined habit. The few tenable harbors are mostly difficult of access, and afford very poor shelter and accommodation. Such is the case, indeed, with the greater portion of the western coast of North America also. Two of the wants named above are especially fatal to Commerce. One is the absence of islands as midway places to stop at for watering and refreshment, as convenient places of transshipment, or for shelter from sudden storms. The thick groups of the Pacific cease at a long distance from this shore, as if to avoid interrupting its cheerless monotony. Every one knows the celebrity of Juan Fernandez as a resort for supplies to vessels in the Pacific; yet if this island were situated in the Atlantic, in a position relative to North America corresponding to its connection with South

America, it would be a place entirely without consequence. The other peculiarly fatal want is that of *river mouths*. Could there be any description more expressive of the total unfitness of a coast of some thousand miles length for the purposes of Commerce than is exhibited in the one fact of its having no river mouth, at least nothing worthy the name, in its whole extent?

Such a coast as we have described is the horror of mariners; they will never approach it, if they can possibly keep off. In the combination of repulsive features, there is certainly no other habitable region of the world so entirely unfriendly to Commerce, and no quarter of the earth, except Africa, with whose disadvantages of ocean front a comparison could be even suggested.

Although the rulers of Mexico, under the old Viceroyalty, were not indifferent to Commerce, and kept up intercourse, by the Pacific, with places so remote as the Philippine Islands, and even with Spain, yet they had but very little trade with the Spanish colonies on the coasts below them. The delays and dangers of the voyage were sufficiently dreaded to turn all their enterprise elsewhere. To reach Lima, about 1,800 miles down the coast, from Acapulco, and return again, occupied absolutely longer time than to make the voyage to Seville, in Spain, and return again, circumnavigating the globe, while the dangers of the former voyage were considered more formidable. Pizarro, in his first attempt at conquest in this region, was wrecked, as were many subsequent adventurers from the isthmus. In his second and final attempt, he arrived at Peru only from being unable to effect a landing at any place previously. The description given by the historian of the expedition, of the dangers and vexations of the navigation along that coast, present no picture of holiday voyaging. With the improved vessels and seamanship of our times, these dangers and inconveniences are certainly greatly lessened, but are yet sufficiently important.

The relation of the Pacific toward the development of western South America, at least of the two countries particularly specified, has, we believe, been in the main degree answered. In being the means of bringing the knowledge of this region to the world, and in opening such portion of its wealth as might better enable the world to appreciate, and afford it strength to avail itself of the latent portion, it has perfected what was here the chief intent of its office. It gives way now to the Atlantic; a new, a reversed direction of export and of receipt is established; and new and inverted results, as regards the subject region, more worthy of its advantages than any it has known before, are about to be introduced.

The grand result, as Lieut. Maury has already suggested, will be to make the Atlantic forever what it is now, and what it was intended from the beginning to be, the great theater of the world's Commerce. With that general weight which universal Europe, the United States, and the countries in course of development in almost the entirety of South America, bring to its support, the cause of the Atlantic, even if Australia were thrown where it does not belong, in the sole interest of the Pacific, becomes invincible.

With such adjuncts as the Mediterranean, Black and Baltic seas, the West Indian Archipelago, the Northern fisheries, including Hudson's and Baffin's bays, the St. Lawrence, with its grand Lake system, the Mississippi and the Amazon, the Orinoco, the La Plata, and we may add, the Niger, with the Gulf of Guinea, awaiting the hand of enterprise, and even the

Caspian and Red seas, of Asia, destined to become its important tributaries, and the latter effecting almost an incorporation with the Atlantic of the great Indian Ocean, with all its rich countries and islands,—with all this tremendous weight in its scale, it must entirely and forever overbalance the Pacific in commercial importance. In its whole extent within the southern hemisphere, the latter has not a single continental commercial coast. Its total resource there is in a series of islands, which in their utmost development can never exceed the maritime dignity of any one leading division, as enumerated above, of the Atlantic. The want of a continent in a whole hemisphere must certainly be fatal. In the northern hemisphere, the Pacific has indeed an excellent coast in Eastern Asia, supported by a remarkable country behind, but has no corresponding advantage in the opposing region—North America. The facilities of the western North American coast for navigation are, in general, very poor, having in many parts little to boast over the South American Pacific shore. California and Oregon are likely, indeed, to become important commercial States; but the inabilities of the rest of the coast will greatly restrict their outward intercourse. As for their Commerce crosswise the ocean, although it will, no doubt, be considerable—and we have ourselves participated somewhat in the glowing visions upon this head—yet all advantage derived by this over the old route to China and the East will, it seems to us, be at least fully counterbalanced by a junction, certain to be effected, of the Mediterranean and Red seas, through the Isthmus of Suez, or, more likely, by way of the River Nile, and by the construction of railroads and other internal improvements within Asia. The great dependence of California and Oregon must be, after all, on the continent to which they belong, and like that of Peru and Bolivia, if in a less degree, on its eastern region. So the Atlantic must remain the great commercial basin, until some violent, or if systematic, long-coming re-arrangement of the physical earth shall oblige it to exchange relations with the Pacific.

To return to the region of the Amazon. Inwardly of Peru, as so imperfectly known to its conquerors, rumor, with her usual veracity, had placed the dominions of El Dorado, or The Gilded. It was a realm full of gorgeous cities, whose streets were paved with gold, and their houses and temples decorated beyond all imagination. In the capital city of Manoa, there were whole streets where no tradesmen's shops but those of gold and silver workers were to be seen; and there lived the king, whose daily raiment was an uncomfortable suit of fresh gold-dust, blown over him through reeds, and attached to his skin by an inner coat of oil. To seize the person and possess themselves of the dominions of a sovereign wearing so ridiculous a shirt and doublet, was long the feverish ambition of the Spaniards, and the eager wish of the envious rivals of Spain. Gonzales Pizarro, hoping to equal the exploits of the adventurer, his brother, crossed the Andes and embarked on the Amazon in the idle search. Others followed him at intervals, and although none of them had ever the satisfaction of interrupting the gilded monarch's toilet, their expeditions were the means of an early exploration of the entire Amazon to the ocean. The great Sir Walter Raleigh was allured, among others, to the search for this fanciful empire, sailing up the Orinoco for that object, after the failure of his efforts at colonization within the United States. How keenly would his really practical, though enthusiastic mind, have appreciated the unlimited advantages for colonization and Commerce

offered by the Amazon, had he beheld that noble river. He had entered a stream about nine hundred miles distant from the mouth of the Amazon, yet had he further pursued the route of that river, it would have brought him, through its inosculation with the Rio Negro, upon the Amazon itself, at about its mid-course, and consequently in the very heart of South America.

The fiction of El Dorado has been long dissipated; but in its stead the region of the central and lower Amazon glows with the reality of a country rich in the vegetable products of nature almost beyond conception; affording the most alluring temptations for settlement, for cultivation, for manufacture, for Commerce, for enterprise of almost any and every description. Ay, and if no gilded king claims the fealty of its population, it is not that gold is not sufficiently plenty to afford the royal habiliment, or that there is no unctuous matter in a country where manteiga, or oil prepared from turtles, is a leading article of export, to serve the purpose of an under-garment. It depends on the taste of the future population of the Amazon valley, whether the romance of The Gilded shall be made a substantiality.

The extreme upper limb of the Amazon, or, as it is called at that point, the *Maranon*, takes its rise in Lake Lauricocha, among the Andes, at about one hundred miles from the Pacific. It runs northwardly about six degrees, and thenceforward, leaving sight of the Pacific, its course is eastwardly, till it reaches the other ocean. The principal branches in Peru are the Huallaga, which is over 700 miles long, and to the head of canoe navigation upon which is 325 miles; the Ucayali, which affords clear navigation for vessels 600 miles, and for canoes 770 miles, while several of its own tributaries, some hundreds more; and the Yavori, forming a part of the boundary with Brazil. These are all on the southern side. On the northern side are a number of rivers of less magnitude, the Napo, of about 400 miles' length, being the principal, all originating in the country of Ecuador.

The chief tributaries of Bolivia are the Beni, the Mamore, and the Guapore, which unite and form the Madeira, the latter being wholly within Brazil, and the largest of all the auxiliaries of the Amazon. The branches of the Madeira penetrate the heart of Bolivia, and are navigable nearly to Chuquisaca, or "the city of silver," to Potosi, and Cochabamba. Their magnitude is even superior to that of the direct confluent of the Amazon in Peru. The Madeira is estimated to drain 44,000 square leagues.

The tributaries whose course is wholly or mostly within Brazil are on the south side: the Jutoy, navigable 450 miles, the Jurua, the Tefe, the Coari, the Purus, the Madeira, the Tapajos, with many large secondaries, and coming directly from the diamond region of Brazil; the Xingu, the Tocantins, affording 1,600 navigable miles. The five last named will all compare with rivers of the first magnitude in any part of the world, and indeed some of their own branches might well take that rank. There are many smaller streams, emptying directly into the Amazon.

On the northern side the branches of the Amazon, for its whole extent, are greatly inferior to those of the South. The chief of these in Brazil are the Putamayo; the Japura, at the intersection of which the Amazon is four or five miles wide; the Rio Negro, the chief river on this side, navigable over 400 miles, and having a branch, the Rio Branco, navigable 300

miles further. There are numerous other streams of 200 to 400 miles in length, not meriting especial notice.

By the continual accession of these vast rivers, the tide of the Amazon is, of course rapidly augmented in volume at every downward step. Even so far up as Peru, it has, according to Herndon, the same thick, turbid, rushing aspect that the Mississippi presents at its highest flood. Yet its current must be, in the main, much less violent than that of the Mississippi, or it would be impossible to use the rude vessels which freely navigate it. The total length of the Amazon is usually estimated at between 4,000 and 4,500 miles. Ships of 500 tons may ascend to the height of 2,500 miles; the longest continuous line of navigation, following the Ucayli, and its branch, the Urabamba, gives a distance of 3,360 miles from the mouth of the Amazon. The aggregate length of navigation, on the main trunk and all its branches, for vessels, Herndon estimates at 6,000 miles, or for small flat-bottomed steamers, 10,000 miles. Of the Amazon itself, the navigation is remarkably clear, there being no shelving rocks or sand-banks, and of course no ice, although there are in some of the branches, especially the Ucayali, many sunken trees. But they are mostly remarkable, like the main river, for the great extent of clear and easy channel. The time occupied by Lieutenant Herndon in making the descent of the Hualaga and Amazon, which of course the object of the expedition required to be done leisurely, was rather less than a year, starting from Lima in May 1851, and arriving at Para in April, 1852. Lieutenant Gibbon, who took the route by the Mamore and Madeira, did not reach Para until after his associate had reached the United States.

One of the most remarkable features of the whole system of South American rivers, resulting from the immense number and the vast sweep of their accessories, and affording advantages not enjoyed by any other section of the earth, is the near approach everywhere seen, and often the intermixture, of their upper waters. Many of them disgorge also by a multiplicity of throats, embracing sometimes regions of hundreds of miles' breadth. Numberless great islands are thus formed along the whole track of the Amazon, and upon the course of most of its branches. An extraordinary facility is also afforded for emerging from any point in the interior of the continent at any point upon the Atlantic, and for moving between internal countries and provinces. The three great rivers of South America, the Orinoco, the Amazon, and the La Plata, are in this way united, although the range of coast embraced between their mouths extends over about forty-five degrees of latitude. The Orinoco unites in New Granada with the Rio Negro, by the Casiquiara, a stream which, small as it appears, like a headbrook of those rivers, has yet a breadth equal to that of the Rhine. Herndon estimates that a flat-bottomed steamer could pass from the Amazon, at the mouth of the Rio Negro, all the way through Venezuela to the Caribbean Sea, in twenty days. Humboldt mentions this channel, and is quite enthusiastic with the prospect it affords to European States desiring to avail themselves of the Commerce thus laid open of a region nine or ten times as large as Spain. The Rio Branco, a branch of the Rio Negro, approaches, at the head of navigation, to within twelve miles of the Essequibo of Guiana, and some little trade is now carried on by this route in European goods.

On the south, the waters of the Madeira approach to within two and a half miles of those of the Paraguay, a branch of the La Plata, and in 1772

a vessel was carried over and launched upon the Paraguay. The Preto, a branch of the Tapajos, approaches so near the Paraguay that all the heavy trade of Cuiba, a flourishing mining town on a navigable branch of the Paraguay, is carried on with Para through the Tapajos and Amazon. From the upper waters of the Tocantins to the capital city, Rio Janeiro, the distance is less than 500 miles. It needs but a few hundred miles of very feasible canal in South America, to add several thousand miles to the river navigation connected with the Amazon.

The population of all the regions described is very small, the immensely larger portion being, in fact, still an unbroken, and in great part, except by savages, an unvisited wilderness. The total population of Peru numbers about two millions, of whom but a very small proportion are whites, the rest being Indians and mestizoes. In a region close by Lima, only one-twelfth are pure whites. The Indians are, in fact, the great laboring and producing population. The most remarkable traits Herndon notices in them are a docile but stupid disposition, and universal laziness. But Tschudi, the Prussian traveler, draws a somewhat different picture. He says they are high-spirited, intensely national in feeling, self-reliant, used to fire-arms and military manœuvres, being admitted into the Peruvian army, and is of opinion that they will some day effect a successful revolt, and expel the Spaniards. Certain it is, Peru was mainly indebted to them for the success of its revolutionary contest, they being deluded into the patriot cause by the promise of a restoration of the government of the Incas, in a descendent of Atahualpa, deposed by Pizarro. Their inertness is sufficiently accounted for from the total absence of any encouragement to action; but that they are not unambitious, is evident from the fact mentioned by Herndon himself, that great numbers of them go down the Amazon, and are found along its whole course in Brazil, where they are the principal boatmen, fishermen, and laborers, the inducement being wages to the value of twelve and a half cents a day, in goods.

The population of Bolivia is of a similar cast, but rather more thrifty, numbering about 1,500,000.

In Brazil, the population along the Amazon and its branches is much scantier still than in Peru and Bolivia. The whole great region watered by them is an unoccupied waste, with the exception of here and there a solitary town, or a very sparsely settled district.

Lima, the capital of Peru, is estimated to contain 70,000 inhabitants, probably an exaggeration, as it had but 53,000 in 1842, and cannot be said to be a growing place. In 1810 it numbered 87,000, but the mines of Peru were better worked then than at present. The Huallaga is the most populous portion of the Amazon region. There are some forty towns along its route, comprising about 60,000 inhabitants, nearly all Indians. The chief of these towns are Huanuco, with 4,000 or 5,000; Tarapota, having, with its two ports, 5,130; Moyabamba, with a very active trading population, contrary to the general character of the Peruvians of these parts, of 7,000; Chasuta; and Laguna, near the mouth of the river, with 1,044 inhabitants. Sarayacu, 275 miles up the Ucayali, with 1,000 converted Indians, is the leading town of that river, and there is no other above it on the main river, though several on its upper branches, which also pass very near to Cuzco, the ancient capital of the Incas, and to Huanacavelica, in the region of the quicksilver mines. There are some twenty towns along the Amazon banks, within Peru, of which Nauta, a fishing

village of about 1,000, opposite the mouth of the Ucayali, and the depot whence all the region above, receiving foreign articles by way of the Amazon, is supplied, is the principal. Loreto, on the frontier, has 250 inhabitants and three mercantile houses, all Portuguese, doing a business of about \$10,000 a year.

On the Amazon, within Brazil, there are some twenty-five towns indicated on the map, the chief of which are Egas, at the mouth of the Teffe, with 800 inhabitants, eight or ten commercial houses, and a few vessels, situated midway between Loreto and Barra; Barra, at the mouth of the Rio Negro, midway between Egas and Para, with 3,614 free and 234 servile inhabitants in 1848; Santarem, at the mouth of the Tapajos, with a population of 4,977 free persons (87 foreigners) and 1,591 slaves; Santa Anna, with 500; and Para, at the river mouth, with 9,284 free persons and 4,726 slaves, total, 14,010. The town population on the Amazon, enumerated by Herndon, amounts to about 70,000, large districts around being included in the estimates of most of the towns. The valley of the Tocantins contains 80,000 inhabitants, and the province 125,000, of whom 25,000 are slaves. The few towns on the Brazilian tributaries are all inconsiderable.

The products of Peru and Bolivia vary according to the altitude, embracing all the riches of the temperate and torrid zones. In the higher parts, Indian corn affords three crops a year, and there are fine crops of wheat, barley, cabbages, onions, potatoes, peaches, &c. The vicuna, alpaca, and other sheep, of finest wool, are here in unlimited abundance, though the business of wool growing, as well as that of the herdsmen, is but poorly attended to. In the warmer and in the torrid region, descending from the mountains, the range of product is infinite, and has nearly the same character throughout Peru, Bolivia, and the Brazilian valley. Plenty seems here to have almost exhausted her various cornucopia. Cotton grows on trees of eight or ten feet high, yielding yearly for three consecutive years, and furnishing a material of most excellent quality and of diverse kinds. Rice, tobacco, coffee, and sugar-cane are everywhere. The latter yields every ten months, and the same stalk will continue to bear for sixty or seventy years, so Lieut. Herndon assures us, improving in quality for a portion of that time; 1,500 lbs. of expressed juice give 253 lbs. of sugar. The coffee is superior to that of Guayaquil or Central America, which are, however, used principally at Lima, the coffee of the country being there so expensive, from the difficulty of transport. While at Tarma, about 150 miles only from Lima, it is worth \$8 per 100 lbs., at Lima it sells for \$20, and as high even as \$25 or \$27. The silk-tree grows in Peru, producing an article like cotton to the eye, and silk to the touch. Bananas are the most common fruit, and of their varieties the amount is enormous. These, with the yucca or cassava-root, are used as substitutes for bread, and tend thus to encourage indolence. The tamarind, cocoa, oranges, lemons, citrons, pomegranates, figs, pine-apples, melons, &c., everywhere abound. Indigo and plentiful other dyes are found, one of which, a shrub, not yet brought into Commerce, produces a brilliant scarlet, quite equal to cochineal. Of gums, drugs, and medicinal herbs there is no limit; sarsaparilla abounds on nearly all the rivers, the greatest amount being at present gathered upon the Ucayali; India-rubber seems nearly as plentiful; Peruvian bark, rocou, vanilla, ipecacuanha, copal, and many others, are in the list. Among the products that appear peculiar to Brazil, are

the Brazilian nuts and nutmegs, black-pepper, ginger, arrow-root, tapioca, farina, (used as a substitute for bread,) anato, sapucacia, tonka beans. Also the cow-tree, which yields a substance very much resembling the milk of a cow, and affording a most refreshing beverage. Vast herds of cattle browse on the endless savannahs, the woods swarm with game, and the rivers with fish and turtle, the oil of the latter being a leading article of trade on the lower Amazon. In regard to woods, there are, in the province of Amazonas alone, twenty-three well-known varieties of palms, twenty-two kinds of timber fit for ship-building, thirty-three for houses and boats, twelve for cabinet work, having the finest grain and susceptible of the highest polish.

The mineral kingdom corresponds with the wealth of the vegetable. "On the top and east slope of the Andes lie hidden unimaginable quantities of silver, iron, coal, copper, and quicksilver, awaiting but the application of science and the hand of industry for their development." Gold undoubtedly exists at the head of nearly all the streams rising in Bolivia and Peru. Gold washings have been opened at the province of Cambaya, in Peru, within a few years, and the Peruvian government has invited emigration thither, under guaranty of all necessary immunities and privileges. An intelligent resident of Peru deems the whole of the great region embraced within the branches of the Madeira, (which is a great part of all Bolivia,) and up even to the Ucayali, to be a continuous field of gold and silver, and containing probably diamonds and other precious stones. Most of the Brazilian rivers rise in a diamond country, the bulk of which is comparatively untouched, and gold is as plentiful there, besides large mines of nitre and iron, although no silver has been yet found.

Of the exuberance of the animal creation below the Andes, Herndon enumerates the wild cow, fish-ox, black tiger, electric eel, boa-constrictor, anaconda, coral snake, alligator, endless varieties of monkeys, birds of most brilliant plumage, and insects of strange forms and the gayest colors.

The climate is throughout salubrious and what would hardly be expected from the nature of the productions, generally temperate. Diseases seem to be few; some fevers prevail, but we see nothing mentioned of that pest of our own western regions, the ague.

Castlenau declares that this is the finest country in the world, and our observing lieutenant is also of opinion, that "no country in the world is so favorably situated, and that if trade there is once awakened, the power and wealth and grandeur of ancient Babylon and modern London must yield to that of the depots of this trade, that shall be established at the mouths of the Orinoco, the Amazon, and the La Plata."

The trade of these regions is, like their population, contracted beneath all proportion with their abilities. The few foreign goods carried into the interior of Peru, of which the lighter kinds come by way of Lima and the coast, and the heavier from Para on the Atlantic, are very high on arriving there. At San Mateo, only ninety miles from Lima, foreign goods, cottons, silks, linens, &c., are one hundred per cent higher than in Lima, and further back the price trebles and quadruples. Money is there almost unknown. The encouragement is so small, that the people are inattentive to cultivation, and have but a few ordinary manufactures. On the Hualaga, Herndon says his party would have starved had it consisted of one hundred men. Salt fish, taken mostly at the Ucayali, is an article of trade all up and down the Huallaga and Amazon.

The exports from Para, in 1846, amounted to \$560,302; in 1847 to \$710,879; in 1848 to \$589,286. The imports, in 1846, were \$622,052; in 1847, \$646,946; in 1848, \$564,881. Of the exports in 1846, \$182,742 were to the United States, \$117,813 to England, \$107,813 to France, and \$123,156 to Portugal. Of the imports in the same year, \$235,105 were from the U. States, \$160,050 from Great Britain, \$52,924 from France, and \$87,608 from Portugal.

In 1851 the Commerce of Para was as follows:—

	No. of vessels entered and cleared.	Tons.	Imports.	Exports.
American.....	30	4,574	\$425,484	\$746,210
British	14	2,732	275,000	335,000
French	10	536	122,830	188,699
Portuguese.....	19	3,666	231,457	215,142
Hamburg	2	510	27,500	181,000
Belgian.....	2	320	5,250	16,250
Danish	2	480	4,750	34,000
Swedish	2	420	.....	28,500
Total.....	81	14,238	\$1,092,271	\$1,424,801

Herndon suggests the expediency of American steamers being placed upon these rivers, at once, to conduct the trade now carried on in flat, slow, inefficient vessels, and to carry up American goods. There can be no question as to their full success. The people all along the river are ambitious of an enlarged trade, and desire greatly to see improvements which they are unable to effect, introduced by others. Except for some jealousy of foreigners among the Brazilian Indians, they are all eager to see the entire river made free to all nations, and a tide of emigration set thither. They look for no decided advance until that freedom of navigation is established. The governments also of Peru and Bolivia are fully awake upon this subject. Every attention was shown to the United States expeditionists. In Bolivia—which country has offered twenty thousand square miles of the richest land to encourage the introduction from any source, of steam upon her waters—Lieutenant Gibbon was hailed as a benefactor. The present minister of Peru, it is said, is a man fully up with the spirit of the age, one who has seen the world abroad, and knows what is requisite to that country. It is to be presumed, though not able for any great effort, the government of Peru is something more stable and efficient than it was some years ago, when, as Tschudi mentions, there were six presidents, all attempting simultaneous exercise of authority, levying taxes and shooting each other's adherents. New Granada and Venezuela would gladly second the designs of Peru and Bolivia, as themselves intimately concerned in the free navigation of the Amazon.

Brazil, alone, of the five powers, lying upon the Amazon and its great rivers, is disinclined to their proposed freedom, and her jurisdiction extends over about three-fourths of the whole length of the Amazon, and over, it might be said, almost the whole of its tributary waters. Yet there is a very large jurisdiction still remaining with the other powers, the rights of which are to be maintained, and these rights do not permit Brazil to shut up the ports of any of these rivers within her own territory. The attempt comes at too late a day, though it might have been admitted at the time when Spain undertook the monopoly of the Atlantic ocean. No such claim is allowed even in regard to the shorter rivers of Europe;

and our own country was long ago nearly involved in a war from a similar effort with regard to the Mississippi. But Brazil has condemned her own present policy by the war which she made against the tyrant Rosas, to secure the freedom of the La Plata, and happily effected.

At the time the United States government resolved upon the exploration of the Amazon, that of Brazil undertook to thwart its obvious design, and hurriedly effected a treaty with Peru, in 1851, professing to have in view the navigation of the Amazon and its confluent by steam, and the mutual improvement of their river territories. The duties on products passing up and down were assimilated, and each power agreed to assist with \$20,000 yearly, for five years, the first company formed for steam navigation, belonging exclusively to the respective States, other coterminous States being at liberty to join on the same conditions. Consummate art was displayed in the imposition of this purely Brazilian scheme upon Peru.

Under this treaty, Brazil, in 1852, conveyed to Ireno Evangelistu de Souza, one of her own citizens, the exclusive privilege of navigating the Amazon for thirty years, guarantying to him the \$20,000 yearly of Peru, and granting him, from its own funds, the sum of \$80,000 yearly, in addition to its stipulated amount of \$20,000. He is to keep six steamers on the Amazon, and to establish sixty colonies, of Indians, or of others designated by the crown. These steamers are to afford Peru 250 miles of navigation, and Brazil above 1,500.

Tirado, the minister of Peru, has objected to this arrangement, as regards Peru, and the Council of State sustain his demurrer. Peru has opened her part of the river, under the treaty, to which the United States, under the provision for equality with the "most favored nations," in our treaty with that country, effected in July, 1851, three months before that of Peru with Brazil, are admitted, as well as the latter. Nauta and Loreto, the two Peruvian ports of the Amazon, are declared free, there being no import or export duties on foreign trade. The Council of State have appropriated \$200,000 to establish steam navigation on the Huallaga, Ucayali, &c., and to effect their settlement. Two small steamers, to be built in the United States, for \$75,000, were to be delivered at Loreto on the 1st of January, 1854. To encourage emigrants, Peru gives free grants of land, exempts them from any taxes or contributions for twenty years, assuming the payment of even their parochial dues, and allows them to make their own local laws. She also defrays the expense of passage within her territory of the emigrants to the place of settlement, and furnishes implements of husbandry, and seeds, gratuitously. Roads are to be opened, and other facilities afforded.

In her attempt to administer to Bolivia the same pill prepared for Peru, Brazil made a failure. That government rejected her scheme, plainly perceiving its animus. In January, 1853, Bolivia declared all her ports communicating with the Atlantic, by either the Amazon or La Plata, free to the Commerce of the world, and the president of that republic declares it is to the Norte Americanos they look for the emigration, wealth, and energy necessary to complete the great objects they have in view regarding their own internal improvement.

The treaty of the United States with Peru alluded to, gives us, beside equal privileges with the most favored of other nations, (by which whatever Brazil gets from her, she obtains for us the same or an equivalent,) the same privileges of coast and inland trade, and the right to establish

shops, depots, &c., as are possessed by her own citizens. There are already Americans established, at different trades, in various parts of the country.

If the Amazonian waters are to wait until Brazil shall be able to enliven them with an all-invading presence of Steam—if the development of the great interior South America is to be the fruit of her unassisted energy, why then solitude here, and indigence there, have a long tenure of the fairest region of the earth. The echoes of many of those silent old rivers will not be astonished with the steam-shriek within this century, and perhaps not in the next. The country will be known only as it has been, as the home of anacondas, ugly chattering monkeys, and insidious vampires. Rip Van Winkle might sleep soundly for a hundred years on the banks of the Tapajos or Xingu, without fear of change. Positively, the world will not permit the royal scion of Braganza and his august court to wrap up the great Amazon in their diminutive napkin. In that great bank, nature has invested capital for the world's use, and the world will not fail to draw the interest, though Brazil shall attempt to stop the payment. A spirit is abroad, and one that is stronger and wiser than the selfish policy and artful diplomacy of Don Pedro the Second.

The first part of the work, descriptive of Lieut. Herndon's share in the exploration, the publication of which preceded that of his coadjutor, whose researches in the Madeira Valley were not finished at the time of Lieut. Herndon's return to the United States, is, as was to have been expected where the adventure in such a field was intrusted to one so competent, and as these previous pages evidence, a volume of rare interest. The intelligent explorer, without being led by an ardent temperament, and a strong enthusiasm in favor of his undertaking, into any extravagant views, has done full justice to the subject. The character, the resources, the position, the destiny of the Amazon are depicted in a style so vivid as cannot fail to arrest the attention of the reader, and to excite in him some portion of the spirit felt by the author. No higher praise can be awarded the book, than to say that it is worthy of association with the volumes of exploration in other directions made by the gallant Lieutenant's fellow-officers in the Navy, Wilkes and Lynch, and that it reflects a credit not inferior to that which they have conferred upon that important branch of the service.

Art. III.—THE ELEMENTS OF BUSINESS SUCCESS.*

BUSINESS, as that term will be used in this article, is the lawful aim and pursuit of rational men. It is the great purpose of life. The race were made for employment. Adam was created and placed in the Garden of Eden for business purposes; it would have been better for the race if he had attended closely to the occupation for which he was made. The Saviour of men identified himself with the useful labor of life; his public mission did not commence till he was thirty years of age. That long period might have been passed in indolence in the wilderness of Judea or on the banks of the blue Galilee, which washed the walls of the city "where he was brought up," or in the caves that surrounded his mountain home; he could have dreamed away a listless manhood, without toil or want, and

* A lecture delivered before Comer's Commercial Institute, Boston, by Matthew Hale Smith, a member of the Suffolk Bar. Now first published in the *Merchants' Magazine*.

found that repose said by many to be so favorable, if not indispensable, to an elevated piety;—but not so did he. He became one of us; he knew the stern trials of life. He earned his bread in an arduous calling; he knew what toil was; beneath the hot rays of the sun of Palestine he met the labor of life. He was known no less as the “carpenter” than as the “carpenter’s son;” he dignified labor, and he placed the curse on indolence. Physical strength and beauty attend physical toil; moral excellence comes forth from constant and faithful attention to the service from whence come out the issues of life.

Some men sneer at employment and bind indolence on their brow as an ornament. Such are effeminate and lack-brained, cultivating their beards more than their brains, if they possess that important function—adorning their person rather than their mind—weighing down their bodies with brass jewelry and miniature ox-chains, while their physical and mental inferiority are known to all men. Let us consider.

1. THE SELECTION OF BUSINESS.

All departments of life are open to young men in this favored land. But all are not fitted alike for each post and profession. Men have physical, moral, and mental gifts that peculiarly fit them for some pursuits, and peculiarly unfit them for others; and the taste for and attraction of certain pursuits should incline each young man to look well at his chosen occupation, and when once chosen, to follow it to the end; and his earlier training should have special reference to his position and occupation. Before his choice is made, he should weigh well all the obstacles in his path, and his fitness to remove or overcome them. Law, medicine, divinity, mechanics, present an inviting field. One may shine in the law who would be a drone or a driveler in the pulpit; and many a man has attempted to mend a broken limb with not talent enough to repair the leg of a stool. Young men have marked characteristics and talent; these are as well known as their faces—better known often to others than to themselves. One is quick at figures; another would make a capital salesman. One has a legal mind and would revel in the intricacies of the law; another can only generalize, and is happy only in active employment. Some have great dispatch; others are cautious, careful, and trustworthy in minute matters. The bent of each mind, the taste and the talent must all be consulted in the selection of business. All business has a settled price and market value. Success is to be won by obeying the laws of the calling selected; and he who would be eminent in any pursuit, must pay the market price for success. Two kinds of business may be found, to one of which the aspirant for employment must address himself. The one is bad and the other good; the one can be found in a day; the other must be sought for diligently, and often with “long patience.” The one pays at once; for the other money must often be paid.

The central point of attraction to a young man is a large city. Here is a wide field for activity and energy. Upon his arrival in a city, a stranger perhaps, and with the change of his last dollar ringing in his pocket, he seeks employment. He wants wages. He has his fortune to make and must be about it. The banks are full; but bar-rooms and dram-shops are open. No merchant of eminence that he can find is in want of the services of a stranger fresh from the country; but he can attend in a bowling saloon, or find employment in a billiard room, or some lower place. He learns that the banks and merchants pay a small salary to a youth, if they

do not even demand a bonus of him for the privilege of receiving his services. He is a moral young man; and the better his moral character, the higher the wages in business not exactly reputable. Men in such business leave no objection to the services of an upright young man. Fully resolved to have his doubtful employment as soon as a favorable opening shall present itself, he grasps at the first offer. This step taints his character for life, and binds him to business that will keep him from high attainments and positions. Lot was not exactly pleased with the people of Sodom; but the Vale of Admah had peculiar business attractions. He removed thither; and the end is well known to all students of the Bible.

2. BUSINESS PRINCIPLE.

Principle and integrity are good capital to begin and continue life with. In many large houses men enter as partners who are destitute of wealth and can only put into the firm their business reputation. Each man has a business repute, and his character is judged by little things. As Dr. Johnson said when he condemned a book of which he had read only a few pages, "One need not eat a whole joint of meat to know that it is tainted;" so you need not be very familiar with a man of business to know what his principles of trade are. It was said that Cuvier, the naturalist, could take the bone of any animal, no matter how insignificant that bone might be, and by its aid construct the entire animal, and tell you its character and the clime it called its home. So out of small matters, words spoken, principles avowed, acts done, or deeds omitted, you build up the character of a man and make up your opinion about him. You say of some one, "I like his appearance; I will employ him; he suits me." You do not analyze your feelings; but your mind is made up. Of another you may say, "I do not like that young man." Perhaps you could not satisfy yourself why, if a reason was called for. You have taken certain acts of the young man, trivial though they be, and made up your opinion. A friend of mine said to me one day, "I shall dismiss my clerk." I knew the young man; he was smart and intelligent, well-disposed and genteel. I asked the reason. "I am not quite satisfied," was the reply; "he dresses too well; he has too much jewelry; his room is too well furnished; he rides too much. I know his means; the salary I pay him will not admit of such expenses." The young man thought he was producing a sensation. He was; but not of the character he supposed. It is said that men cannot do business on strict principles of integrity and honor. But it is certain that they can be conducted on no other. If it be true, or if the statement at all approximates to the truth, that in Boston for the past twenty-five years ninety-nine out of each hundred of all our merchants have been unsuccessful, how much worse would it have been if all had conducted their business on high moral principles? The men who succeed in life and become eminent are few. Their characters are well known—almost all of them have been men of high moral principle.

It will not be pretended that Joseph in Egypt was restrained and impeded in his exalted career by his stern and uncompromising principles. It was Daniel's moral character that raised him from a slave to the premiership of Babylon; and he maintained his noble position because he conducted the affairs of the realm with such integrity and honesty that his keen-eyed enemies could find no fault with him at all in the "king's matters." And Cornelius, who had such proof of God's favor, was a most loyal

captain in the Roman army. Permanent success is found only in connection with principle and integrity in business.

The man who purchases cutlery from the renowned manufactory of Rogers is anxious only to know that the stamp on the blade is genuine. Years ago that house resolved not to send a poor article into the market. Its work is good; it cannot afford to sell poor articles. The fame of Day and Martin's blacking is wide as civilization. No man "tries it;" he asks only if it be the genuine article; and a man that can secure a store in the famed "97 High Holborn," has his fortune secured. It is said that the stores in that building will command almost any rent. If the United States need an instrument for the Corps of Engineers, or a glass for the Observatory at Washington, an order is sent to England for one instrument, and to France for another, and to Germany for a third—the reputation of the house that manufactures is a guaranty for the excellence of the article. In the small town of Douglas, in the Commonwealth of Massachusetts, there is a manufactory of axes. Immense numbers are shipped for all parts of the earth. No man but the maker sees them till taken from the boxes, put on the helves, and swung in the forests at the far West, on our Pacific possessions, or in Africa, or in the islands of the sea; and if each axe was tried in the manufactory at Douglas before the purchase, no more confidence would be put in the excellence of the article than the name of the maker inspires. The invariable perfection of this article is the business capital of the maker.

We have men among us—now ranking among the merchant princes of Boston—who began life poor. Some of them were grooms, some waited and tended in families, some dug gravel, others wheeled coals; but all that they did was well done. When the late William Gray was taunted by an envious man, who said that he could remember when the same Mr. Gray was only a drummer, his reply gave the key-note to his success—"And did I not drum *well*?"

The late Jonas Chickering, whose memory is yet green among us, and who is a noble specimen of one who has been the architect of his own fortune, owes that fortune quite as much to the substantial and invariable excellency of his workmanship, as to his indomitable industry and perseverance. And it was no idle boast of a man in the British Parliament, who was reminded by a noble that his father was a butcher; that he had arisen to his position by his own labor; and all admitted the retort to be just, when he added, "If the father of the noble lord had been a butcher, his son this day would be slaughtering calves." Honesty is the best policy, and high moral principle can alone lead to permanent success. We admit that a man must have other qualities with these; but without principle, all will not avail.

3. BUSINESS ENDURANCE.

Men of genius without endurance cannot succeed. Men who start in one kind of business may find it impossible to continue therein all their days. Ill health may demand a change. New and wider fields of enterprise and success may be opened to them; new elements of character may be developed. Men may have a positive distaste for some pursuits, and success may demand a change. None of these cases fall within the general rule. Men may have rare talents, but if they "are everything by turns, and nothing long," they must not expect to prosper. No form of business is free from vexations; each man knows the spot on which his

own harness chafes; but he cannot know how much his neighbor suffers. It is said that a Yankee can splice a rope in many different ways; an English sailor knows but one method, but in that method he does his work well. Life is not long enough to allow any one to be really master of but one pursuit.

The history of eminent men in all professions and callings proves this. The great statesman, Daniel Webster, was a great lawyer. His boyhood was marked only by uncommon industry; as a speaker he did not excel in early life. With great deliberation he selected the law as his profession, nor could he be deterred from his chosen pursuit. While a poor student, not the tempting prize of fifteen hundred dollars a year as clerk of the courts, then a large sum, gained with great difficulty for him by the zeal and influence of his father, nor could all the persuasions of the father, turn him from the mark he had set before him; and his great eulogist, the Attorney-General of Massachusetts, is another marked illustration of resolute endurance and indomitable industry—life-long—centering in one profession, making him one of the chief ornaments of that profession, if not its head, in the United States.

Our late distinguished ambassador at the Court of St. James, Hon. Abbot Lawrence, whose wealth is poured out for all benevolent purposes in donations large as the sea, can recall the time when he had his profession to select, and the first dollar of his splendid fortune to earn. He chose deliberately a calling; he pursued that occupation with integrity and endurance, through dark days and trying seasons, and the result is before the world. This case affords an apt illustration of the proverb of the wise man, that a man "diligent in his business shall stand before kings, and not before mean men."

The late John Jacob Astor, as he left his native Germany, paused beneath a linden-tree not far from the line that separated his native land from another, and made three resolutions, which he intended should guide him through life: "1. He would be honest. 2. He would be industrious. 3. He would never gamble." He was on foot; his wealth was in the small bundle that swung from the stick laid on his shoulder. The world was before him. He was able to make such resolutions; he was able to carry them out. His success is the best comment on his endurance. Stephen Gerard, at the age of 40 years, was in quite moderate circumstances, being the captain of a small coasting vessel on the Delaware, and part owner of the same. No trait in his character was more marked than his endurance, and this element gave him a fortune.

All men who have succeeded well in life have been men of high resolve and endurance. The famed William Pitt was in early life fond of gaming, the passion increased with his years; he knew that he must at once master the passion, or the passion would master him. He made a firm resolve that he would never again play at a game of hazard. He could make such a resolution; he could keep it. His subsequent eminence was the fruit of that power. William Wilberforce, in his earlier days, like most young men of his rank and age, loved the excitement of places of hazard. He was one night persuaded to keep the faro-bank. He saw the ruin of the vice of gaming as he never saw it before; he was appalled with what he beheld. Sitting amid gaming, ruin, and despair, he took the resolution that he would never again enter a gaming house. He changed his company with the change of his conduct, and subsequently became one of the most distinguished Englishmen of his age.

Dr. Samuel Johnson was once requested to drink wine with a friend; the Doctor proposed tea. "But drink a *little* wine," said his host. "I cannot," was the reply. "I know abstinence—I know excess; but I know no medium. Long since, I resolved, as I could not drink a *little* wine, I would drink none at all." A man who could thus support his resolution by action was a man of endurance, and that element is as well displayed in this incident as in the compilation of his great work. When Richard Brinsley Sheridan made his first speech in Parliament, it was regarded on all hands as a most mortifying failure. His friends urged him to abandon a Parliamentary career, and enter upon some field better suited to his ability. "No," said Sheridan—"no, it is in me, and it *shall come out!*" And it did, and he became one of the most splendid debaters in England. Loyola, the founder of the order of Jesuits, the courtier, the man of gallantry and dissipation, obtained such mastery over himself by labor and endurance, that, to illustrate the fact, he stood several hours, apparently unmoved, in a pond of ice and muddy water, up to his chin. Perhaps no other nation in Europe, at the time, could have won the battle of Waterloo except the British, because no other could have brought to that conflict that amount of endurance needed to win. For many hours that army stood manfully before the murderous fire of the French; column after column fell, while not a gun was discharged on their part. One sullen word of command ran along the line as thousands fell—"File up! file up!" "Not yet—not yet!" was the Iron Duke's reply to earnest requests made to charge and fight the foe. At length the time of action came. The charge was given, and victory perched upon the standard of England.

4. BUSINESS THE CHARM OF LIFE.

No passion is more ruinous than the "haste to be rich." It is condemned alike by revelation, reason, and the sound practical experience of life. It leads men into unsafe and ruinous speculation; it seduces them from fast-anchored property to the mirage that glitters. It allows the hands of industry and employment to stand still on the dial-plate of life, while men grasp at shadows. It is this passion separates the business past from the business present by so wide a gulf.

The modern merchant, with small capital, and that, perhaps, not his own—with his granite store, his mahogany desk, his country-seat, fast horse, and rash speculations, scorns the example of his sire, who, at his desk of pine and green baize, sat each day sixteen mortal hours at his business, doing his own errands, and being his own clerk. With so wide a contrast, it is not strange that many begin business where their sires left off, and leave off where the sires began.

It is employment we all need—employment till life shall end. The plowboy is happy in his furrow, and the hours pass swifter than the weaver's shuttle, while the matron and maid sing amid their daily duties. No success and no wealth can make that man happy who has nothing to do. We have seen a boy grow up to the full stature of manhood, take his stand by the side and as one of our richest men; his elegant city residence and suburban abode became the envy of men—his horses and his equipage the most perfect in our midst. We have seen him, with his fortune made, bid adieu to the toils and vexations of business, take the balance of his life to himself, and resolve to be happy at his ease. We have watched him in his elegant retreat, possessed of "more than heart can wish." After a few years we have sought and found him not, learning, with sorrow, that, not

able to endure a life of leisure and ease, he had gone uncalled for into the presence of his Maker.

An eminent merchant of Boston, when asked by some one why he did not quit his business, as his fortune was ample, replied, "that his repose would be his death." We know well that the spring of enjoyment would dry up, and soon, with inactivity, life would become a burden. The celebrated commentator, Dr. McKnight, completed his work on the epistles when not far from sixty years of age. Nearly thirty years of his life had been occupied with that great labor. His employment had been regular and cheerful, and the purple current of life had flowed noiselessly and joyously along. He refused to go on with the Gospel, as he had earned his respite, he said. His faculties were in their usual vigor. In leaving his regular employment, his mind soon lost its tone, and he sunk almost into a driveling idiocy. Had he continued his employment, a mellow and a green old age would have been his portion, and his sun gone down at last in unclouded splendor.

It is employment that has made us what we are. Our sky is inclement, our soil hard and tough; but the sun shines on no land where so many people enjoy so much substantial good. The alchemy of labor can turn our ice into gold and our rocks into bread. Employment given to the millions of Europe now indolent and hungry, would quench many a volcano and put down misrule and insubordination. It was Lord Bacon, I think, who said that "all rebellions commence in the stomach." Let a nation be both destitute and idle, and it would not be strange, if they should become turbulent also. Sodom had three great sins; one of them was "an abundance of idleness." Palestine, in the time of Solomon, contained a nation of men who were daily employed, and a race of women who could both "clothe their households with scarlet," and "consider a field and buy it." These were the days of Israel's prosperity. Gold and silver were abundant; the mountains were terraced up to their summits with fruit, and the valleys were hot-beds of vegetation. It is now a land of indolence. The same sky is above the people—they tread the same soil beneath their feet; but all is desolate, because all are indolent. The owl and the cormorant sit now in the palaces of David and Solomon. When men were proud to say, "I am a Roman citizen!" Rome was governed by emperors whom she called from the plow. They led her invincible legions to conquest. Now indolence broods over the whole land of the Cæsars like the miasma over the pleasant home of man—desolation and ruin are seen on all sides.

We should be glad to address you on many other topics which will, and must, enter into your business prosperity. That courtesy to all, based on principle, that costs so little and yields so large a return; that courage and business faith that will not only make you enterprising and far-seeing, but enable you to be singular and odd even when duty calls or danger is to be avoided; that regard for your word that will command credit; that high moral character which will make your word as good as your bond; that integrity that will induce you to meet with amputation sooner than repudiation, and cause you to select some other road to fortune than that of defrauding your creditors; that principle without which no smartness, no talent will avail; but these, and all other things by them suggested, must be left to your own thoughts and your own application, and so also must that certain success that will attend the application to the business of life.

ART. IV.—A UNIFORM SYSTEM OF COINAGE FOR COMMERCIAL NATIONS.

DR. J. H. GIBBON, of the United States' Branch Mint, North Carolina, has forwarded us a copy of his report on the utility of a uniform system in measures, weights, fineness, and decimal accounts for the standard coinage of commercial nations. This report was made in compliance with a resolution passed by the Commercial Convention assembled in Charleston, South Carolina, on the 10th of April, 1854.

The commercial importance of a uniform system for the coinage of commercial nations to facilitate mutual exchanges, and the interesting historical and other data furnished by Dr. Gibbon, renders any apology for publishing it entire in the pages of the *Merchants' Magazine* unnecessary.

The subject has already been introduced to Congress in a letter to the Hon. HANNIBAL HAMLIN, Chairman of the Committee on Commerce, &c., in the United States' Senate, by ALEXANDER VATTÉMARE, accompanied by a historical, popular description of the metrical-decimal system, by WM. W. MANN, Esq., of Georgia, and reports by Mr. SIBBERMANN, Superintendent of the *Conservatoire des Arts et Metiers*, and by Mr. DURAND, Commissary General of Coins and Medals.*

To render the subject of uniformity in coinage generally intelligible, slight references to history appear indispensable.

After the settlement of North America, from Europe, the earliest metallic currency of the colonies consisted of coins of the mother country. In 1652 Massachusetts provided for the coinage of shillings, six-pences, and three-pences. The example was followed by Maryland, where silver and copper coins were issued in 1662.

In 1694 the Carolinas struck a half-penny; and two-penny and penny pieces in 1723 and 1733. In 1773 Virginia also introduced a half-penny coinage. Trade was carried on principally by barter.

As Commerce and population increased, foreign gold coins were introduced—the English guinea, the Portuguese joannes, the Spanish doubloon, the French pistole, with Spanish dollars and their proportions, British silver coins, and, finally, French crowns.

After our Revolutionary struggle, various emissions of silver and copper were made by States—Massachusetts, New Jersey, Connecticut, and Vermont issued cents of varied weights. In 1783, J. Chalmers, at Annapolis, in Maryland, fabricated the smaller silver coins, carelessly proportioned. In 1830, Templeton Reed, in Georgia, and Christopher Bechtler, in North Carolina, coined gold pieces, literally at the pit's mouth, from veins and deposits worked in those States.

The pound of the colonies was originally the same as the pound sterling of Great Britain, but became greatly altered in consequence of excessive issues of paper money, in very unequal proportions, by different colonial authorities.

In 1782 the Congress of the United States directed a report upon the subject of coins and currency, which was made by the financier, Gouverneur Morris. He labored to reconcile the moneys of the different States upon the pound basis, and expressed an opinion that it was "very desirable money should be increased in a decimal ratio, because, by that means, all calculations of interest, exchange, insurance, and the like, are rendered much more simple and accurate; and of course more within the power of the great mass of the people."

In 1784, Mr. Jefferson, on behalf of a committee, also advocated the decimal system, stating: "The most easy ratio of multiplication and division is that by

* We are indebted to M. Vattémare for a copy of his letter and the other documents referred to above, in English and French, and shall probably notice them in a future number of the *Merchants' Magazine*.

ten. Every one remembers the facility of decimal arithmetic at school, and the bulk of mankind are school-boys through life."

Mr. Jefferson differed from Mr. Morris upon the unit of value, and proposed the Spanish dollar as the basis, which was adopted in 1785.

The Confederation of the States had already provided that "Congress should have the sole and exclusive right and power of regulating the alloy and value of coins." The Constitution of 1789 arrested local issues, and vested the right of coinage solely in the general government.

In 1790 Mr. Jefferson, then Secretary of State, made "A Report on Moneys, Weights, and Measures."

In 1792 a code of laws and regulations was enacted for a mint, in Philadelphia, with denominations for coinage in gold, silver, and copper. The standard of fineness for gold being fixed at .917, that for silver at .882 milliemmes, or thousandths, according to the French mode of computation, now employed in the mints of the United States, instead of the ancient expression by carats and eighths.

In 1793 and 1796 slight modifications were made in the weight of copper pieces, "on account of the increased price of copper in the commercial market."

In 1819 Mr. Lowndes proposed to raise the value of gold against silver. To provide a remedy for their recognized disproportion, engaged the attention of eminent statesmen for fifteen years. The fineness of the gold coins was ultimately reduced to .899 and a fraction.

In 1834 an act was passed changing the weight and fineness of the gold coins, and also the relative value of gold to silver. The first basis, 15 to 1, being found too low, at the market value, which, although constantly fluctuating, was near 16 to 1, the original Spanish ratio.

"The effect of our previous legal proportions was to reduce the coinage of gold, and to retain its circulation. Being always at a premium, the coin was immediately exported to Europe in the course of trade, and there quickly wrought into other shapes."

But the disadvantages of a complex standard of fineness in gold and in silver, determined the director of the mint to suggest the more simple and modern standard of France, established upon a distinct basis. This was acted upon by Congress in 1837, the standard being fixed at .900, or 90 per cent of fine metal, for gold and silver coins, in the 1,000 parts.

In the year 1835 branches of the mint were directed to be established in Louisiana, Georgia, and North Carolina, all the coins being uniform. A mint in California and an assay office in New York have since been decided upon.

In Great Britain, the basis of the value of money is the pound sterling of twenty shillings. This pound of standard silver was represented by the guinea, a gold coin, ordained in 1675, during the reign of Charles the Second.

From a depreciation of silver coins in England, Sir Isaac Newton, Master of the Mint, during George the First, recommended, in 1717, that the guinea should be rated at twenty-one shillings.

In 1816 the sovereign, a new gold coin of twenty shillings, slightly differing in weight from the guinea, was substituted, and an alteration again effected in the British silver coinage, silver being made a legal tender only to the amount of forty shillings at a time.

In the history of the British mint, the coinage of the year 1816 "will be remarkable," writes Dr. Kelley, "not only on account of important alterations then made in the monetary system, but also for the great accommodation afforded to the public." At the present moment still greater conveniences are desired in that country.

A recent report of a select committee to the House of Commons of Great Britain, founded upon careful inquiry among intelligent and practical men, encourages a modification of measures and weights in all money accounts.

The decimal system of computation being acknowledged so simple and easily

* Manual of Coins and Bullion, by Eckfeldt and Dubois.

understood at home and abroad, compared with the mode at present employed, that "he who runs may count, his fingers being a text-book!"

A governor of the Bank of England, Mr. Hankey, examined in reference to the sale or purchase of bullion, declared, "a more complicated system than that lately in use, and one more fraught with incidents to error, would hardly be conceived."

Three elements enter into the consideration: 1st. The *weight* calculated in troy pounds, ounces, pennyweights, and grains. 2d. The *quality* of the gold, subdivided by 24 carats and their eighths. 3d. The element of *value* estimated in pounds, shillings, pence, and farthings.

Prof. George Biddell, acting Astronomer Royal, remarked—"That if gold was adopted as the standard of value by other countries, it would be possible to have such international arrangements as would make the coin of different countries interchangeable at fixed rates."

Sir John Herschel, Master of the Mint, "recommended a decimal coinage, accompanied by a decimal system of weights and measures."

The *only* point on which witnesses were divided in opinion, before the select committee, was the precise basis which should be adopted.

Under an impression that "the laws of physical nature operate uniformly, the unit of measure in England was fixed by ascertaining the length of a pendulum, vibrating seconds, in the latitude of London, at the level of the sea."*

To this length a yard measure was referred, and subdivided into three feet of twelve inches each.

"The unit of measure is the element from which is deduced the unit of weight."

By such contrivances the magnitudes and distances of the planets, as well as the fineness and weights of coins are measured, by the graduated scale of a yardstick; "the motions of the heavenly bodies being governed by general laws, applicable to all matter."

During 37 years, from 1689 to 1726, no less than nine changes were made in the standard value of gold coins in France.

In 1795 the present system was commenced in that country, based, however, upon a different calculation from the English, by an admeasurement of our planet, the earth, the distance from the equator to the pole being computed, for a standard of measure, the French meter.

A cube of pure water, at the temperature of melting ice, measuring each way the hundredth part of this meter, offered a certain standard weight, called a gramme. From such bases the franc coin was deduced.

These units of admeasurement were multiplied decimally into other denominations, by which the system is thought to possess "completeness as well as simplicity."

Before the year 1772 there were thirty-one mints in France—these were afterward reduced to eighteen. Finally, only six remain. The coinage of the French is very large, and especially their specie circulation in silver, while in England a gold coinage is more predominant.

The minor purposes of trade are supplied in populous portions of Asia—China, Burmah, and Japan—by a "current money," composed of thin plates of hardened, mixed, base metal, like brass or bronze, stamped with devices, and sometimes apparently cast in molds, each piece having a square hole in the center, by which these coins are strung like button-molds, in parcels of one hundred, for the convenience of counting and of carriage.

Their computations of money are subdivided decimally. Being excellent judges of the purity of foreign coins, the Chinese separate good from bad with rapid accuracy. They recognize the character and fineness of metal by the sight, the touch, the smell, and the sound.

Dr. John Bowring, formerly and now consul to Canton, stated before the select British committee, that "in Japan, accounts had been kept in decimals from

* Davies' Logic of Mathematics.

time immemorial, and that the Chinese system is one of great simplicity and ease."

The integer, or whole number, is one ounce of pure silver, which is divided into 1,000 parts, called "cash."

Dr. Bowring declared "he never could approach his Chinese servant in the celerity with which he kept his accounts."

These anciently civilized nations employ refined gold and fine silver, in bullion bars, without coinage, for exchanges of all large sums in trade.

The Chinese notation of fineness is by hundredths, ours by thousandths. Some fine silver bars, fabricated in China, exhibited upon assay at the mint in Philadelphia a purity of .982—a very high grade, equivalent to 98 and 2-10ths per cent of fine silver.

The Chinese money system we conceive to be similar to that recorded during the residence of the Hebrews in civilized Egypt. Identity in quality was the most ancient process of preparation for monetary calculations, as it is now—"pieces of money" were checked "by weight" in the interchange between Joseph and his brethren, when Jacob sent into Egypt for corn.

Abraham is described to have had servants "bought with money of the stranger," as well as some "born in his house."

These references are presented for the satisfaction of those who dread novelities, to convince them our object is not a new one, but as old as the days of the Hebrew Patriarchs.

In Assyria, Persia, and Hindostan, a coinage of gold was known and valued at the conquest of Alexander. From these countries the Greeks and Romans derived the models of their measures, weights, and devices, which have since prevailed in modern Europe, and now among us. From the time of Aristotle, we have a generally accepted definition—"Money is a standard measure," by which the value of all things are ascertained, regulated, and represented. Money forms a language of mathematical proportion, by which commercial interchanges are readily made and generally understood.

In Dialogues upon the usefulness of ancient medals or coins, Mr. Addison describes them as "a kind of printing, before the art was invented, giving great light to history;" we now know that the invention of printing claims a high antiquity.

Napoleon—as great in civil as in military administration—proposed to have throughout Europe money of the same value, but with different coins or devices.

Identity of coins has been employed to produce a stronger bond of union among nations. For this purpose the relations between the silver coinage of Russia and Poland were projected, to facilitate their intercourse.

The coinages of Italy and Spain were assimilated, at one time, with that of France, as those of Greece, Rome, Saxony, and Baden now are. Uniformity is desirable in all national measures and weights, but especially to regulate coinage. Nations that have mints possess means for one common measure, or standard of proportions. The varieties which now exist result from want of concert in the elements of art, and needless dissimilarities in mint usages.

The principles upon which the practices of different mints are founded, prove that different nations may act upon the same general system in all money accounts.

The distinct units of weight, fineness, and value form curious and important portions in the arrangements of our coinage.

The properties of numbers were held sacred by the ancients, and regarded as of divine authority, from the evident system, exactness, order, and harmony in the varied arrangements of the natural world.

Numbers were divided into classes:—

ONE was regarded most eminently sacred;

TWO the associate;

THREE considered perfect, comprehending—"The Beginning, the Middle, and the End"—one conspicuous name of The Divinity.

Pythagoras was thought to mingle fancy with the truths of mathematics.

FOUR is the number he is described to have affected to venerate the most, from deductions of the absolute powers of numbers he had been taught in the East.

FOUR contains within itself all the musical proportions; and a very ancient division of mathematical science distributed it into four parts, namely—1, arithmetic; 2, geometry; 3, astronomy; and 4, music.

The Spanish dollar, assumed as the unit of value for the coinage of the United States, contains one ounce of silver—originally subdivided into halves, quarters, eighths, and sixteenths. This silver ounce was called "a piece of eight," in reference to the "reales," or twelve-and-a-half cent pieces, which compose its sum.

Sixteen silver ounces are equal to one pound avoirdupois weight—the result of some ancient Phenician, Assyrian, or Arabian measure of computation.

One pound, of sixteen ounces, of standard silver, was represented by a Spanish doubloon—an ounce of standard gold.

The unit of weight, in the calculations for coinage of the United States, is devised from the Troy ounce, twelve to the pound weight, believed to have been introduced into Troyes, of France, from Cairo, in Egypt, during the Crusades. We dismiss the pound, pennyweight, and grain weights, and confine our mint estimates to the divisions of one ounce into hundred parts, converted by a distinct process into dollars and cents; and we multiply the ounces decimally.

To estimate the quality of gold and silver, in the mint practice of the United States, the unit for fineness is obtained from the more modern French computation—a gramme for assay of silver, and a half gramme for assay of gold—each subdivided into thousandths or milliemes, in place of the antique jewelers' weights, twenty-four carats and their eighths.

By our decimal intentions we have intermingled a variety of units employed in the measures, weights, and standards of other nations, but are uniform with none.

We have broken down some ancient systems into decimals, but still use the original materials, however difficult for mathematical correspondence with others.

We have admitted astronomy, geometry, and arithmetic into our mint calculations, but have disregarded music.

Our coins do not harmonize with those of other nations, nor do any accord with us.

In order to illustrate, for the convenience of those not conversant with the simple but still complicated structure of mintage, we may describe the elementary features in the coinage of gold for the United States as four—1st, perfectly fine gold; 2d, fine silver alloy; 3d, pure copper alloy; 4th, exact weight.

Silver, in some definite proportion, is always found united with gold in its native state; for perfectly pure gold is solely the result "of the refiner's art." Silver, therefore, is used as a natural alloy for gold coins by certain nations, who thus avoid the modern process of complete separation of these metals, and recovery of the silver by acids.

In the States of South America, in Mexico, and in Spain, the coinage of doubloons was made without addition of copper alloy; while in Europe generally the mints endeavor to rid their gold coinage of silver entirely, reviving this metal by chemical process and using copper alone as an alloy.

Consequently the national colors vary very much in these different coinages of gold.

In the standard gold coins of the United States, the proportion of silver alloy has varied from 25 to 50-100ths in the 1,000 parts, or from $2\frac{1}{2}$ to 5 per cent. The other portion of alloy from 50 to 75-100ths, or from 5 to $7\frac{1}{2}$ per cent in the 1,000—being copper. This allowance for silver alloy in gold pieces has been recently reduced at the United States mints to 11-100ths in the 1,000, or 1 per cent and a fraction, for greater uniformity of color.

Although the standards of France and of the United States are the same in respect to the proportionate amounts of fine gold in their coinages, yet as the

weights of their coins and the alloys differ, there is not a perfect approximation of values in their severally proportioned pieces.

The coins of either, when exported to the other, are mutually regarded as bullion, or uncoined gold.

The election of silver alone or copper alone as alloy, with the same allowance of fine gold in the coins of each, would render equal weights of the standards of both these countries of the same intrinsic value.

The specific gravities or differences in the relative weights of metals of the same bulk, by measure, is expressed minutely and accurately by figures. The specific gravity of fine gold is rated at 19.36; fine silver at 10.50; pure copper, 8.80; but the gravity of a mixture of metals is not always the exact result of arithmetical addition.

With all the care that can be taken, the same alloy is acknowledged to produce varying results in this trial by specific gravity. Being a much less delicate test than the assay by complete separation of the metals, it is considered inadmissible for mint purposes.

The legal amount of fine gold in English standard coin is 916 parts in the thousand, or 91½ per cent and a fraction, alloyed with copper alone, which gives a dark, rich color to the British coin.

By concerted action between England, France, the United States, and other nations, consenting to the employment of similar units of admeasurement for weights, fineness, and alloys, connected with a uniform basis for all decimal computations; a French Napoleon, a Ducat of Denmark, an English Sovereign, a Spanish Pistole, a Moldore of Brazil, a Doubloon of Mexico or Peru, and a Russian Imperial, could as conveniently, and more economically, be formed of the exact value of a gold coin of the United States, as it is easy for the several mints in the United States to oblige all eagle coins to correspond precisely with each other; to contain exactly the same quantity of fine gold and alloys, and to be of the same general weight and value among us. Any sum can be mutually assumed, with equal facility, by concert at all mints, and decision in the bases.

The large amount of fine silver contained in our gold coins of preceding dates, had sometimes invited a destruction of their forms, for the purpose of recovering that metal by ready processes of art at refineries in foreign countries.

The addition of spurious or counterfeit pieces to large amounts of correct gold coins, exported without sufficient scrutiny, once caused suspicion of the general accuracy of the coinage of the United States. Possibly for want of information at that time of a method to check the values of large amounts of standard gold by weight, complaint was made to the American Minister in London, Mr. Lawrence, that the assays of the mints of the United States were suspected to be inexact.

As the annual trials to test uniformity in all the coinages of the several mints are regular and precise by law, the assayers experienced no inconvenience, although aware of other causes which produce the same results as defective purity, or deficient fineness in the national coinage.

The value of precious metals is computed by multiplying the gross weight, after proper melting, by the fineness or quality ascertained from careful assay, expressed in thousandths of a French half gramme. A moderate arithmetician can calculate that defective weight would cause the same results in the product as inaccuracy in the certificate of fineness.

Large sums of correct coins, slightly intermingled with counterfeit pieces, exhibit deficient weight before melting to a mint officer or clerk; and when melted in mass, as surely show a lower quality by assay than the standard fineness for legal coins.

The assayers and refiners abroad certified satisfactorily to the accuracy of the mint practice in the United States. The French mint in Paris expressed such experience from re-melting, re-assaying, and re-coining seven million of our gold pieces during that year.

While this constant re-melting and re-modeling of carefully coined gold occurs, the policy of incessantly increasing the gold coinage of the United States

may well be questioned. For this manufacture, which is tedious, expensive, and important, does not add to the value of the precious metals, which are solely regarded in other countries as old or uncoined gold.

The employment of gold and silver in the arts has become very extended, and bullion of different qualities may be easily prepared at the mints for such operations; to restrain a disposition to work up coins alone for such purposes, in consequence of their well ascertained quality of fineness, readily calculated for reduction.

As our Southern and Western States produce the precious metals, and four mints have been established in the South and West, this subject is important to us in a mercantile view. Gold and silver, as raw products, are annually exported to a very large amount, besides the indiscreet and unnecessary loss of coins by transportation, to adjust our balances of trade.

Ancient historical monuments assure us the trade in gold and silver was appreciated in remote periods of civilization, and their valuation conducted upon a system which originated in correct views of practical utility for general convenience and the earliest commercial interchanges.

Moneys were very anciently divided into "pieces" designated by images or "devices," their value checked by "weight," and estimated from "quality," or their fineness.

The modern mint practices preserve the same measures of precaution, the purity and weight of every piece of coin being accurately adjusted before its emission from the mints.

By the systematic regulations of the Asiatics, whose usages in metalurgical arts gave an impulse to similar procedures in civilized Europe, we feel persuaded that the moderns, in the discovery of exact principles of art and knowledge, pass through the same kind of experience which led to the many original processes enumerated in the ancient Scriptures; which, while they offer to our intelligence a corrected system of morals, at the same time announce in a simple but comprehensive manner the progress and condition of the varied useful arts of life at periods we scarcely dare compute.

The existence of "good" gold, an expression understood to have reference to its quality of fineness, is noticed in the second chapter of the Genesis. The technical name of goldsmith, translated "founder," appears in Judges, and that of the crucible, or "firing pot" for melting, in the Proverbs.

The metals enumerated in those old writings are iron, copper, silver, gold, lead, and tin.

There is a Hebrew word to express an admixture or amalgam. Some suppose it bronze or brass, the ancient manufacture of which, at Corinth, was celebrated, as well as in Egypt. Others regard it a combination of gold alloyed with copper, like modern coin.

That the metalurgical arts were carried into useful manufactures at very distant ages, is shown by the list of tools fabricated from metals, or employed in the various processes of smelting and working them distinctly specified in the Hebrew Scriptures.

Axes, saws, and stone-cutters, chisels, chains, bolts, nails, knives, warlike weapons, bedsteads, chariots and harrows of iron, are all mentioned at the period of the Hebrew Exodus; besides, numerous vessels for cooking or sacrifices were made of copper; defensive and offensive armor—swords, spears, arrow-heads, shields and helmets of bronze or brass, combinations including the metals of copper and of tin.

Drinking vessels of gold and silver, altars, idols, possibly a rough currency like coins, with devices or rudely cast models of the figures of animals, were represented as in common use in the days of Jacob.

Lead was employed as weight for plumb-lines. The anvil, the hammer, pincers or tongs, the bellows, "fining pots or sand crucibles, and melting furnaces," are expressively detailed by Hebrew writers of antiquity.

The chemical or mechanical separation of the metals by fluxes, for purification, and the dross resulting from them, are all used as illustrative comparisons

of ordinary customs in the familiar but figurative language of the Hebrews. The casting of images, forms, figures or ornamented plates, were obviously known in the age of the Patriarchs. Soldering and welding, smoothing and polishing, overlaying or gilding, and other metalurgical operations, indicate the distinct branches of "workers" in iron, bronze, brass, silver, and gold.

Some of the neighboring nations, as the Tyrians, were noticed by the same authorities to have been more experienced and successful in such handicraft than the Hebrews.

Many golden coins produced during past centuries at the mints in Europe, Africa, and Asia, indicate a high degree of purity or fineness, and prove the excellence of former artistic processes in this part of the manufacture. Gold and silver "refined in a crucible by fire," often used as comparison to designate resemblances, indicate well-known customs. Such purity being not natural among those metals, but entirely due to processes of ingenious skill and art.

The sequins of Rome, Venice, and Tuscany, fabricated during the early portions of last century, contained from .996 to .997 parts of pure gold in the 1,000, or 99½ per cent of perfectly fine gold. This is as high quality as that obtained by the present means of separation in our refineries by acids. Assays made at the mint of the United States show in the old gold ducats of Hungary .986; Sweden, .977; Bavaria, .980; Denmark, .988; Hanover, .993; the Netherlands, .980; and Poland, .984, fineness varying from 97½ to 99 per cent of fine metal. The last minute fractional remnants of silver separate with great reluctance from gold in refining, and it is only during the delicate and diminutive operations of the assay department, that perfectly pure or fine gold is obtained in practice. The golden ounce (.995) of Naples and Sicily, the toman (.991) of Persia, the mohur (.982) of Bengal, and the sequin (.958) of Egypt, show a fineness from 96 to 99½ per cent, and demonstrate that the ancient principle in coinage was a close approximation to perfect purity in the metals, and that their calculations of value were simply based, as now, upon the fineness and the weights.

The doubloons, or golden ounces, of Spain, Mexico, and the South American States, vary in fineness from .813 to .872 thousandths, or from 81½ to 87 per cent, their alloy being silver alone. The moidore of Brazil, the joannes of Portugal, and the imperial of Russia, approach the British standard of coinage, or 91½ per cent. Yet the varieties in the proportionate values of such coins are still too great in these different sections of the commercial world to permit any reciprocal interchanges at equal rates.

All coins, however varied in fineness, weights, and characters of alloy, continue to be graduated with great care in each country, but in exchange with others require extended, complicated, and dilatory calculations of arithmetic, which, by general consent among nations, could readily be dismissed.

If the actions of national mints were submitted to a reformed code of regulations, organized by practical men, for general uniformity in the basis of measures for fineness, weights, alloys, and decimal calculations, without altering the national superscriptions, devices, forms, and designations, advantage surely would be gained for all.

Such uniformity once established by a few nations, other measures of accordance might be expected to ensue, for the promotion of general exactness in other weights and measures, for useful and equitable correspondences.

The practices of mints require the greatest accuracy in all their details, and unless an exact uniformity exists in their original basis of calculations, no identity of values can prevail in coins. The mints require the rigid accord of mathematical, chemical, and mechanical actions, which, being known to prevail in the separate coins of each nation, can, by concerted action, as surely be made to exist in the general coinage of all.

If it is held important that neighboring portions of the same country should comprehend and employ the same currency, no logical argument can prove a contrary effect among intercommuning nations for commercial transactions. The gold coins of the United States, easily and instantly recognized in Louisiana, Maine, Michigan, Kentucky, South Carolina, and California, could as readily be

understood and valued in France, Germany, England, Spain, Russia, and Sweden, Mexico, Brazil, and Peru, Egypt, Persia, India, China, and Japan, and all their coins as readily credited here. Such a plan of concert once established by a few, the practice of re-melting coins of either, thus consenting, would be abandoned at once among them.

Impressions, forms, dates, or places of manufacture, do not affect value, which is regulated solely by the amount of perfectly pure gold or fine silver, in coins, jewelry, ores, or dust. By the employment of the most easy decimal calculations, their values can be reduced or augmented, and the exact worth of every 1,000th, 100th, 50th, 10th, or 5th, of any basis of value be generally established. and everywhere correctly comprehended by all men who are taught decimal arithmetic, or have sense and fingers.

Such easy uniformity of fabrication might introduce the practice of testing large amounts of gold and silver coins or bullion, by weight; which, in the larger transactions of Commerce, would prove the best remedy against counterfeits and false tokens.

We all comprehend the inconveniences resulting from any depreciation in the value of paper money in adjacent States; still the similarity of five, ten, twenty, and fifty dollar notes enable us to exchange when they will pass by a recognized public confidence.

The dissimilarities in the coinages of different nations expose merchants to some of the inconveniences of uncurrent paper, which can be avoided by correspondence, explanations, and a very moderate yielding by each to slight changes in mint practice.

The mining interests of the Southern States are concerned to reduce charges upon their industry, which all unnecessary impediments, in ascertaining the value of their products, multiply upon them. As coins and as merchandise, gold, and silver require to have their quality of fineness carefully designated, in order to decide upon their value, like an inspection of flour, tobacco, or fish. Condition regulates the character and worth of all—for use, manufactures, or exchanges.

Since the original introduction of civilization from Africa and Asia into Europe, the nations who employ coins as representatives of value have never consulted together upon any mutual accommodation in coinage. They have each fixed upon some convenient or casual intermingling of the metals to represent their standards, which, like those exhibited in war, present different forms, with distinct emblems and colors. The varieties of value in these standards existing among different friendly nations, instead of being at once recognized by the eye, like their flags, can only be distinguished by separate calculations of arithmetic to verify their character in every market. They are private signals, promoting difficulties rather than convenience among nations, not always differing in language.

In matters of money we may, surely, all advance with success under one truthful, peaceful, and common standard.

All foreign coins, notwithstanding the special care of each separate nation in producing them, are now degraded as bullion abroad, recklessly melted and then issued under a new standard—a kind of civilized piracy, which should be abated for the benefit of all, with the general consent of all.

The enormous exportation of coins constantly witnessed from ports in the United States, may induce attention to this subject, connected with continued applications for increased means, to augment and promote so impolitic a procedure.

The original laws for the organization of the mint of the United States could not have anticipated the immense influx of precious metals consequent upon our recent discoveries and lately acquired possessions, which have impaired all former calculations of proportion, distribution, and values.

As raw material for export and foreign exchange, the values of gold and silver can be estimated without coinage, like those of any other products of industry or of art; but as a currency required by our constitution for permanent domestic exchanges and home convenience, other considerations are essential.

The annually increasing coinage of gold beyond our domestic necessities, appears in opposition to true economy. Being solely estimated as bullion in foreign countries, it is re-melted by millions at the mints and refineries in Europe, without special advantage to them or to us.

While there exists in Great Britain a consent to the importance of an entire change in systematic coinage, and this subject is in active discussion, connected with decimal calculations for moneys and mintage, much valuable information may be gained or communicated, and a liberal scheme of mutual accommodation and concert now be generally approved.

The community of interests which the advancement of liberal knowledge and useful arts produce, by commercial intercourse, lead us to trust they contribute to promote peace and good-will among men of different nations and languages.

Art. V.—ELEVATED RAILROAD TERRACE FOR BROADWAY.

A NUMBER of plans have been suggested for facilitating the immense travel of Broadway, but we have seen none, so far as we are capable of judging, so well calculated to promote that object as the one proposed by Mr. JOHN B. WICKERSHAM, an ingenious mechanic of New York. We therefore cheerfully give place to the following communication from that gentleman. Its importance to the commercial and social interests of New York cannot be too highly estimated.

NEW YORK, June 5, 1854.

To FREEMAN HUNT, *Editor of the Merchants' Magazine.*

For some time past the subject of relief for Broadway has been frequently agitated, and many plans have been suggested to effect the object desired. All the plans submitted, however, have looked to the street only, not considering the relief of the sidewalks of any necessity.

The growth of this city for the last fifteen years is almost unprecedented by any other city in the world. Her Commerce has extended far and wide, and her manufactures are second to none in this country. The peculiar formation of the island on which New York is located, the North and East Rivers on the east and west sides of the city, concentrates the business of the wholesale class into the lower part, the most convenient location for the prosecution of that business. The transformations now going on in the lower part of our city, filling all the side-streets with stores and warehouses, and driving the families up town, must greatly augment the travel in Broadway, and every year more and more embarrass this thoroughfare. It is evident some relief ought to be given to this street which shall combine the greatest advantages with a moderate expenditure, and the greatest good to the greatest number. Something must indeed soon be done to prevent its being absolutely choked up.

These thoughts led me to suggest a plan, which, so far, has received very flattering encouragement from the leading men of the city. The plan proposed is, to erect additional sidewalks on both sides of Broadway, at a height of about 16 feet over the present sidewalks, supported by iron columns at the gutters; the width of the upper sidewalk or Terrace to be 19 feet from the buildings, 10 feet to be occupied by pedestrians, and 9 feet for rail-track on the outer side, which will be supported by the columns. By this means the Terrace will be relieved from the weight where it spans to the buildings. Both sides of the rail-track, outside and inside, are to be inclosed with iron railing. The pavement above is

to be formed of stone, supported by iron gratings and iron beams, with corrugated iron for the roof of the lower sidewalk, making a perfect water-tight covering, and an iron awning the whole length of Broadway more efficient than the present ones, protecting the pedestrians from storms and scorching suns.

The sidewalk above, doubling the facilities for travel, and increasing the shop-fronts to double their number, giving each property owner two fronts on the same street for each house, at a trifling outlay of \$1,500 for each 25 feet, the cost of its construction, will increase the value of each front on Broadway from \$20,000 to \$30,000, besides the dividends from the company's railroad, and the additional facilities and advantages to increase.

It is proposed that this improvement should extend from the South Ferry to the Crystal Palace, a distance up and down of about nine miles. Each property owner or tenant to take stock enough to construct the Terrace in front of his own building, which would be in the aggregate about \$3,000,000.

A street like this, doubled in its whole length, from the Battery to the Crystal Palace, would reimburse from receipts much more than the outlay required to fit it up with the improvements herein suggested. The unquestionable great increase of the value of property alone, independent of the receipts, must be apparent to every one.

I have herewith inclosed you a printed description, which enters more into the details of construction, explaining all the objections in respect to light, fires, removing buildings, inequality of stone fronts, drains, gas, water, &c., &c., which I hope, after perusal will meet with your approval and warm support.

If it is not out of place, I will here give a copy of one of the many testimonials received in favor of this project.

NEW YORK, March 13, 1854.

MY DEAR SIR:—I have devoted considerable time and attention to your circular in relation to an Elevated Railroad Terrace in Broadway. I feel convinced it is just the thing that is needed, and that it is the only feasible plan yet suggested.

I own some two hundred and fifty feet fronting in Broadway, on several locations, and would take my proportion of the stock. In fact, I regard the stock as one that would soon command a high premium.

Yours Truly,

P. T. BARNUM.

To J. B. WICKERSHAM, Esq.

With proper concert of action among the various business men of that thoroughfare, we would soon see the Elevated Terrace in operation, and adding a new impetus to the business of New York, by the attraction presented by such a structure.

Anything that tends to *advertise a city* to the world, by some leading feature different in its character from other cities, will induce strangers and business men to visit us, thereby increasing all kinds of business. Some may advertise in newspapers, which is very essential to success; others by costly arrangements in buildings that are always daguerreotyped on the brain.

So this improvement, affording as it will, additional facilities for business and travel, enticing purchasers and pedestrians to that great thoroughfare, will add immensely to the fame we have already acquired, and increase our business to a large extent, besides relieving and assisting the increased influx Broadway is daily receiving.

With a high regard for the tact and ability by which your Journal is conducted, I have the honor to be,

Respectfully yours,

J. B. W.

JOURNAL OF MERCANTILE LAW.

SHIP OWNERS—SPECIFIC PERFORMANCE OF A CONTRACT.

In the Circuit Court of the United States, before Judge Ware, Higgins in Equity vs. Jenks, et als. December 2, 1853.

In Equity for the specific performance of a contract for the sale of three-eighths of a ship now being built, with the right of the purchaser to the command, and for an injunction on the owners of the five-eighths against selling the same except with notice of this contract, and subject to whatever right the plaintiff may have under it, and against appointing any other person as master.

The facts in the case were fully stated in the opinion of the Judge.

Ware, District Judge. This is a bill in Equity seeking a specific execution of a contract. On the 9th of August, the defendants being then engaged in building a ship of about 1,500 tons burden, the plaintiff entered into a written contract for the purchase of three-eighths of her, upon which he was to pay at the rate of fifty-five dollars a ton, two-thirds of the amount in cash, deducting therefrom the cost of the rigging, which he was to furnish, and the other third in his notes, indorsed by Brookman & Co., of New York, in four, nine, and twelve months; and it was further agreed that Higgins should superintend and direct the completion and rigging of the ship, for which he was to receive no other compensation than payment of his board; and that when completed he should sail her as master and have for his compensation the best wages with primage, &c., allowed to masters commanding similar ships from the port of Bath. In conformity with the agreement the plaintiff has superintended and directed the work on the ship from the time of the contract until about the time of filing the bill; has furnished the rigging as it has been wanted, and made all his cash payments as often as demanded, and is now ready on the completion of the ship to deliver the securities named in the agreement for the balance due.

The plaintiff, apprehending that the defendants intended to disable themselves from performing their part of the contract, by a sale and transfer of the vessel, filed this bill praying for an injunction against a sale of the three-eighths bargained to him, and on their disavowing any such intention, amended his bill praying an injunction against the sale of the other five-eighths, except with notice of his contract, and subject to whatever rights he has under it, with a further prayer for an injunction against appointing any other person as master, and for a specific execution of the contract.

Since the filing of the bill the defendants have transferred five-eighths of the ship to Messrs. John and George Patten, and by a further amendment they have been made parties defendant, and the same remedies by injunction and specific performance are asked against them.

The original defendants have appeared and put in affidavits admitting the contract and offering to convey the three-eighths, and giving as a reason for refusing to fulfill the contract by putting the plaintiff in as master, that they have since the contract was made heard many reports and stories in disparagement of the plaintiff's character as a shipmaster, and against his truthfulness and integrity in his dealings as a man, from which they have become satisfied that he is not a fit person to have the command and management of such a ship, and that they should not consider their property in her to be safe in his hands.

Mr. George Patten, one of the new defendants, has put in an affidavit admitting the purchase of five-eighths of the ship of Jenks & Harding, and stating that a parole agreement for the purchase was made on the fifth of that month, the day on which the bill was filed, but that the contract was not completed and the transfer made by a bill of sale until the eighth, three days after—admitting that he knew that Higgins was the purchaser of three-eighths, and that he expected to go as master, but that he did not know the precise terms of the contract.

As to the Messrs. Patten, the purchasers, their purchase was made under such circumstances that they must be deemed and considered as having purchased with full notice of the contract with Higgins. They knew of his contract and they knew of his expectation of going master. The contract was in the hands of their venders and they might have seen it by asking for it, as it was their duty to do. I consider them as standing on the same ground and having the same rights as their venders and no others. They took the five-eighths subject to all the rights which Higgins had against Jenks & Harding.

The defence made by the affidavits of Jenks & Harding against a preliminary injunction till the hearing, and the same will be relied on at the final hearing against a decree for a specific invention, is in substance that of a surprise; that at the time of the contract they supposed Higgins to be a well qualified master and a trustworthy man; that they are now undeceived, and from what they have since learnt of his qualification as a shipmaster, and of his character as a man, they verily believe that they cannot with safety and prudence confide to him the command of the ship, or intrust to him the management of their property. But it is not pretended that they were deceived by any artifice or management on the part of the plaintiff.

The negotiation between the parties for the sale and purchase of this vessel, commenced some time before the contract was consummated; the precise time does not appear, but I infer from the affidavits and the exhibits in the case in the early part—as least as early as the middle of July. It was completed on the 9th of August. Capt. Higgins is a native of Maine, and was born and brought up in Orland, an adjoining town of Bucksport. Early in life he had been in the command of two small vessels, engaged, I infer, in the coasting trade. Afterwards he went to New York and was there employed as a shipmaster. If he was a stranger to the defendants, it would seem that during the month which the negotiations were pending, the defendants might without difficulty have made all the necessary inquiries and obtained all the necessary information in relation to his qualifications and character, and it is hardly to be supposed that, as men of ordinary caution and prudence, thus would have agreed to intrust to his management and control so large and valuable a property as five-eighths of this ship, of the value of \$37,000, according to the rate at which the sale was made to plaintiff, or that they would have been willing to have entered with that confidential relation of joint-owner of the vessel, intrusting to him the command, unless they had been pretty well assured of his qualification as a seaman, and of his integrity as a man. With all this time and opportunity for informing themselves, it seems to me that their excuse of surprise for not fulfilling their engagement ought to be scrutinized pretty narrowly. It was nearly three months after the plaintiff had been engaged in executing his part of the contract, and about four from the commencement of the negotiation for the purchase, that he was informed that he would not have the command of the vessel, though I cannot but believe that it must have been well understood by the defendants that this was Capt. Higgins' principal object in the purchase; that it was not so much his object to make an investment in the vessel, as to provide himself with an honorable and lucrative employment.

If, however, it is made satisfactory to appear that here has been a real surprise—if it be shown that for want of capacity and want of integrity the plaintiff is unfit to be intrusted with the command of such a ship, and that the defendants cannot safely intrust their property in his hands, as this application for an injunction and specific performance is addressed to the discretion of the court and is not a claim strictly *en delicto justitia*, my opinion would be that he ought to be left to his remedy at law. Under this view of the subject it becomes necessary to examine the foundation of the defendants' excuse for not performing their engagement. They have produced a large number of affidavits in their justification, most of them from persons residing in Bath, Bucksport, Eastport, and Calais, in which places he seems formerly to have been best known, all speaking of him in terms strongly unfavorable; some who have had dealings with him charging him with dishonesty, others speaking only of his general reputation for want of in-

tegrity, and for want of veracity, and several of them adding that he commonly was known by the name of the lying Higgins. They uniformly speak of him as a man unfit to be intrusted with such a vessel. All this testimony is open to one general observation, that it relates to a period ten or twelve years ago when he was employed in the command of small vessels in the coasting trade of Maine, while he was young and soon after arriving at his majority.

Some years ago, precisely when does not appear, but as I collect it from the affidavits, eight or nine years, the plaintiff left this part of the country and went to New York, has since been employed as shipmaster from that port. The defendants have produced two affidavits from New York, one of Richard P. Buck, formerly of Bucksport, and now a commission merchant and ship-owner of New York, who states that he has been acquainted with Capt. Higgins for six years, that he has been consigned to him but never employed by him, that he thinks him unfit to have the command of a ship of 1,000 tons, that he would not intrust him with the command of a ship because he believed him to be incompetent, that he considers him untrustworthy and irresponsible, that he would not trust him for a hundred dollars, and he adds that he should not have given his affidavit if he had not been called upon by a subpoena. The other is of Benj. Carver, formerly a shipmaster and now a dealer in ship chandlery. He has known Higgins for three or four years, has but little acquaintance with him, but has formed an unfavorable opinion of his character and would be unwilling to purchase into a ship of which he was part owner. This is all the evidence which the defendants have produced from New York where the plaintiff has been employed for the last eight or nine years. That of Carver is a little and but a little more than negative. That of Buck is explicit and full as to his opinion, and it may be remarked that he is the only one of the affiants who has taken pains to inform us that he gives his affidavit from necessity, and in the same breath says that he would not trust the plaintiff for one hundred dollars. This appears to me to be pretty strong language for an unwilling witness towards a neighbor, who has shown himself able to fulfill a contract for more than \$20,000.

The defendants have also produced the affidavits of Mr. Curtis, and Mr. Dimmock, each president of an insurance company in Boston, who had insured vessels commanded by the plaintiff and had had losses. They both say that after examining the statement of the losses and the circumstances under which they happened, they were so dissatisfied that they should be unwilling to insure a vessel of which he had the command. If this evidence stood alone and unexplained, and unqualified, it would appear to me to be entitled to very grave consideration. If the plaintiff has justly earned such a reputation that where his character is known a vessel under his command could not be insured at all, or not at the usual rate, it would be a decisive objection to the application that he here makes, and I should feel bound to leave him to his remedy at law. But in this connection it is proper to consider the affidavit of Zebulon Cook, formerly of Boston and now of New York, an insurance broker of great experience, and entitled to full credit as a man of integrity and as an expert in the business. He was employed by the owners of one of the vessels insured in Boston to prepare a statement of the loss, and he states that in making up the statement, his intercourse with Capt. Higgins was protracted for some weeks, and that in the information and explanation he gave, he showed so much frankness and fairness that he became favorably impressed towards him, and that he has heard nothing since to change that opinion. This was one of the cases from which the Boston insurers formed their unfavorable opinion, and perhaps it would not be unreasonable to allow one opinion to balance the other.

To meet this testimony impeaching his character, the plaintiff has produced the affidavits of five gentlemen of New York and six from Boston, belonging to reputable mercantile houses, who have been acquainted with him for the last seven or eight years, who have had transactions of business with him, all speaking in strong terms of his capacity and integrity, opinions which they have formed from their intercourse with him in business, as well as from his general reputation. One of them, Mr. Dishon, of Boston, was acquainted with the affair of the

Kanahwa, one of the insurance cases complained of by the Boston offices, and formed so favorable an opinion from his own observation and what he heard of others, that he was very desirous of selling him part of a ship as late as last August, and putting him into her as master.

On a fair consideration of the plaintiff's affidavits, I think that they more than balance and neutralize those of the defendants. These relate almost exclusively to a period ten or twelve years ago. The plaintiff was then a young man just past his majority. They undoubtedly leave on the mind an unfavorable impression of the plaintiff's character at that time. But whatever the truth may be, this has not prevented him from obtaining employment and rising in his profession, and passing from the command of small coasting vessels to those of a larger class engaged in foreign trade; and for the last nine or ten years, while he has sailed from New York, notwithstanding the opinion of Mr. Buck, I feel bound to consider him as having maintained a fair reputation as a shipmaster, and as qualified and competent for any kind of business he may be required to transact in that employment, and I must hold that the excuse which the defendants have offered for not performing their engagements be removed.

The question then fairly arises, and to my mind free and disembarassed, whether the plaintiff, on the principles upon which the courts of equity exercise this discretionary jurisdiction, is entitled to the relief, by way of injunction, for which he asks. As to the first prayer of the bill, that is an injunction against the transfer of the five-eighths of the vessel without notice of his contract and whatever rights he has under it, I can see no objection to it. If the contract gives him any right in the nature of a privilege and preference to the command of the ship, an obligation, charge, liens or *nexus*, which follows and adheres to the thing and qualifies the right of ownership, it is what he has bargained and paid for, and whatever it may amount to he is on every principle of justice entitled to. If it is a right of any value, he might lose it by a transfer to a *bona fide* purchaser without notice. But, if with notice he might have the same right, whether it is to a specific performance or only to a compensation in damages against the assignees, or against the original owners.

As to the second prayer for an injunction against the appointment of any other person to the command, there is certainly much more difficulty; nor do I pretend, after the best consideration I have been able to give to the subject, to hold an opinion far from doubt. It appears to me that this injunction ought not to be granted, unless on the ground that the contract is a proper one for a decree of specific performance, and this is only to be determined at the final hearing. I am aware that it is not unusual in cases admitting of doubt, for the court to grant a preliminary injunction, to preserve all matters unchanged till the hearing, but it is usually in cases where things may remain in *statu quo* without sacrifice to either party. In this case the effect may be to keep the vessel unemployed at the wharf till the hearing, to the injury of all interests.

Without undertaking to anticipate what may be the opinion of the court on a final hearing, it may not be out of place here to remark that the grounds on which the courts of equity take jurisdiction to decree a specific performance of contracts, is that a court of law can give for the breach of a contract no other remedy than damages; that in the particular case damages are an imperfect and inadequate remedy; that it is against conscience to leave to a party his election, either to pay damages for a voluntary breach of his engagements, or faithfully to perform them; and that it is unequal and unjust to the claimant to leave him to recover by a suit at law such damages as a jury may think proper to give him, in a case where the damages are uncertain and conjectural, instead of having the full benefit for which he has bargained by a specific execution of his contract.—2 *Story's Equity*, secs. 717-718.

It cannot be denied that this reasoning of courts of equity applies in its full form to the present case. It is sufficiently apparent in this case that the principal object of the plaintiff in this purchase was not a mere investment of money. It was to provide for himself some lucrative and honorable employment in his profession. If he had purchased only as an investment, there would be no par-

ticular hardship in leaving him to an action of law for damages. A jury would have a clear and intelligible rule by which to ascertain the damages. But by what rule is a jury to calculate the damage to the plaintiff, of the disappointment in being thrown out of employment with all his available means locked up in their vessel. It is plain that the damage is altogether uncertain and conjectural.

The counsel for the defendants have urged several objections to the granting an injunction, in a line of argument tending to show that this is not a case for specific performance. By what process, it is asked, will the court enforce a specific performance, and if it is enforced of what avail will it be for the plaintiff? The force of this argument presses on the prayer for an injunction against appointing any other person as master. It is said if the plaintiff is placed in the command, that the defendants, being the major owners, may immediately displace him and appoint a new master, and that a decree for a specific performance would be nugatory. What the plaintiff asks for, and what he has bargained and paid for, is that the ship shall be finished and made ready for sea with all convenient speed, and he placed in the command. He has performed, or tendered the performance of all his part of the contract in its precise terms, and he claims a like performance on the part of the defendants. When the contract is carried into execution they may exercise all the rights the law allows them. Whether they, as major owners, can immediately remove him from the command, will be the subject of after consideration. It is certain in ordinary cases the major owners have this right. They may displace a master without assigning any reason.

But if the master is a part owner, a court of admiralty, by which this jurisdiction is exercised, according to Lord Stowell, requires some justifying cause to be shown by the major owners beyond their own pleasure, before it will interfere to displace him.—*The New Draper*, 4 Rob. 290. By the common law as a tenant in common, he has equal right to the possession with any other owner, and the admiralty pays so much respect to his common law right, that it will not interfere to disturb his possession without some cause shown, and would, I think, be reluctant to do it without a sufficient cause, when the master was in possession under such a contract as this.

On the whole, I shall grant both parts of the injunction asked for. And I do it with less reluctance, as the injunction is only until the further order of the court. If I am wrong, no irreparable injury will be done to the defendants, as they may at any time apply to the circuit judge to have the injunction removed.

LIABILITY OF RAILROAD COMPANIES FOR THE DELIVERY OF GOODS, ETC.

In the March term of the Supreme Judicial Court of Massachusetts, was tried the case of Nathaniel Stevens, *et al.*, vs. the Boston and Maine Railroad Co. This was an action brought to recover the value of twelve bales of flannel, which were sent by the plaintiffs from Andover over the defendants' road to Boston, on Saturday, November 2, 1850. The goods arrived, and were unloaded on the afternoon of that day. On Monday, November 4, the agent of the plaintiffs called for the goods, but the delivery agent of the defendants replied that they had been taken away by some other team. The agent of the plaintiffs owned several teams. The goods at this time were in the freight depot of the defendants, not having been taken away; but the delivery agent had made a mistake, owing, as he said, to the fact that the goods were not removed on Saturday, the day of arrival. The goods were destroyed by fire with the depot, on the night of the 4th of November. Previous to the fire no notice of the mistake was given to the plaintiffs or their agent.

Shaw, C. J. The defendants are liable as bailees. The plaintiffs called for the goods, and did not receive them, owing to the mistake of the defendants' agent. The delivery agent has a waybill, which affords him the necessary information to enable him to deliver the right goods to the right person, and it is his duty to deliver when called upon. His failure to deliver, upon request, is negligence, for which the defendants are liable to the full value of the goods.

SHIP—CONTRACT FOR SALE OF—NO SPECIFIC PERFORMANCE—REGISTRY ACT.

According to the proper construction to be on the 34th section of the 8th and 9th Victoria, c. 89, (the Ship Registry Act,) a court of equity will not enforce specific performance of a contract for the purchase of a ship, although such contract does not affect to make a present transfer of the ship, but is merely executory; the property in a registered ship can be transferred only by a bill of sale, containing a recital of the certificate of registry of such ship. *Hughes vs. Morris*, 19 Law Times Rep., 210.) This point turned upon the construction to be put on the eighty-fourth section of the last Ship Registry Act, (8th and 9th Victoria, c. 89,) which, in some degree varying from the previous acts, enacts, "That when and so often as the property in any ship or vessel, or any part thereof, belonging to any of her majesty's subjects, shall, after registry thereof, be sold to any other or others of her majesty's subjects, the same shall be transferred by bill of sale or other instrument, in writing, containing a recital of the certificate of registry of such ship or vessel, or the principal contents thereof; otherwise such transfer shall not be valid or effectual for any purpose whatever, either in law or in equity; provided always that no bill of sale shall be deemed void by reason of any error in such recital, or by the recital of any former certificate of registry, instead of the existing certificate, provided the identity of the ship or vessel intended in the recital be effectually proved thereby." Lord Justice Cranworth, in reference to the above section, observed:—"The language in this statute is altogether very informal; thus we have 'property in a ship to be sold;' the proper expression would be, 'the ship sold;' then the statute goes on 'that so often as any property in any ship or vessel, or any part thereof belonging to any of her majesty's subjects, shall be sold, the same shall be transferred by bill of sale,' containing such and such particulars, 'otherwise such transfer shall not be valid for any purpose whatsoever.' What is said by the counsel for the plaintiff is, that a contract, although not valid to transfer the property, may make the party the owner in equity. That would be to get rid of the whole policy of the statute, which is, (whether a sound policy or not we need not inquire,) that there should be the means of seeing conclusively, by tracing from the original grand bill of sale, as it is called, from owner to owner, the ownership for all time. But if this doctrine that is contended for be right, there never need anything appear in any document from the very first sale, because it may well be a sale in equity, which would be just as good, and handed from party to party, and I do not see why the whole policy of the statute may not be got rid of entirely and effectually, even supposing there be an alteration in the law by the omission in the last registry statute, which is merely an alteration with respect to a right of action, and not an alteration that can affect the question of equity."

COUNTERFEITING TRADE MARKS.

A decision of some importance to manufacturers was recently rendered in the Superior Court of Connecticut, whereby it is shown that manufacturers are liable for imitating or approaching the imitation of the trade marks and labels of other manufacturers. This point has been similarly held in previous cases in the United States.

The present suit was brought at the instance of Messrs. J. & P. Coats, manufacturers and sellers of spool cotton, of Paisley, Scotland, against the Wellington Thread Company of Connecticut, for an infringement of the labels used on the spools.

They show that the Wellington Thread Company, at Wellington, Tolland County, Connecticut, manufacture spool cotton also; but imitate the mark of Messrs. Coats & Co., so as to make it appear as "Coats' best six cord, 200 yards;" and that the article is really inferior, and contains only 150 yards.

An injunction has been granted by the Superior Court against the Wellington Thread Co., to prevent the further use of the "false and simulated labels and wrappers on their thread," under the penalty of ten thousand dollars. The Company was also taxed for the costs of suit.

CARRIERS BY SEA—BILLS OF LADING—ROBBERS—DANGERS OF THE ROAD.

The following decision of the Court of Exchequer, as to the liability of ship-owners undertaking the carriage of goods, will be of some interest to mercantile men. The plaintiff sought to recover from the defendants the value of a box of gold dust, part of 11 received by them from Panama, to be carried to the Bank of England. The defendants carried the goods from Panama across the Isthmus, by land, shipped at Chagres, and brought them by steam-vessels to Southampton, and thence carried them by the London and Southwestern Railway to London. The bill of lading was given for them at Panama, acknowledging the receipt of 11 packages, said to contain 7,000 and odd ounces of gold dust, to be carried to the Bank of England, "the act of God, the Queen's enemies, robbers, fire, accidents from machinery, boilers, steam, dangers of the sea, roads, and rivers, of whatsoever nature or kind, excepted."

All the packages arrived safely at Southampton, and were placed on the railroad to be carried to London; but one of them was stolen secretly from the railroad truck before their arrival there, and the jury found that the defendants were guilty of negligence in the conveyance of them to London, which caused the loss. The defendants pleaded the exceptions in the bill of lading, in two different pleas, one stating that the loss was occasioned by robbers, the other by dangers of the roads. At the trial both pleas were found for the defendants, but with a reservation of liberty to enter a verdict on both for the plaintiff. A rule *nisi* for the purpose having been granted, the case on behalf of the defendants was elaborately and fully argued. The Court of Exchequer decided that where, as in this case, the property was pilfered, or taken by stealth, the defendants were liable for the loss, although they would not have been so liable had it been taken by a *vis major* which they could not resist; the word "robbers" meaning persons thieving with violence; and that the exception, "dangers of the roads," meant marine roads in which vessels lie at anchor, or dangers caused by the overturning of carriages in ruts or precipitous places. (*De Rothschild vs. the Royal Mail Steam Packet Company*, 19, Law Times Rep., 229.)

SHIP-OWNERS—INSURANCE.

The following important decision to ship-owners, in the case of *Dean vs. Hornby*, is from an English paper.

In this case the facts had been turned into a special case for the opinion of the Court of Queen's Bench. The plaintiff was the owner of a vessel called the *Eliza Cornish*, on which he had effected, with the defendant, a time policy from April, 1851, to 1852. In November, 1851, the vessel sailed from Valparaiso to Liverpool, and on the 1st of December in that year, while passing through the Straits of Magellan, it was seized by pirates, who appeared to be men in rebellion against the Chilian government. The fact of its seizure was communicated to the commander of her majesty's ship the *Virago*, who was stationed in those seas, and he recaptured it, put some men on board, and sent it to England to be adjudicated on in the admiralty court there. In the course of the voyage it sustained some damage, and was taken into the port of Fayal for repairs. While there it was repaired by the purchaser, and finally came, abandoned and sold, to England. On intelligence of the capture by the pirates reaching England, the plaintiff sent in a formal claim for a total loss, stating the capture as a total loss; but also stating in his notice that the ship had been taken back to and condemned at Valparaiso. This statement of condemnation was erroneous. The underwriters declined to receive the notice of abandonment, on the ground that the vessel having been in fact brought to England, no total loss had occurred, but the owner might recover possession of it under the 13th and 14th Vic., c. 26. It was found as a fact that none of the crew or any one on the part of the plaintiff had any control over the vessel from the time of the capture, and the question under these circumstances was, whether the plaintiff was entitled to recover for a total loss. The court was of opinion that on the true principles of insurance law, and according to decided cases, the plaintiff was entitled to recover.

COMMERCIAL CHRONICLE AND REVIEW.

CONDITION OF THE MONEY MARKET THROUGHOUT THE COUNTRY—PROSPECTS OF THE FALL TRADE—STATE OF THE MANUFACTURING INTERESTS—BUILDING AND OTHER IMPROVEMENTS—RECEIPTS OF RAILROAD COMPANIES, AND PECUNIARY EFFECT OF CARELESS MANAGEMENT—EXPLOSION OF THE PARKER VEIN COAL COMPANY—NECESSITY OF GUARDING AGAINST FRAUDULENT ISSUES OF STOCK—CONDITION OF THE BANKS AT NEW YORK AND BOSTON—COMPARATIVE RECEIPTS OF LEADING RAILROADS FOR MAY—DEPOSITS AND COINAGE AT U. S. MINT FOR MAY—FOREIGN IMPORTS AT NEW YORK FOR MAY, AND SINCE JANUARY 1ST—CAUSES OF INCREASED RECEIPTS—COMPARATIVE IMPORTS OF DRY GOODS FOR MAY, AND DURING THE LAST FIVE MONTHS—REVENUE OF THE COUNTRY, WITH A STATEMENT OF RECEIPTS AT NEW YORK AND PHILADELPHIA—EXPORTS FROM NEW YORK TO FOREIGN PORTS FOR MAY, AND SINCE JAN. 1ST—EXPORTS OF LEADING ARTICLES OF DOMESTIC PRODUCE TO JUNE 17TH—IMPORTS AND EXPORTS FOR ELEVEN MONTHS OF THE FISCAL YEAR, ETC.

THERE was more ease in the money markets throughout the country early in the month, but toward the close the stringency again increased, and full rates are now paid in all parts of the country. The banks are forced to be cautious, while at the note-brokers capital commands nearly double the legal rates. A few of the most desperate class of borrowers for railroad companies are pressing their bonds upon the public; but most of the projected roads, not approaching completion, will be obliged to postpone their operations to a period when the money market will be more compliant. There appears now to be little prospect of a general decline in rates of interest during the current year. There will doubtless be times of partial relaxation, but the uses for capital are so numerous, and the causes for disquiet so general, that lenders will be enabled to exact their own terms.

The prospect for the Fall trade is less encouraging than at the date of our last; but we can see no reason to apprehend any disasters to our mercantile interests. The country may be affected to some extent by the stoppage of payment upon many works of internal improvement, but the farmers have had a season for profits without a precedent in the previous eight years, and their consumption of merchandise will not be materially diminished. The supply of foreign goods has been very large, and much of it must find its way into the channels of distribution at a very low price; but if there is an active trade at any price, our merchants will have no right to complain.

Manufacturers are still actively engaged, but with very unequal success. Most of the cotton spinners have made money; and if any have not done so, it has been the fault of their own mismanagement, and not of the public markets. The new improvements in machinery of course give the advantage to those mills of later construction, other things being equal; and many of the older establishments, which have not kept up with the spirit of the age, cannot compete with their more enterprising neighbors. The joint-stock principle is not favorable to cheap production. Except in cases where a heavy outlay is involved, beyond the compass of private capital, any enterprise is always more successful under private management than in the hands of a corporate company or joint-stock association.

Hitherto the individual adventurers in this field have been without means to compete with their more wealthy rivals; but whenever a manufacturer can combine in his own person a knowledge of the business and the requisite capital, his chances of success are greatly increased. The woolen manufacturers have met with less encouragement. The broadcloth looms are still to a great extent at work upon foreign wool, or cotton warps, and their fabrics find a dull market. Fancy cassimeres are in large stock, and only the choice of styles are selling at a profit. Blankets are offered at a decline of 10 a 15 per cent upon the prices of the previous season.

The erection of buildings, which received a check from the high prices of both labor and materials, has been more extensively prosecuted during the current month, contractors having made some concessions from the previous extreme rates. There is, however, in most of our principal cities, less encouragement given to expensive structures for any purpose.

We do not perceive such extensive preparations for Summer travel as were generally anticipated, and we fear many of our railroad companies will find their receipts from this source considerably short of their estimates. One reason of this has been the constant succession of accidents, more or less serious, which produce a far more important effect upon the aggregate of travel than generally supposed. The migratory crowd are easily diverted from established routes of travel, and a long chapter of accidents, of which a verse is served up in every morning's newspaper, has a great effect upon the weak nerves of the votaries of pleasure. The heavy verdicts obtained against the responsible corporations are not as much in the way of a good dividend as the cause itself, which checks the current of travel.

The community were somewhat startled during the early part of the month by a report of something wrong in the management of the Parker Vein Coal Company; soon after which the company made an assignment, and various legal proceedings were instituted by interested parties with a view of securing their several claims. It appears to be generally conceded that the amount of stock issued, if not beyond legal limits, was much greater than innocent stockholders supposed, and there is about the whole affair an odor of fraud which must be very annoying to the managers, if they have not actually transgressed. This matter has brought up the whole subject of issues of stock, and various checks have been proposed to prevent the use of fraudulent certificates. Officers of corporations, who are responsible for the issue of stocks, should have a book of certificates, regularly numbered, with a wide margin, and should never sign one of the documents after it has been detached by a subordinate. If some check upon the superior officer is deemed necessary, an Act of Assembly might be passed, requiring the registration of all stock certificates, and thus limit such issues to the legal amount. The present loose way of managing such matters is a temptation to fraud, and some reformation is sorely needed.

The banks throughout the country are discounting with more caution, and the stock of precious metals on deposit in these institutions is gradually decreasing. At New York, the average of specie in each weekly statement since August 13, 1853, has but once been below \$10,000,000, until the 10th of June, when it was only \$9,617,180; it has once more recovered, but has not yet returned to the average of the last few months:—

WEEKLY AVERAGES OF NEW YORK CITY BANKS.

Week ending.	Average amount of Loans and Discounts.	Average amount of Specie.	Average amount of Circulation.	Average amount of Deposits.
January 7, 1854	90,133,887	11,506,124	9,075,926	60,835,362
January 14	90,010,012	11,894,453	8,668,344	58,396,956
January 21	90,068,788	11,455,156	8,605,235	59,071,252
January 28	89,759,465	11,117,958	8,642,677	58,239,577
February 4	90,549,577	11,634,653	8,996,657	61,208,466
February 11	91,434,022	11,872,126	8,994,083	61,024,817
February 18	92,698,085	11,742,384	8,954,464	61,826,669
February 25	93,529,716	11,212,693	8,929,314	61,293,645
March 4	94,558,421	10,560,400	9,209,830	61,975,675
March 11	94,279,994	9,832,483	9,137,555	60,226,583
March 18	93,418,929	10,018,456	9,255,781	61,098,605
March 25	92,972,711	10,132,246	9,209,406	59,168,178
April 1	92,825,024	10,264,009	9,395,820	59,478,149
April 8	92,551,808	10,188,141	9,713,215	60,286,839
April 15	91,636,274	11,044,044	9,533,993	60,325,087
April 22	90,376,340	10,526,976	9,353,854	59,225,905
April 29	90,243,049	10,951,153	9,377,687	59,719,381
May 6	90,739,720	11,437,039	9,823,007	63,855,509
May 13	90,245,927	12,382,068	9,507,796	64,203,671
May 20	90,886,726	12,118,043	9,480,018	63,882,661
May 27	90,981,974	10,981,531	9,284,807	61,623,670
June 3	91,916,710	10,281,969	9,381,714	71,702,290
June 10	91,015,171	9,617,180	9,307,889	72,495,858
June 17	90,063,573	10,013,157	9,144,284	71,959,105

The Boston banks have now commenced weekly statements, and the following will show their condition at the date of the last report which has come to hand:—

WEEKLY BANK REPORT.

AVERAGE CONDITION OF THE THIRTY-SIX BANKS IN BOSTON WEEK ENDING

	June 19.	June 12.
Capital	\$30,496,708	\$30,412,750
Loans and discounts	49,110,473	48,586,003
Specie	2,929,756	2,933,521
Deposits	13,298,837	13,129,602
Circulation	8,221,337	8,406,280
Due from banks	9,180,038	9,624,542
Due to banks	6,596,824	6,753,405

We annex the following statement of the comparative receipts for May on a number of the leading railroads of the country, which generally show an increase over the corresponding month of last year:—

	1854.	1853.
Hudson River Railroad	\$123,271	\$93,701
Cleveland and Toledo	55,500	27,000
Chicago and Rock Island	109,279	New.
Milwaukee and Mississippi	42,000	13,967
Ohio and Pennsylvania	81,238	47,870
Michigan Central	200,020	135,202
Michigan Southern	211,684	148,325
Cleveland and Pittsburgh	51,283	35,368
Pennsylvania Railroad	297,137	195,072
Baltimore and Ohio Railroad	266,514	204,950
New York Central	511,888	362,997
New York and New Haven	71,906	62,674
Erie Railroad	439,809	350,142
Louisville and Frankfort	20,408	16,706

The following will show the deposits and coinage at the Philadelphia and New Orleans mints for the month of May:—

DEPOSITS FOR MAY.

	Gold.		Silver.	Total.
	From California.	Other sources.		
Philadelphia Mint.....	\$3,400,000	\$196,000	\$134,000	\$3,730,000
New Orleans Mint.....	116,809	7,521	85,866	210,196
Total deposits.....	\$3,516,809	\$203,521	\$219,866	\$3,940,196

GOLD COINAGE.

	NEW ORLEANS.		PHILADELPHIA.	
	Pieces.	Value.	Pieces.	Value.
Eagles	15,500	\$155,000	.....	.....
Three-dollar pieces.....	.....	.....	103,828	\$311,484
Double eagles .....	.....	.....	.....	.....
Half eagles	5,000	25,000	.....	.....
Quarter eagles.....	.....	.....	17,092	42,730
Dollars .....	.....	.....	174,616	174,616
Bars .....	.....	.....	.....	2,741,500
Total gold coinage	20,500	\$180,000	295,536	\$3,270,330

SILVER COINAGE.

Half dollars	800,000	\$400,000	882,000	\$441,000
Quarter dollars .....	.....	.....	692,000	173,000
Half dimes.....	.....	.....	1,760,000	88,000
Three-cent pieces .....	.....	.....	270,000	8,100
Total silver coinage.....	800,000	\$400,000	3,604,000	\$710,100

COPPER COINAGE.

Cents .....	.....	.....	817,596	\$8,175
Total coinage.....	820,500	\$580,000	4,717,132	\$3,988,606

The mines and washings in California are now being worked with renewed diligence, and the gold production during the latter months of the year will probably show a large increase upon last year.

The constant downward tendency in the prices of most descriptions of goods in Europe, with the falling off in the demand there, owing to the confused state of political affairs, which has nearly paralyzed legitimate trade, have produced an increased current of foreign merchandise toward our ports, and the imports of May are larger than previously anticipated. The total at New York is \$2,640,938 greater than for the same month of last year; \$9,461,446 greater than for May, 1852; and \$6,193,273 greater than for May, 1851. The receipts of free goods (tea and coffee) have largely increased, while the stock thrown into warehouse is also greater. We annex a comparison for each of the last four years:—

IMPORTS OF FOREIGN MERCHANDISE AT NEW YORK FOR THE MONTH OF MAY.

	1851.	1852.	1853.	1854.
Entered for consumption.....	\$8,942,711	\$6,096,996	\$10,255,071	\$12,004,338
Entered for warehousing	1,148,428	453,109	2,590,000	3,151,964
Free goods	785,326	789,046	1,487,248	1,858,954
Specie and bullion.....	111,443	380,584	207,924	165,925
Total entered at the port	\$10,987,908	\$7,719,735	\$14,540,243	\$17,181,181
Withdrawn from warehouse.....	858,519	1,380,371	1,049,550	1,588,652

The withdrawals from warehouse, it will be seen, are \$1,563,312 less than the total entered for warehousing, showing that the goods were not brought out because they were needed; and the sales of such as have been offered by auction have proved that they were crowded upon an unwilling market. It was generally expected that the imports for the first half of the current year would show a very material decline, in comparison with the heavy totals for the same period of last year; but this expectation has not been realized. There was an important decline during the months of February and March, but the total from January 1st to May 31st is a little more than equal to the imports for the corresponding five months of 1852, the excess amounting to \$649,870. The difference is greater when compared with previous years, the total for the last months being \$28,489,512 greater than for the same period of 1852, and \$18,567,111 greater than for the same period of 1851, as will appear from the following comparison:—

IMPORTS OF FOREIGN MERCHANDISE AT NEW YORK FOR FIVE MONTHS FROM JAN. 1ST.

	1851.	1852.	1853.	1854.
Entered for consumption.....	\$50,290,562	\$39,418,731	\$63,242,647	\$61,971,984
Entered for warehousing.....	6,420,842	4,387,027	8,496,277	10,721,104
Free goods.....	4,468,928	6,281,838	7,851,707	7,083,241
Specie and bullion.....	1,278,099	1,448,434	785,041	1,249,213
Total entered at the port.....	\$62,458,431	\$51,536,030	\$80,376,672	\$81,025,542
Withdrawn from warehouse. ...	4,994,708	7,615,298	5,343,258	9,285,372

The increased receipts of foreign merchandise during the month of May have not been composed of dry goods, although the total of this description is nearly half a million of dollars in advance of the corresponding total of last year. The increase in receipts of dry goods has been altogether in stock entered for warehousing, the total which has passed into consumption being actually less than for May, 1852. We annex a comparison for the month of May and since January 1st in each of the last four years:—

IMPORTS OF FOREIGN DRY GOODS AT NEW YORK FOR THE MONTH OF MAY.

ENTERED FOR CONSUMPTION.

	1851.	1852.	1853.	1854.
Manufactures of wool.....	\$586,350	\$397,305	\$1,026,451	\$1,023,867
Manufactures of cotton.....	237,349	277,351	380,308	738,932
Manufactures of silk.....	918,399	518,368	1,500,353	1,026,381
Manufactures of flax.....	268,986	263,607	357,649	360,087
Miscellaneous dry goods.....	124,013	246,796	241,651	129,218
Total.....	\$2,135,097	\$1,703,427	\$3,506,417	\$3,278,485

WITHDRAWN FROM WAREHOUSE.

	1851.	1852.	1853.	1854.
Manufactures of wool.....	\$76,800	\$70,584	\$83,567	\$153,521
Manufactures of cotton.....	52,646	37,902	29,007	87,123
Manufactures of silk.....	49,343	138,717	79,177	100,182
Manufactures of flax.....	28,980	40,355	9,390	28,724
Miscellaneous dry goods.....	28,615	26,705	9,597	12,511
Total withdrawn.....	\$236,384	\$314,263	\$210,738	\$382,061
Add entered for consumption....	2,135,097	1,703,427	3,506,417	3,278,485
Total thrown upon the market..	\$2,371,481	\$2,017,690	\$3,717,155	\$3,660,546

ENTERED FOR WAREHOUSING.

	1851.	1852.	1853.	1854.
Manufactures of wool	\$107,244	\$109,736	\$178,918	\$542,867
Manufactures of cotton	92,118	39,519	68,967	194,201
Manufactures of silk	111,418	111,309	107,694	311,391
Manufactures of flax	59,082	26,580	48,740	82,347
Miscellaneous dry goods.....	9,777	19,817	26,459	46,222
Total.....	\$379,639	\$306,961	\$430,778	\$1,177,028
Add entered for consumption.....	2,135,097	1,703,427	3,506,417	3,278,485
Total entered at the port	\$2,514,736	\$2,010,388	\$3,937,195	\$4,455,513

IMPORTS OF FOREIGN DRY GOODS AT NEW YORK FOR FIVE MONTHS, FROM JANUARY 1ST.

ENTERED FOR CONSUMPTION.

	1851.	1852.	1853.	1854.
Manufactures of wool	\$5,513,126	\$4,588,869	\$8,495,117	\$7,626,547
Manufactures of cotton	5,355,438	4,295,267	6,718,790	7,948,364
Manufactures of silk	10,296,506	8,156,557	13,395,311	12,149,433
Manufactures of flax.....	3,291,168	2,643,389	3,799,591	3,436,496
Miscellaneous dry goods	1,742,901	1,853,522	2,539,874	2,538,771
Total.....	\$26,199,139	\$21,442,604	\$34,948,683	\$33,699,611

WITHDRAWN FROM WAREHOUSE.

	1851.	1852.	1853.	1854.
Manufactures of wool	\$474,386	\$779,310	\$498,791	\$1,155,141
Manufactures of cotton	822,057	1,004,230	554,598	1,503,532
Manufactures of silk.....	520,655	1,163,650	671,656	1,308,667
Manufactures of flax	332,322	566,149	117,230	501,445
Miscellaneous dry goods.....	220,667	219,324	201,753	190,676
Total	\$2,370,087	\$3,732,963	\$2,044,033	\$4,659,461
Add entered for consumption....	26,199,139	21,542,604	34,948,683	33,699,611
Total thrown on the market.	\$28,569,226	\$25,275,567	\$36,992,716	\$38,359,072

ENTERED FOR WAREHOUSING.

	1851.	1852.	1853.	1854.
Manufactures of wool	\$589,058	\$683,435	\$767,202	\$1,603,180
Manufactures of cotton	763,854	536,073	610,254	1,378,597
Manufactures of silk	861,037	1,434,510	826,778	1,519,176
Manufactures of flax.....	322,561	187,772	160,294	438,203
Miscellaneous dry goods	190,080	187,937	204,659	153,182
Total.....	\$2,726,590	\$3,029,757	\$2,569,187	\$5,092,338
Add entered for consumption....	26,199,139	21,542,604	34,948,683	33,699,611
Total entered at the port	\$28,925,729	\$24,572,361	\$37,517,870	\$38,791,949

From the above it will be seen that the total imports at New York of foreign dry goods since January 1st, are \$1,274,079 greater than for the corresponding five months of last year; \$14,219,588 greater than for the same period of 1852; and \$9,266,220 greater than for the same period of 1851.

The Revenue of the country is still in excess of the expenditures, but the total receipts at New York, since January 1st, are not quite as large as for the same time last year, notwithstanding the slight increase in the dutiable imports, as will be seen by the following comparison:—

CASH DUTIES RECEIVED AT NEW YORK FOR FIVE MONTHS FROM JANUARY 1ST.

	1851.	1852.	1853.	1854.
1st three months.	\$9,395,257 30	\$7,617,887 72	\$11,125,501 47	\$10,873,699 31
In April	2,547,582 52	2,447,634 07	3,348,252 14	3,168,490 21
In May	2,544,640 16	1,952,110 86	2,852,853 56	3,243,164 41
Total.....	14,487,479 98	12,017,632 65	17,326,606 17	17,385,353 93

The receipts for duties at the Custom House in Philadelphia, for the month of May, amount to \$328,422 95, which is a slight increase over the corresponding month last year. The following is a comparative statement of the receipts for five months in the present and past two years:—

	1852.	1853.	1854.
January	\$315,877 55	\$267,010 25	\$539,292 76
February	489,000 00	623,642 75	525,093 25
March.....	367,400 70	427,620 33	316,333 70
April.....	303,922 53	264,753 55	379,471 46
May	257,756 70	315,817 77	328,492 95
Total.....	\$1,733,937 48	\$1,898,844 65	\$2,088,684 12

The exports from New York to foreign ports, for the month of May, (exclusive of specie,) are \$1,402,131 greater than for the same month of last year, \$1,396,598 greater than for the corresponding month of 1852, and \$1,422,875 greater than for the same period of 1851.

EXPORTS FROM NEW YORK TO FOREIGN PORTS FOR THE MONTH OF MAY.

	1851.	1852.	1853.	1854.
Domestic produce.....	\$4,402,052	\$4,249,924	\$4,165,954	\$5,824,427
Foreign merchandise (free).....	113,371	106,818	243,598	132,449
Foreign merchandise (dutiable)...	361,015	545,973	487,630	342,437
Specie	4,506,135	1,834,893	2,162,467	3,651,626
Total exports	\$9,382,573	\$6,737,608	\$7,059,649	\$9,950,939
Total, exclusive of specie	4,876,438	4,902,715	4,897,182	6,299,313

The exports of specie are larger than for the same month in each of the last two years, but not as large as for May 1851. The reshipments of foreign produce have been on a more limited scale. We also annex a summary statement of the exports of the same port since January 1st.

EXPORTS FROM NEW YORK TO FOREIGN PORTS FOR FIVE MONTHS, FROM JANUARY 1ST.

	1851.	1852.	1853.	1854.
Domestic produce.....	\$18,678,550	\$18,579,452	\$20,365,061	\$26,671,057
Foreign merchandise (free).....	314,910	395,719	587,809	584,315
Foreign merchandise (dutiable)...	1,716,452	1,936,981	1,646,937	1,828,023
Specie	12,631,148	9,067,654	5,390,700	11,017,684
Total exports	\$33,341,060	\$29,979,806	\$27,990,507	\$40,101,079
Total, exclusive of specie	20,709,912	20,912,152	22,599,807	29,083,395

It will thus be seen that the exports from New York, exclusive of specie, since January 1st, are \$6,483,588 in excess of the total for the same time in 1853, \$3,171,243 in excess of the first five months of 1852, and \$8,373,483 in excess of the corresponding total in 1851.

It will be interesting in this connection to look at the shipments of some of the leading articles of domestic produce, and we annex a comparative total from January 1st to June 17th, in each of the last two years:—

EXPORTS FROM NEW YORK TO FOREIGN PORTS OF CERTAIN LEADING ARTICLES OF
DOMESTIC PRODUCE, FROM JANUARY 1ST TO JUNE 17TH:—

	1853.	1854.		1853.	1854.
Ashes—pots.....bbls	4,459	3,248	Naval stores....bbls	183,619	298,268
pearls.....	453	330	Oils—whale....galls	199,376	105,291
Beeswax.....lbs	117,825	109,915	sperm.....	452,702	219,782
<i>Breadstuffs—</i>			lard.....	11,791	165,245
Wheat flour...bbls	605,696	670,972	linseed.....	4,315	1,584
Rye flour.....	1,178	8,538			
Corn meal.....	22,269	43,315	<i>Provisions—</i>		
Wheat.....bush.	1,194,119	1,163,553	Pork.....bbls	36,113	42,182
Rye.....		315,158	Beef.....	30,365	34,893
Oats.....	23,925	11,503	Cut meats....lbs.	4,632,995	10,791,452
Barley.....			Butter.....	813,356	1,062,330
Corn.....	562,790	2,055,655	Cheese.....	1,956,017	7,513,293
Candles—mold...boxes	28,120	29,349	Lard.....	3,900,663	7,286,097
sperm.....	2,623	3,259	Rice.....tocs	7,172	15,409
Coal.....tons	17,117	14,378	Tallow.....lbs	1,063,688	1,733,657
Cotton.....bales	141,536	142,091	Tobacco, crude...pkgs	10,478	19,636
Hay.....	1,900	1,689	Do., manufactured.lbs	2,857,413	1,315,139
Hops.....	112	475	Whalebone.....	1,850,323	750,644

The most noticeable difference in the above is in the shipments of corn and provisions, the increase in some cases being three or four hundred per cent. There would have been a large increase in the shipments of wheat, but for the scarcity of this grain, the supply reaching the seaboard not having been sufficient for local millers, and the price of prime white wheat in the city of New York, has been \$2 50 and upwards. The month of June will show a less comparative increase, the supply of domestic produce at the seaboard, with a few exceptions, not being sufficiently large to bring the prices within the limits of orders for shipment. Much interest will be felt in the official statement of the imports and exports for the fiscal year ending June 30th, but it will be some time before that can be published. Enough is already known to leave no doubt of the fact, that the total of each will be larger than ever before known in the history of the country. It is a singular fact, that notwithstanding the very large increase in the receipts of foreign goods at New York for the last eleven months, the increase in the exports, exclusive of specie, nearly balances them, while including the specie, the exports are far greater. This will fully appear in the following comparison:—

IMPORTS AND EXPORTS OF MERCHANDISE AND PRODUCE AT NEW YORK, TOGETHER WITH THE
EXPORTS OF SPECIE, FROM JANUARY 1ST TO MAY 31ST.

During 11 months of—	Imports of Merchandise.	Exports of Produce and Merchandise.	Exports of Specie.
1853-4	\$174,508,437	\$70,059,290	\$29,116,058
1852-3	147,624,579	43,940,546	17,862,946
Increase	26,883,858	26,118,744	11,253,112

The same increase in either imports or exports, will not be found at other ports, but it is well enough to bear in mind that while over two-thirds of all the foreign imports of the country are received at New York, only about one-third of the foreign exports clear from thence, so that the total exports from the United States for the fiscal year ending June 30th, may, and probably will, nearly or quite equal the imports, presenting the most important commercial summary ever exhibited to the country.

THE NEW YORK COTTON MARKET

FOR THE MONTH ENDING JUNE 19.

PREPARED FOR THE MERCHANTS' MAGAZINE BY UHLHORN & FREDERICKSON, BROKERS,
148 PEARL STREET, NEW YORK.

The month under review has been an unsatisfactory one for those engaged in cotton. To the exporter the returns have been disastrous, and to the receiver here the range of prices has been much below the cost of the article. In accordance with orders from the South, backed by the views of holders here, large quantities of cotton have been shipped from first hands to Europe, in anticipation of meeting a better market there than could be calculated on here. The amount taken somewhat relieved holders, and towards the close of the month, under more favorable Liverpool advices, the market closed with an upward tendency.

For the week ending May 22d, our market was without tone, and prices extremely irregular; the transactions were at a decline of $\frac{1}{4}$ c. on quotations of the previous week, spinners and shippers being the principal purchasers. At the close of the week more steadiness was observed, and the following quotations were paid for strict classifications:—

Export	bales.	5,600	Speculation	bales.	797
Home use		2,964	In transitu		600
Total sales during the week					9,961

PRICES ADOPTED MAY 22D FOR THE FOLLOWING QUALITIES:—

	Upland.	Florida.	Mobile.	N. O. & Texas.
Ordinary	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$
Middling	9	9 $\frac{1}{8}$	9 $\frac{1}{4}$	9 $\frac{3}{8}$
Middling fair	10 $\frac{1}{4}$	10 $\frac{1}{4}$	10 $\frac{1}{2}$	11 $\frac{1}{4}$
Fair	11	11 $\frac{1}{4}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$

The week ensuing the demand was kept up by large parcels being either withdrawn or shipped on owners' accounts. Our own manufacturers, (who are quite bare of stocks,) bought freely; the transactions, however, were not sufficient to advance prices materially, and holders met the demand without advancing rates. The week closed quiet but firm at the annexed quotations:—

Export	bales.	5,004	Speculation	bales.	1,411
Home use		2,445	In transitu		119
Total sales during the week					8,979

PRICES ADOPTED MAY 29TH FOR THE FOLLOWING QUALITIES:—

	Upland.	Florida.	Mobile.	N. O. & Texas.
Ordinary	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$
Middling	9 $\frac{1}{8}$	9 $\frac{1}{8}$	9 $\frac{1}{4}$	9 $\frac{1}{4}$
Middling fair	10 $\frac{1}{4}$	10 $\frac{1}{4}$	10 $\frac{3}{4}$	11 $\frac{1}{4}$
Fair	11	11 $\frac{1}{4}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$

This week opened with but little inquiry, and large offerings gave buyers the advantage in price. The sales were small, and confined to lots pressing on the market. A decline in freights and an advance in exchange offered no inducements to exporters, and the transactions of the week were at very irregular prices, the market closing heavily, and quotations almost nominal. The total sales for the week we estimate at 6,500 bales, there being no other mode to arrive at the correct result, as the following resolutions, adopted by the New York Cotton Brokers' Association, at their meeting held May 29th, leave us without the means of acquiring the usual official report:—

Whereas certain members of our board have withdrawn, we are now unable to give an accurate report of the daily transactions; therefore

Resolved, That hereafter the official daily report of sales be discontinued; and

Resolved, That the standard of classification be maintained, and that we meet every Monday morning to determine quotations.

The necessity of the above action is, in a measure, to be ascribed to the stringent rules governing the members of the association, they being compelled, by a fine of five dollars, to report their daily transactions, even when, as was often the case, such a course would conflict with the interest of their buyers. The association seemed formed to give "aid and comfort" to sellers and ship-owners only. The articles of association will have to be materially altered before it will have upon its roll the names of all the cotton brokers of the city.

Estimated sales during the past week, 6,500 bales.

PRICES ADOPTED JUNE 5TH FOR THE FOLLOWING VARIETIES:—

	Upland.	Florida.	Mobile.	N. O. & Texas.
Ordinary	7½	7½	7½	7½
Middling	8½	8½	9	9½
Middling fair	10½	10½	10½	10½
Fair	10½	11	11½	12

For the week ending June 12th but little interest was felt in cotton. The foreign advices continued of a gloomy character, and the future prospect for a return of an investment was too uncertain for consideration. And, as is always the case when the market declines in Liverpool, the standard of classification is lowered, and sales of "good middling" and upwards bring but a *middling price*. In fact, a stricter adherence to grade is maintained in New York than in Liverpool; this change of classification is now so common an occurrence at the latter place, that the usual reliance is not placed in their reports, either in an advancing or a declining market.

The sales for the week are estimated at 5,500 bales, and do *not* include partial sales or shipments from first hands—market closing without spirit at the annexed quotations:—

PRICES ADOPTED JUNE 12TH FOR THE FOLLOWING QUALITIES:—

	Upland.	Florida.	Mobile.	N. O. & Texas.
Ordinary	7	7	7	7
Middling	8½	8½	9	9½
Middling fair	10	10½	10½	10½
Fair	10½	10½	11	11½

The transactions for the week ending June 19th were large and at advancing prices. The slightly improved tone of the Liverpool market, as advised per Pacific and Arabia, gave an impetus to the trade and increased value to the article to the extent of fully ¾ c. a ½ c. per lb. on all grades. For France and the continent the business has been extensive, including some large parcels from first hands. Our stock is now, from the above causes, much reduced, and does not exceed 45,000 bales unsold. We estimate the sales at 12,000 bales, market closing firm at the annexed quotations for not an over strict classification:—

PRICES ADOPTED JUNE 19TH FOR THE FOLLOWING QUALITIES:—

	Upland.	Florida.	Mobile.	N. O. & Texas.
Ordinary	7½	7½	7½	7½
Middling	9½	9½	9½	9½
Middling fair	10½	10½	10½	11
Fair	10½	11	11½	12

GROWING CROP. The weather for the growing crop has been all that could be desired for the past six weeks. A good stand has been obtained, and the damage by frosts in the early part of the spring in a great measure remedied.

JOURNAL OF BANKING, CURRENCY, AND FINANCE.

PUBLIC DEBT OF THE UNITED STATES.

The following statement of the Register of the Treasury shows the date of the acts of Congress authorizing the issue of the several loans of the United States, the Texas indemnity, when redeemable, the rate of interest, the amount redeemed from the 4th March, 1853, to the 6th May, 1854, inclusive, the premium paid, the amount outstanding, the amount purchased of the debt of the corporate cities of the District of Columbia, the premium paid, the amount outstanding, the Treasury notes outstanding, and interest due and unpaid upon the old funded and unfunded debt:—

Loan.	Authorized.	Redeemable.	Int.	Redeemed.	Prem. paid.	Outstanding.
1842	Apr. 15, 1842	Dec. 31, 1862	6 p. c.	\$2,427,785 49	\$384,436 45	\$5,765,900 54
1843	M'ch 3, 1843	July 1, 1853	5 "	3,949,031 35	.....	28,900 00
1846	July 22, 1846	Nov. 12, 1856	6 "	1,943,439 71	145,133 70	3,052,700 00
1847	Jan. 28, 1847	Jan. 1, 1868	6 "	7,199,250 00	1,509,349 41	18,130,300 00
1848	M'ch 31, 1848	July 1, 1868	6 "	2,361,408 20	471,193 37	13,422,841 80
Texas indemn'ly.	Sept. 9, 1850	Dec. 31, 1864	5 "	320,000 00	35,200 00	4,680,000 00
Do. issued.....	Sept. 9, 1850	Dec. 31, 1864	5 "	.....	.....	5,000,000 00
				18,100,914 75	2,545,312 93	50,080,642 34
Debt of the cities of the District of Columbia.....				712,800 00	112,590 00	7,200 00
Treasury notes outstanding .....				.....	.....	113,911 64
Interest on old funded and unfunded debt.....				.....	.....	114,118 54
Total.....				18,813,714 75	2,657,902 93	50,315,872 52

CONDITION OF THE BANKS OF OHIO IN MAY, 1854.

In the *Merchants' Magazine* for May, 1854, (vol. xxx., pages 605-607,) we gave a statement of the condition of each bank in the State of Ohio, as taken from the returns made to the Auditor of State—furnished to our hands by that officer—on the first Monday of February, 1854. We now give a summary view of the condition of the banks of that State on the first Monday of May, 1854:—

INDEPENDENT BANKS—RESOURCES.

Notes and bills discounted	\$2,241,671 80
Specie on hand	193,245 97
Notes of other banks, &c.	215,614 33
Due from other banks and bankers	146,824 55
Eastern deposits	226,958 07
Checks and other cash items	50,266 65
Bonds deposited with State Treasurer	1,095,048 54
Real estate and personal property	118,396 70
Total resources of Independent Banks.....	4,586,922 80

INDEPENDENT BANKS—LIABILITIES.

Capital stock	\$719,730 00
Circulation	1,004,857 00
Safety Fund stock	1,178,393 67
Due to banks and bankers	210,738 20
Due to individual depositors	1,241,011 97
Surplus of Contingent Fund and undivided profits	65,908 15
Bills payable and time drafts	77,561 21
Discount, interest, &c.	34,254 48
Dividends unpaid	20,308 75
Other liabilities	34,159 37
Total liabilities of Independent Banks.....	4,586,922 80

OHIO BRANCHES OF STATE BANK—RESOURCES.

Notes and bills discounted	\$11,160,213 65
Specie on hand	1,651,278 25
Notes of other banks, &c.	509,615 89
Due from other banks and bankers	518,543 51
Eastern deposits	1,255,299 17
Checks and other cash items	59,267 45
Safety Fund	849,609 80
Real estate and personal property	159,794 09
Other resources	343,151 00
Total resources of Ohio Branches of State Bank	16,506,673 81

OHIO BRANCHES OF STATE BANK—LIABILITIES.

Capital stock	\$4,254,175 00
Circulation	7,311,225 00
Safety Fund at credit of Board of Control	43,284 65
Due to banks and bankers	373,719 79
Due to individual depositors	3,599,261 04
Surplus of Contingent Fund and undivided profits	545,050 33
Bills payable and time drafts	154,312 26
Discount, interest, &c.	14,145 72
Dividends unpaid	125,475 75
Other liabilities	86,160 27
Total liabilities	16,506,773 81

OLD BANKS—RESOURCES.

Notes and bills discounted	\$2,514,198 29
Specie on hand	99,010 39
Notes of other banks, &c.	166,155 00
Due from other banks and bankers	45,152 82
Eastern deposits	164,402 51
Real estate and personal property	26,502 21
Other resources	129,569 35
Total resources	3,144,990 57

OLD BANKS—LIABILITIES.

Capital stock	\$711,000 00
Circulation	398,555 00
Due to banks and bankers	1,002,596 99
Due to individual depositors	893,682 90
Surplus of Contingent Fund and undivided profits	73,333 40
Bills payable and time drafts	745 00
Other liabilities	65,077 28
Total liabilities	3,144,990 57

FREE BANKS—RESOURCES.

Notes and bills discounted	\$1,366,738 91
Specie on hand	133,634 92
Notes of other banks, &c.	225,613 50
Due from other banks and bankers	485,860 51
Eastern deposits	205,460 00
Checks and other cash items	60,839 02
Bonds deposited with Auditor of State	930,769 99
Real and personal property	28,138 47
Other resources	34,603 56
Total resources of Free Banks	3,471,661 88

The number of banks in Ohio, according to the report of the Auditor, is 63; of which 10 are Independent Banks, 38 Ohio Branches of State Bank, 2 Old Banks, and 13 Free Banks. The total capital of all the banks in Ohio is \$6,520,195; the specie in banks on the first Monday in May, 1854, amounted to \$2,077,169; the total circulation at that time was \$9,507,052; and the total resources, \$27,760,349.

SPECIE IN THE UNITED STATES IN 1820, 1849, AND 1854.

The statistics lately collected by the Secretary of the Treasury present some interesting facts. The following the statement of Mr. Crawford:—

The amount of specie in the country in 1820 was only.....	\$37,000,000
Product of the mines from that date to 1849.....	37,705,250
Imports of specie from 1820 to 1849 amounted to....	\$252,169,841
Exported during the same time.....	180,462,406

Leaving an excess of imports over exports of specie to 1849 of.....	71,707,435
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In the country on the 1st January, 1849.....	122,412,685
Supply from the mines from 1849 to 1854.....	194,363,117
Imported in same time.....	26,508,774

Total.....	343,284,576
Exported from the country between January, 1849, and Jan., 1854...	112,695,574

Specie in the country in January, 1854.....	230,589,502
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Being \$108,000,000 more in the country now than in 1849. But there are large amounts of money brought into the country that cannot appear in statistical tables. It is estimated that over \$30,000,000 in coin have been brought in by immigrants since 1840. Of the \$230,000,000 in specie in the country now, a little less than sixty millions is in the banks, a little more than twenty-seven millions in the National Treasury, and the balance is in circulation, or hoarded up by private owners. The gold and silver in circulation, then, is over one hundred and forty-three millions now, and the circulation of bank paper is over one hundred and ninety-four million dollars. Together they make over three hundred and thirty-eight million dollars as the active money of the country at the present time.

PRODUCT OF THE PRECIOUS METALS IN 1853.

To FREEMAN HUNT, *Editor of the Merchants' Magazine*:—

DEAR SIR:—Inclosed you will find a statement of the production of the precious metals throughout the world in 1853, submitted for insertion in the columns of your excellent journal. Yours truly,

DAVID M. BALFOUR.

PRODUCT OF THE PRECIOUS METALS THROUGHOUT THE WORLD IN 1853.

	Gold.	Silver.	Total.
America.....	\$109,156,748	\$29,807,456	\$138,964,204
Australia.....	96,000,000	.....	96,000,000
Europe.....	22,138,914	8,648,937	30,787,851
Asia.....	19,847,658	5,197,218	25,044,876
Africa.....	4,000,000	.....	4,000,000
Total.....	\$251,148,320	\$43,653,611	\$294,796,931

The following statement will exhibit the annual product of the precious metals at different periods prior to above:—

1492.....	\$250,000	1800.....	\$52,529,867
1500.....	3,000,000	1842.....	69,987,681
1600.....	11,000,000	1848.....	86,661,060
1700.....	23,000,000	1851.....	180,173,873

CONDITION OF THE BANKS OF ILLINOIS.

The number of banks in Illinois is twenty-nine. The Hon. THOMAS H. CAMPBELL, Auditor of the State, furnishes a statement of their condition on the 3d of April, 1854, as follows:—

RESOURCES.

Stock deposited	\$2,475,741 62
Real estate owned by banks.....	31,158 22
Notes of other banks on hand.....	385,339 45
Debts other than loans and discounts	1,368,203 68
Specie on hand	565,152 04
Loans and discounts.....	316,841 76
Deposited with other banks	878,612 58
Expense account.....	24,874 97
Checks, drafts, and other cash items	63,892 41
Total resources	6,365,978 86

LIABILITIES.

Capital stock paid in	2,513,790 17
Debts owing other than for deposits	294,034 50
Due to depositors	1,286,102 25
Circulation	2,283,526 00
Profit and loss account	71,787 00
Total liabilities	6,448,239 92

CONDITION OF THE BANKS.

While there are causes that affect the operation of the banks throughout the country, there are others the force of which is felt most in particular districts. As a general rule, expansions commence in the East, and proceed thence South and West, and contractions follow the same law.

The more rapid the development of the natural resources of a region, the greater are the *apparent* benefits resulting from a bank expansion, and the greater are the *real* evils that result from a bank contraction. Hence the effects of bank expansions and bank contractions are felt much more sensibly in the Mississippi valley than in the Atlantic States.

A commercial or a manufacturing population recovers from the effects of a bank revulsion much more easily than does any one that is purely agricultural.

After the terrible revulsion of 1842-43, the banks of Massachusetts were the first to right themselves. By July, 1844, their current credits (circulation and deposits) were swelled to 24,000,000, which was even 6,000,000 more than it had in October, 1837. Since then the banks in Massachusetts have been gradually extending their operations, with occasional and temporary intervals of contraction.

The banks in the other New England States and in New York were the next to recover their position; but the banks in the great tier of grain growing States, extending from New Jersey to Missouri, cannot be said to have recovered their position till 1846-48, when a new demand for our breadstuffs sprung up in Europe.

The banks in the South and Southwest were still longer in recovering themselves. But a new demand for cotton sprung up, and then they began rapidly to extend their operations. In two years the banks of South Carolina more than doubled their circulation, increasing it from \$5,237,000, which it was in January, 1849, to \$11,770,000 in January, 1851. In Georgia the circulation was more than doubled in one year; it was \$4,118,000 in October, 1849, and \$9,818,000 in December, 1850. The Southwestern States still lagged behind; but between October, 1849, and January, 1851, the banks of Tennessee increased their issues from \$3,913,000 to \$6,814,000.

After all, this expansion did no more than bring the Southern and Southwestern States to a level with the New England and Middle States, even if it did that. They err greatly who suppose that paper money makes prices permanently high. It makes them occasionally unnaturally high; but in the revulsions that follow, prices are reduced so low and remain low for so long a time, that it is a question whether, on an average of years, prices are not lower with us than they would be if we had only a gold and silver circulating medium.

COMPARATIVE VIEW OF THE CONDITION OF THE BANKS IN DIFFERENT SECTIONS OF THE UNION IN 1850-1 AND 1853-4.

Sections.	Banks & branches.		Capital paid in.		Loans and discounts.		Stocks.		Real estate.	
	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.
Eastern States.....	313	397	\$66,299,185	\$84,556,433	\$108,504,955	\$149,143,789	\$191,777	\$883,501	\$1,912,134	\$2,015,838
Middle States.....	316	451	79,716,950	114,834,179	170,886,640	283,602,631	15,419,701	24,458,149	5,249,774	6,993,606
Southern States....	90	116	40,309,024	46,646,211	60,437,459	73,213,195	2,957,874	7,292,894	8,425,580	9,490,007
Southwestern States.	83	92	29,917,056	38,384,368	51,153,748	72,751,629	1,198,225	2,653,322	3,594,784	3,078,778
Western States.....	77	152	11,565,338	16,954,880	22,773,997	28,576,184	2,621,412	9,062,464	1,037,452	789,213
Total.....	879	1,208	227,807,553	301,376,071	413,756,799	607,287,428	22,388,989	44,350,330	20,219,724	22,367,472
	Other investments.		Due by other banks.		Notes of other banks.		Specie funds.		Specie.	
	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.
Eastern States....	\$409,496	\$757,883	\$9,661,775	\$13,032,448	\$5,238,147	\$7,336,184	\$105,900	\$202,204	\$4,663,774	\$6,570,360
Middle States.....	2,152,420	1,056,988	17,728,833	19,370,777	6,664,315	7,536,523	13,493,342	23,860,024	17,865,051	22,845,551
Southern States...	2,903,203	2,108,791	11,138,910	7,890,880	2,382,588	3,164,870	448,209	521,024	8,903,871	8,776,876
Southwestern States.	2,836,593	2,695,359	7,565,472	7,743,566	1,381,440	1,974,371	1,200,000	670,868	13,164,213	16,117,957
Western States....	634,260	222,403	4,623,025	7,469,414	1,529,593	2,647,318	93,655	325,133	4,074,139	5,099,509
Total.....	8,935,972	6,841,429	50,718,015	55,516,085	17,196,083	22,659,066	15,341,196	25,579,253	48,671,048	59,410,253
	Circulation.		Deposits.		Due to other banks.		Other liabilities.			
	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.	1850-1.	1853-4.
Eastern States.....	\$32,220,921	\$49,396,107	\$17,397,742	\$24,898,038	\$7,750,247	\$10,546,638	\$653,103	\$1,765,563		
Middle States.....	45,619,039	61,116,263	78,012,354	116,917,925	30,199,200	27,811,364	3,151,500	5,956,919		
Southern States.....	36,176,977	40,854,139	11,906,342	14,597,101	3,888,838	3,422,446	1,480,206	1,305,636		
Southwestern States...	25,768,805	33,258,965	15,284,247	20,064,818	3,118,040	5,832,246	670,732	2,897,091		
Western States.....	15,379,509	20,063,733	6,357,027	11,710,862	1,460,603	2,709,468	482,766	1,514,067		
Total.....	155,165,251	204,689,207	128,957,712	188,188,744	46,416,928	50,322,162	6,438,327	13,439,276		

EASTERN STATES.—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut. MIDDLE STATES.—New York, New Jersey, Pennsylvania, Delaware, Maryland. SOUTHERN STATES.—Virginia, North Carolina, South Carolina, Georgia. SOUTHWESTERN STATES.—Alabama, Louisiana, Mississippi, Tennessee, Kentucky, Missouri. WESTERN STATES.—Illinois, Indiana, Ohio, Michigan, Wisconsin.

DOMESTIC EXCHANGE.

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QUOTATIONS OF DOMESTIC EXCHANGES, APRIL 29TH, 1854, RECEIVED AT THE TREASURY DEPARTMENT FROM THE ASSISTANT TREASURERS AND DEPOSITARIES.

Journal of Banking, Currency, and Finance.

	Upon Boston.	New York.	Philadelphia.	Baltimore.	Washington.	Richmond.	Charleston.
At Boston		1-10 dis.	$\frac{1}{2}$ dis.	$\frac{1}{2}$ dis.	$\frac{1}{2}$ dis.	$\frac{1}{2}$ dis.	1 dis.
New York	dis.		dis.	dis.	dis.	$\frac{1}{2}$ dis.	$\frac{1}{2}$ dis.
Philadelphia	dis. to 1-10 prem.	Par to 1-10 prem.	to $\frac{1}{2}$ prem.	dis. to par	dis. to par		1 dis. to par.
Charleston	to $\frac{1}{2}$ prem.	to $\frac{1}{2}$ prem.	to $\frac{1}{2}$ prem.	to $\frac{1}{2}$ prem.			
St. Louis	Par	Par	Par	Par	$\frac{1}{2}$ dis. to par.	1 to $\frac{1}{2}$ dis.	2 to 1 dis.
New Orleans		$\frac{3}{4}$ to 1 prem.	$\frac{3}{4}$ to 1 prem.	$\frac{3}{4}$ to 1 prem.	to 1 prem.	to $\frac{1}{2}$ prem.	Par to $\frac{1}{2}$ dis.
San Francisco	1 to 2 prem.	1 to 2 prem.	1 to 2 prem.	1 to 2 prem.	to 2 prem.	$\frac{3}{4}$ to 1 prem.	Par
Baltimore	Par to 1-10 prem.	Par to 1-10 prem.	Par to 1-10 prem.		$\frac{1}{2}$ dis. to par.		$\frac{3}{4}$ to $\frac{1}{2}$ dis.
Richmond	$\frac{3}{4}$ to 1 prem.	$\frac{3}{4}$ to 1 prem.	$\frac{3}{4}$ to 1 prem.		Par to $\frac{1}{2}$ prem.		Par to $\frac{1}{2}$ dis.
Mobile	$\frac{1}{2}$ to $\frac{3}{4}$ prem.	$\frac{1}{2}$ to $\frac{3}{4}$ prem.	$\frac{1}{2}$ to $\frac{3}{4}$ prem.		Par to $\frac{1}{2}$ prem.		Par
Cincinnati	Par	Par	Par		Par		$\frac{1}{2}$ dis.
Pittsburg	Par	Par	Par		$\frac{1}{2}$ dis.		$\frac{1}{2}$ dis.
Buffalo	$\frac{1}{2}$ to $\frac{3}{4}$ prem.	$\frac{1}{2}$ to $\frac{3}{4}$ prem.	Par		1 per cent dis.		No sale.
Norfolk	Par to $\frac{1}{2}$ dis.	Par to $\frac{1}{2}$ dis.	Par to $\frac{1}{2}$ dis.	Par to $\frac{1}{2}$ dis.	No sale.		No sale.
Wilmington	1 prem.	1 prem.	1 prem.		None		$\frac{3}{4}$ prem.
Savannah	prem.	prem.	prem.		to $\frac{3}{4}$ prem.		Par
Nashville	prem.	prem.	prem.		prem.		Par
Dubuque	to $\frac{3}{4}$ prem.	to $\frac{3}{4}$ prem.	to $\frac{3}{4}$ prem.		to $\frac{3}{4}$ prem.		None
Little Rock	1 prem.	1 prem.	1 prem.	1 prem.			
Chicago	Par	Par	Par		dis.		$\frac{1}{2}$ dis.
Tallahassee	1 prem.	1 prem.	Par		1 prem.		$\frac{1}{2}$ prem.
	St. Louis.	Mobile.	New Orleans.	Cincinnati.	Pittsburgh.	Buffalo.	San Francisco.
At Boston	1 dis.	$\frac{1}{2}$ dis.	1 $\frac{1}{2}$ dis.	1 $\frac{1}{2}$ dis.	1 dis.	$\frac{3}{4}$ dis.	Par
New York	$\frac{1}{2}$ dis.	$\frac{3}{4}$ dis.	2 dis.	2 $\frac{1}{2}$ dis.	$\frac{3}{4}$ dis.	$\frac{3}{4}$ dis.	6 to 8 dis.
Philadelphia	$\frac{1}{2}$ to $\frac{1}{2}$ dis.		$\frac{1}{2}$ to $\frac{1}{2}$ dis.	$\frac{1}{2}$ to $\frac{1}{2}$ dis.	dis. to par	dis. to par	6 to 1 dis. April 22.
St. Louis		1 to $\frac{3}{4}$ dis.	$\frac{3}{4}$ dis.	$\frac{1}{2}$ to 1 dis.	to $\frac{1}{2}$ dis.	1 to $\frac{1}{2}$ dis.	5 dis.
New Orleans	Par to 1 dis.	Par to $\frac{1}{2}$ dis.		Par to 1 dis.		Par to 1 prem.	No quotation.
San Francisco	3 to 2 prem.	No sale.	$\frac{1}{2}$ to 2 prem.	$\frac{1}{2}$ to 2 prem.	$\frac{1}{2}$ to 2 prem.		Last rep. March 25.
Baltimore	1 to $\frac{1}{2}$ dis.		$\frac{1}{2}$ to $\frac{1}{2}$ dis.				5 dis. to par.
Richmond	1 dis.		1 dis.				2 dis., nominal.
Mobile	dis.		Par				Nominal.
Cincinnati	$\frac{1}{2}$ prem.		Par				Par. Rep. April 15.
Pittsburg	$\frac{1}{2}$ dis.		1 $\frac{1}{2}$ dis.				No sale.
Buffalo	No sale.		No sale.				No sale.
Norfolk	No sale.		No sale.				No sale.
Wilmington	None		None				None
Savannah	None		None				None
Nashville	prem.		prem.				None
Dubuque	to $\frac{3}{4}$ prem.		to $\frac{3}{4}$ prem.				None
Little Rock	prem.						Last rep., April 22.
Chicago	dis.		1 per cent dis.				No sale.
Tallahassee	prem.		prem.				$\frac{1}{2}$ prem.

TAXES AND PROPERTY OF ILLINOIS.

The following statement is derived from the last report of the Auditor of Illinois:—

The whole amount of taxable property in the State for 1853 is assessed at \$224,715,963; and the State and county tax alone is \$1,973,317.

The report also gives the following:—

	Number.	Value.
Horses	286,994	\$12,530,211
Neat cattle	848,716	8,635,109
Mules	12,536	583,985
Sheep	616,158	705,846
Hogs	1,383,643	2,670,678
Carriages and wagons	102,658	3,364,156
Clocks and watches	81,556	516,226
Pianos	613	82,809

The following is the assessed value of those counties which return over four millions of dollars. It will be seen there is some difference in the rates of taxation, the cause of which we leave for others to determine:—

County.	Assessed value.	State and Co. tax.	County.	Assessed value.	State and Co. tax.
Cook	\$22,929,637	\$245,057	Adams	\$4,977,967	\$46,089
Sangamon	10,639,232	72,044	Fulton	4,954,063	43,450
Madison	6,239,616	56,537	McLean	4,929,647	42,532
Peoria	5,646,657	58,220	Pike	4,395,884	37,945
St. Clair	5,269,264	38,986	Jo Davies	4,294,573	53,734
Morgan	5,115,380	36,830	La Salle	4,062,532	60,377

THE CONDITION OF THE BANKS OF BOSTON.

SYNOPSIS OF THE ACT OF THE LEGISLATURE OF MASSACHUSETTS CONCERNING WEEKLY RETURNS TO BE MADE BY BOSTON BANKS, AND MONTHLY RETURNS OF BANKS IN THE STATE OUT OF BOSTON—THE FIRST WEEKLY RETURNS OF BANKS IN BOSTON UNDER THE ACT.

By an act of the Legislature of the Commonwealth of Massachusetts of April 15th, 1854, each bank in Boston is required to transmit to the Secretary of the Commonwealth, on every Monday morning, a statement under oath of the president or cashier, the amount of capital stock, the average amount of loans and discounts, specie actually in the bank, amount due from other banks, amount due to other banks, deposits and circulation for the several days of the week next preceding the said Monday. Section 2 of this act requires the Secretary of State to publish in one or more of the Boston daily papers, to be selected by him, a summary statement of the condition of each of the Boston banks for the week, compiled from the returns as made to the Secretary of State.

By section 3 of this act, each bank in Massachusetts, out of Boston, is required to make a similar statement, based on the condition of each bank on each Saturday of the month next preceding the first Monday of each month. Section 4 requires the Secretary of State to cause a similar summary of the monthly returns of banks out of Boston to be published in the same manner as is provided for in regard to the Boston banks. By section 5 the Secretary is authorized to select the newspapers, and the expenses of publication, when approved by the Governor of the Commonwealth. Section 6 of the act affixes a forfeit of five hundred dollars on every bank neglecting to comply with the provisions of the law, to be recovered by the Treasurer of the Commonwealth.

The Secretary is required to transmit to each bank in the State a blank form for the returns required by the act. This act took effect on the 1st of June, 1854. A

similar act was passed by the Legislature of New York during the session of 1853, and the first returns were made under its provisions for the week ending August 6th, 1853. A summary statement of the weekly averages of the New York City Banks, from the commencement, will be found in our usual "Commercial Chronicle and Review" for the month.

We publish below the first weekly statement of the condition of the banks in Boston, as prepared under the direction of the Secretary of the Commonwealth of Massachusetts:—

AVERAGE CONDITION OF THE BANKS IN BOSTON FOR THE WEEK PRECEDING MONDAY,
JUNE 5, 1854.

Banks.	Capital stock.	Loans and discount.	Specie in bank.	Due from other banks.	Due to other banks.	Deposits.	Circulation.
Atlantic	\$500,000	\$813,822	\$60,443	\$232,035	\$106,466	\$316,028	\$205,210
Atlas	500,000	855,864	44,036	41,354	114,193	211,226	150,777
Blackstone	472,700	821,565	29,459	169,819	.....	388,494	265,597
Boston	900,000	1,636,525	133,318	216,087	44,885	693,564	232,168
Boylston	400,000	770,043	17,599	69,015	263	274,194	189,477
Broadway	100,000	153,226	4,149	24,393	.....	39,446	51,341
City	1,000,000	1,497,814	68,585	136,326	168,503	255,764	180,457
Columbian	500,000	838,774	37,252	47,003	13,778	283,086	170,512
Commerce	2,000,000	2,950,379	172,620	896,608	839,842	656,870	412,408
Eagle	700,000	1,183,529	76,660	176,111	22,508	435,330	208,619
Eliot	300,000	516,796	32,546	83,914	31,739	137,963	153,170
Exchange	1,000,000	2,013,633	134,149	552,481	563,923	616,010	348,890
Faneuil Hall	500,000	945,291	42,719	123,257	81,256	325,408	217,911
Freeman's	350,000	698,904	30,644	62,246	.....	170,440	267,547
Globe	1,000,000	1,477,867	127,962	252,572	272,734	320,594	168,064
Granite	900,000	1,492,910	25,071	180,069	317,682	218,689	188,117
Grocers'	600,000	1,004,354	90,560	356,692	478,043	277,039	254,314
Hamilton	500,000	842,755	65,202	158,088	68,329	215,901	179,324
Howard Banking Co. .	500,000	840,727	60,416	108,831	119,826	170,119	199,079
Market	560,000	1,078,217	42,275	88,169	161,112	281,566	200,024
Massachusetts	800,000	1,000,130	43,796	117,611	9,392	203,925	152,289
Mechanics'	200,000	388,469	15,416	76,922	6,419	114,959	157,784
Merchants'	4,000,000	5,725,967	398,223	1,073,565	810,504	1,381,348	625,623
National	455,300	664,463	42,899	178,915	54,524	196,172	203,025
New England	1,000,000	1,431,390	67,690	101,457	170,126	341,104	161,236
North	750,000	1,288,455	51,639	41,234	72,906	371,410	218,436
North America	750,000	1,128,425	47,458	192,508	98,572	289,341	193,406
Shawmut	500,000	954,558	78,419	152,191	136,361	278,261	184,599
Shoe and Leather ..	1,000,000	1,529,285	60,565	169,664	260,480	264,181	199,445
State	1,800,000	2,651,747	109,013	312,736	237,305	576,869	221,479
Suffolk	1,000,000	1,477,327	292,404	1,329,647	679,463	1,058,266	411,092
Traders'	600,000	1,013,420	52,931	113,756	124,287	209,942	185,213
Tremont	1,250,000	1,989,466	104,542	429,008	268,183	637,567	368,656
Union	1,000,000	1,480,038	72,347	198,534	162,110	295,859	167,718
Washington	500,000	873,312	53,171	28,335	39,175	241,415	170,639
Webster	1,500,000	2,340,045	74,099	224,690	116,896	569,643	413,364

The following is the aggregate condition of the above-named thirty-six banks in Boston:—

Capital stock of banks in Boston	\$30,388,000
Loans and discounts	48,369,492
Specie in bank	2,860,277
Due from other banks	8,715,843
Due to other banks	6,651,825
Deposits	13,270,062
Circulation	8,277,019

SECRETARY'S OFFICE, June 6th, 1854.

In the foregoing abstract, the *cents* in the various items, as submitted by the banks, are not given.

In the returns made by the several banks in Boston, of which the foregoing is the abstract required by the law to be published, there exists a want of uniformity under the particular of "amount due from other banks;" a portion of the returns, including the bills and checks on other banks, while others omit these altogether. As there is no other head under which these items can appear in conformity with the provisions of the statute, and as it was the manifest intent of the Legislature that so important an element in the condition of these institutions should not be excluded from the returns, the several banks hereafter will include under the head "Due from other banks," the average amount of bills and checks on other banks held by them during the period covered by their respective returns.

E. M. WRIGHT.

CONDITION OF THE BANKS IN THE DIFFERENT STATES IN 1850-1 AND 1853-4.

In the following statement are included, it is believed, all the incorporated banks that were in operation in the beginning of 1851 and the beginning of 1854, a few scattering ones excepted, and these consisting chiefly of banks that had but lately commenced business. In the State of Texas there is one bank, doing a small business, from which no returns have been received. In the States of California, Florida, Arkansas, and Iowa, and in the Territories of New Mexico, Oregon, Washington, Utah, and Minnesota, there are no incorporated banks.

In the returns from some of the banks of Pennsylvania, and those of some other States, a considerable amount of specie is believed to be embraced under the head of "specie funds," but the exact amount cannot be ascertained.

	Date.	Banks.	Branches.	Cap'l paid in.	Loans & discounts.	Stocks.
Maine	1850, Oct.	32	..	\$3,248,000	\$5,830,230	.....
	1854, Jan.	60	..	5,913,870	11,166,519	.....
New Hampshire	1850, Dec.	22	..	2,375,900	3,821,120	.....
	1853, Dec.	35	..	3,376,000	6,518,183	.....
Vermont	1850, Aug.	27	..	2,197,240	4,423,719	\$40,500
	1853, Aug.	33	..	2,914,040	6,840,932	117,125
Massachusetts	1850, Sept.	126	..	36,925,050	63,330,024	.....
	1853, Sept.	137	..	43,270,500	77,172,097	.....
Rhode Island	1850, Sept.	63	..	11,645,492	15,492,547	151,277
	1853, Sept.	77	..	15,917,429	22,844,911	121,414
Connecticut	1850, April	41	2	9,907,503	15,607,315	.....
	1853, April	53	2	13,164,594	24,601,165	644,962
New York	1850, Sept.	197	1	48,618,762	107,132,339	13,177,944
	1854, Feb.	312	1	70,018,980	203,008,077	21,453,585
New Jersey	1851, Jan.	26	..	3,754,900	7,158,977	.....
	1854, Jan.	38	..	5,147,741	10,663,627	974,895
Pennsylvania	1850, Nov.	53	5	17,926,222	39,430,145	1,428,354
	1853, Nov.	61	5	19,765,864	48,656,884	1,141,649
Delaware	1851, Jan.	6	3	1,293,185	2,264,313	52,986
	1854, Jan.	6	3	1,343,185	2,915,602	62,681
Maryland	1851, Jan.	23	2	8,123,881	14,900,816	760,417
	1854, Jan.	25	..	9,558,409	18,358,441	825,339
Virginia	1850, Oct.	6	31	9,824,545	19,645,777	269,914
	1854, Jan.	16	39	12,796,466	24,913,789	2,259,812
North Carolina	1850, Nov.	5	13	3,789,250	6,056,726	150,000
	1853, Dec.	9	16	4,818,465	10,366,247	64,175
South Carolina	1851, Jan.	12	2	13,213,131	23,312,330	963,611
	1854, March	16	2	16,073,580	24,365,690	2,775,059
Georgia	1850, Dec.	11	10	13,482,198	11,421,626	1,574,349
	1853, Dec.	11	7	12,957,600	13,567,469	2,193,848
Alabama	1851, Jan.	2	..	1,800,580	4,670,458	70,361
	1854, Jan.	3	..	2,100,000	5,865,142	471,156
Louisiana	1851, Jan.	5	20	12,370,390	19,309,103	.....
	1854, Jan.	9	10	17,359,261	29,320,582	842,000
Mississippi	1851, April	1	..	118,460	112,275	.....
	1854, Jan.	1	..	240,165	362,585	.....
Tennessee	1851, Jan.	4	19	6,881,568	10,992,139	432,902
	1853, Oct.	9	19	6,599,872	11,846,879	538,042
Kentucky	1851, Jan.	5	21	7,546,927	12,536,305	694,962
	1854, Jan.	9	26	10,869,665	21,398,336	802,124
Missouri	1851, Jan.	1	5	1,209,131	3,533,463	.....
	1854, Jan.	1	5	1,215,405	3,958,055	.....
Illinois	1851, Jan.				None.	
	1853, April	23	..	1,702,456	586,404	1,780,617
Indiana	1850, Nov.	2	13	2,082,950	4,395,099	.....
	1853, Dec.	31	13	5,524,552	7,247,366	3,257,064
Ohio	1850, Nov.	57	..	8,718,366	17,059,593	2,200,891
	1854, Feb.	68	..	8,013,154	17,380,255	2,808,337
Michigan	1851, Jan.	5	1	764,022	1,819,305	420,521
	1854, Jan.	6	1	1,084,718	2,199,093	637,725
Wisconsin	1851, Jan.				None.	
	1854, Jan.	10	..	600,000	1,163,066	578,721

	Date.	Real Estate.	Other Investments.	Due by other Banks.	Notes of other Banks.	Specie Funds.
Maine	1850.	\$111,905	.....	\$778,955	\$187,435	.....
	1854.	116,842	.....	1,581,596	365,490	.....
New Hampshire.	1850.	43,670	.....	447,453	91,444	.....
	1853.	54,153	.....	587,859	157,667	.....
Vermont	1850.	94,497	.....	1,001,789	127,637	\$2,376
	1853.	104,768	\$16,324	1,301,033	185,999	.....
Massachusetts ..	1850.	988,235	.....	5,335,003	4,048,521	.....
	1853.	1,090,463	.....	6,666,412	5,346,161	.....
Rhode Island....	1850.	283,844	13,461	441,164	537,761	.....
	1853.	264,812	28,145	1,004,863	844,329	.....
Connecticut	1850.	389,983	396,035	1,657,411	245,349	103,614
	1853.	384,800	713,414	1,890,685	436,538	202,204
New York	1850.	3,321,589	736,120	10,403,509	3,031,957	10,498,824
	1854.	5,272,690	151,528	11,529,939	3,488,890	18,175,670
New Jersey.....	1851.	270,546	183,468	1,578,663	.....	.....
	1854.	267,804	224,449	432,378	42,685	32,849
Pennsylvania....	1850.	1,134,413	1,230,064	4,266,916	2,591,962	2,864,944
	1853.	1,007,843	652,756	5,375,738	3,804,410	3,879,120
Delaware	1851.	117,981	2,000	306,545	74,600	51,022
	1854.	124,262	.....	352,286	81,511	177,293
Maryland	1851.	405,245	768	1,173,200	965,796	78,552
	1854.	321,007	28,256	1,681,026	158,827	1,595,092
Virginia	1850.	764,282	240,498	1,925,652	552,153	.....
	1854.	756,551	26,259	2,710,180	1,271,453	199,848
North Carolina..	1850.	127,806	18,785	1,074,793	483,947	.....
	1853.	137,154	.....	1,842,569	643,821	73,324
South Carolina..	1851.	338,429	266,205	5,020,998	810,895	306,909
	1854.	419,370	1,369,582	1,611,709	645,639	.....
Georgia.....	1850.	7,195,063	2,387,715	3,117,466	535,593	141,300
	1853.	8,176,932	712,950	1,735,422	603,957	247,852
Alabama.....	1851.	125,697	81,000	960,334	63,865	.....
	1854.	65,321	31,500	362,084	111,296	.....
Louisiana	1851.	2,255,169	2,042,149	2,225,896	.....	1,200,000
	1854.	1,954,164	2,163,055	2,416,526	.....	.....
Mississippi	1851.	8,400	.....	302,641	.....	.....
	1854.	9,970	4,742	84,049	13,309	.....
Tennessee.....	1851.	662,520	.....	1,559,418	729,186	.....
	1853.	516,980	67,322	1,443,721	451,396	126,890
Kentucky.....	1851.	419,070	440,127	2,451,155	550,879	.....
	1854.	416,192	307,868	3,284,405	1,115,780	543,978
Missouri	1851.	123,928	273,317	66,028	37,510	.....
	1854.	116,151	121,872	152,781	282,590	.....
Illinois.....	1851.	.....	.....	None.	.....	.....
	1853.	13,202	.....	880,541	233,576	.....
Indiana	1850.	364,233	108,485	845,062	224,842	.....
	1853.	289,673	127,238	1,985,114	715,305	128,860
Ohio	1850.	451,593	460,692	3,373,272	1,195,655	93,460
	1854.	332,909	.....	3,534,970	1,438,342	171,855
Michigan.....	1851.	221,626	65,083	404,691	109,096	195
	1854.	144,998	95,170	742,843	108,941	4,282
Wisconsin.....	1851.	.....	.....	None.	.....	.....
	1854.	8,461	.....	325,946	151,154	20,136
	Date.	Specie.	Circulation.	Deposits.	Due to other banks.	Other Liabilities.
Maine	1850.	\$475,589	\$2,654,208	\$1,223,671	\$48,006	\$38,285
	1854.	1,132,610	5,317,750	2,446,470	146,879	99,202
New Hampshire.	1850.	129,399	1,397,111	566,634	.....	.....
	1853.	180,239	3,021,579	868,357	.....	.....
Vermont	1850.	127,325	2,856,027	556,703	32,984	.....
	1853.	198,173	4,764,439	734,216	22,136	.....
Massachusetts ..	1850.	2,993,178	17,005,826	11,176,827	6,549,929	442,084
	1853.	3,563,782	21,172,369	15,067,204	8,608,238	474,051

	Date.	Specie.	Circulation.	Deposits.	Due to other banks.	Other liabilities.
Rhode Island....	1850.	\$297,661	\$2,553,865	\$1,488,596	\$650,560	\$133,733
	1853.	359,699	4,895,529	2,238,856	1,062,615	362,729
Connecticut.....	1850.	640,622	5,253,884	2,395,311	468,768	88,961
	1853.	1,145,857	10,224,441	3,542,935	716,770	829,581
New York.....	1850.	10,045,330	26,415,556	50,774,193	21,873,923	2,984,727
	1854.	14,169,905	32,573,189	75,554,481	20,227,967	5,848,627
New Jersey.....	1851.	622,825	3,046,658	2,411,861	373,453	.....
	1854.	805,533	4,917,412	4,133,454	486,561	.....
Pennsylvania....	1850.	4,327,394	11,798,996	18,484,779	5,857,740	156,873
	1853.	4,331,656	17,420,348	22,747,991	4,640,970	36,648
Delaware.....	1851.	159,773	833,960	502,755	170,873	.....
	1854.	133,367	1,286,933	860,947	107,075	.....
Maryland.....	1851.	2,709,699	3,523,869	5,838,766	1,923,206	9,895
	1854.	3,405,090	4,918,381	8,622,052	2,348,791	71,645
Virginia.....	1850.	2,928,174	10,256,997	4,717,732	308,841	.....
	1854.	3,721,042	14,298,792	6,513,027	635,127	5,495
North Carolina...	1850.	1,645,028	4,249,883	942,098	60,682	4,825
	1853.	1,856,048	7,320,667	1,808,587	186,993	51,013
South Carolina...	1851.	2,218,223	11,771,270	3,665,636	3,035,893	23,260
	1854.	1,621,973	9,715,783	3,752,260	1,878,291	159,193
Georgia.....	1850.	2,112,446	9,898,827	2,580,826	483,422	1,452,121
	1853.	1,576,813	9,518,777	2,523,227	724,035	1,089,935
Alabama.....	1851.	1,998,820	3,568,235	1,474,963	196,911	660,732
	1854.	1,125,954	3,171,487	1,671,448	663,164	.....
Louisiana.....	1851.	5,716,001	5,059,229	8,464,389	1,384,232	.....
	1854.	7,468,460	6,969,807	11,743,152	2,022,636	2,348,859
Mississippi.....	1851.	.....	161,390	4,500	142,390	.....
	1854.	5,669	234,745	33,393	.....	.....
Tennessee.....	1851.	1,456,778	6,814,376	1,917,757	61,633	10,000
	1853.	1,983,790	6,821,836	2,200,922	108,470	447,425
Kentucky.....	1851.	2,794,351	7,643,075	2,323,657	1,256,589	100,807
	1854.	4,596,249	13,573,510	3,102,159	2,809,031	.....
Missouri.....	1851.	1,198,263	2,522,500	1,098,981	76,280	.....
	1854.	937,835	2,487,580	1,313,744	223,945	.....
Illinois.....	1851.	None.	None.	None.	None.	None.
	1853.	419,531	1,351,788	522,476	315,441	14,161
Indiana.....	1850.	1,197,880	3,422,445	630,325	112,175	.....
	1853.	1,820,760	7,116,827	1,764,747	445,359	100,622
Ohio.....	1850.	2,750,587	11,059,700	5,310,555	1,305,839	343,856
	1854.	2,319,064	9,839,008	7,693,610	1,866,172	249,887
Michigan.....	1851.	125,722	897,364	416,149	42,589	138,930
	1854.	357,672	1,270,989	1,075,606	82,496	438,488
Wisconsin.....	1851.	None.	None.	None.	None.	None.
	1854.	182,482	485,121	554,423	.....	710,954

SPECIE AS BAGGAGE.

The *Atalanta*, (Georgia,) *Intelligencer*, contains a long letter from Mr. Hutchings, of the firm of Hutchings & Co., bankers, of Louisville, in relation to the treatment received by him from the officers of the Western and Atalanta Railroad. Mr. Hutchings was a passenger in one of the trains. He had with him two small carpet bags, weighing 78½ pounds, which he kept in his possession. The conductor called on him to pay \$40 freight on his baggage, contending that it contained \$40,000 in gold, and that the road charged \$1 freight for every \$1,000 of specie carried on it. Mr. Hutchings protested against this, as he carried his baggage at his own risk, but he declared himself ready to pay for over-weight of his baggage at the customary rates. The contents of his baggage were known to no one but himself, and no one had a right to know what it contained, as he did not hold any one responsible for it. On the arrival of the train at Atalanta the superintendent again demanded \$40. Mr. Hutchings was willing to pay it under protest, but this would not satisfy the official, and he detained the baggage. Mr. Hutchings then obtained a possessory writ to recover his baggage, and it was brought before a magistrate's court. The magistrate gave judgment against

Mr. Hutchings for \$17, which he paid under protest. He was served similarly by the Georgia Railroad Company. He has instituted suit before the United States District Court to test the question of the right of such taxation by the companies.

SAVINGS BANKS IN THE CITY OF NEW YORK.

There are in the City of New York fourteen Savings Banks. The following table, compiled from their last annual reports, made near January 1, 1854, shows the time of their commencement, and the amount of deposits:—

RECAPITULATION OF DEPOSITS, JANUARY, 1854.

Name of Bank.	Commenced.	Deposits.
Bank for Savings.....	1819	\$7,901,808
Seamens' Bank for Savings.....	1829	6,478,677
Bowery Savings Bank.....	1834	5,270,519
Greenwich Savings Bank.....	1833	2,323,071
Manhattan Savings Bank.....	1851	1,007,828
Merchants' Clerks' Savings Bank.....	1848	840,898
Emigrant Industrial Savings Bank.....	1851	841,712
Broadway " ".....	1851	438,509
East River " ".....	1851	419,080
Irving Savings Institution.....	1851	291,903
New York Dry Dock Savings Bank.....	....	591,024
Knickerbocker Savings Bank.....	1852	427,663
Mariners' Savings Bank.....	1853	36,649
Sixpenny Savings Bank.....	1853	41,061
Total.....		26,910,402

The manner of investment of the funds, as far as given, is as follows:—

	Stocks.	Mortgages.	Real Estate.	Cash.
Bank for Savings.....	\$5,400,006	\$2,553,433	\$30,000	\$380,422
Seamen's.....	2,863,500	3,067,050	151,157	352,826
Bowery.....	2,124,231	2,378,414	125,707	642,165
Manhattan.....	574,540	314,358	.....	118,930
Merchants' Clerks'.....	353,055	395,910	91,923	.....
Broadway.....	181,841	186,700	.....	73,755
East River.....	143,990	250,445	.....	14,645
Irving.....	37,690	158,565	23,907	71,741
Dry Dock.....	10,000	510,850	.....	70,174
Knickerbocker.....	154,357	222,782	.....	50,524
Mariners'.....	32,615	.....	.....	4,034
Total.....	11,475,825	10,038,507	402,694	1,779,216

AMERICAN STOCKS HELD BY FOREIGNERS.

The following general summary of American Stocks, held by foreigners, on the 30th of June, 1853, is derived from the report of the Secretary of the United States Treasury:—

	Total.	Held by foreigners.
United States stocks.....	\$58,205,517	\$27,000,000
State stocks.....	190,718,221	72,931,507
113 cities and towns (bonds).....	79,352,149	16,462,322
347 counties (bonds).....	13,928,369	5,000,000
985 banks (stocks).....	266,724,955	6,688,996
75 insurance companies (stocks).....	12,829,730	378,172
244 railroad companies (stocks).....	309,893,967	8,244,025
Do. do. (bonds).....	170,111,552	43,888,752
16 canal and navigation companies (stocks)....	35,888,918	554,900
Do. do. (bonds)....	22,130,569	1,967,547
15 miscellaneous companies (stocks).....	16,425,612	802,720
Do. do. (bonds).....	2,358,323	265,773
Total.....	\$1 178 567 882	\$184,184,714

If the estimate of Winslow, Lanier & Co. be preferred, as to the amount of State stocks held by foreigners, \$110,972,108 must be substituted in the second line of the second column, and the total will then be—

Aggregate of stocks and bonds.....	\$1,178,567,882
Aggregate held by foreigners.....	222,225,315

CONDITION OF THE BANKS OF NEW ORLEANS.

JOHN H. ALPUENTE, Secretary of State for Louisiana, publishes the subjoined statement of the Banks of New Orleans, on the 29th of April, 1854:—

MOVEMENT OF THE BANKS.

SPECIE PAYING.

	Cash Liabilities.		Cash Assets.	
	Circulation.	Total.	Specie.	Total.
Citizens' Bank, (Banking Department).	\$2,064,615	\$4,068,207	\$1,963,441	\$5,575,116
Canal Bank.....	1,713,547	3,398,742	1,348,247	545,917
Louisiana Bank.....	1,397,284	4,859,261	1,575,892	7,289,287
Louisiana State Bank.....	1,568,915	5,972,051	2,126,393	7,128,932
Total.....	6,744,361	18,298,261	7,014,973	25,452,652

FREE BANKS.

Mechanics' & Traders'.....	1,303,168	635,373	2,234,314
Bank of New Orleans.....	592,795	1,703,790	566,444
Southern Bank.....	336,570	744,910	2,076,603
Union Bank.....	308,955	902,699	236,842
Total.....	1,238,320	4,654,568	1,653,343

IN LIQUIDATION.

Consolidated Association....	4,125	5,101	1,373	1,376
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TOTAL MOVEMENT AND DEAD WEIGHT.

SPECIE PAYING.

	Liabilities, Exclusive of Capital.		Assets.	
Citizens' Bank, (Banking Department).....	\$4,068,207	04	\$5,671,724	43
" " (Mortgage Department).....	500,000	00	6,292,661	81
Canal & Banking Company.....	3,398,842	03	7,817,000	64
Louisiana Bank.....	4,859,261	43	10,024,543	98
Louisiana State Bank.....	5,972,051	05	8,437,019	74
Total.....	18,798,261	55	38,242,950	60

FREE BANKS.

Mechanics' & Traders' Bank.....	1,303,168	10	2,368,931	31
Bank of New Orleans.....	1,703,790	82	2,668,513	69
Southern Bank.....	744,910	23	2,103,259	50
Union Bank.....	1,196,148	18	1,954,929	69
Total.....	4,948,117	33	9,095,634	09

IN LIQUIDATION.

Consolidated Association.....	1,435,024	97	1,184,903	62
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THE THREE-DOLLAR GOLD COIN OF THE UNITED STATES.

It will be recollected that an act of Congress of February, 1853, directed the coinage of three-dollar gold pieces at the mint and branches. These coins are now in circulation.

The obverse of this coin represents an ideal head, with the feathered cincture symbolic of America, the word "liberty" appearing on the band encircling the head, the inscription, "United States of America," surrounding the whole. On the reverse is a wreath composed of some of the staple productions of the United States, viz. wheat, cotton, Indian corn, and tobacco; the denomination and date being in the center.

As compared with the other gold coins, the devices and arrangement are novel, but perhaps not less appropriate, and, together with the difference in the diameter of the piece, will make it readily distinguishable from the quarter eagle, which approaches it most nearly in value. It is 16-20ths of an inch in diameter, and weighs 77.4 = oz. 16.125.

BANK STOCKS OF THE STATES HELD BY FOREIGNERS.

The following summary statement of so many of the banks as have made returns of the amount of capital paid in, and of the amount thereof held by foreigners, on the 30th of June, 1853, is derived from the report of the Secretary of the Treasury, in answer to a resolution of the Senate calling for the amount of American Securities held in Europe and other foreign countries:—

State.	Number of banks.	Capital paid in.	Held by foreigners.
Maine	41	\$4,352,625	\$48,500
Vermont	32	2,793,000	16,145
New Hampshire	32	3,142,458	100
Boston	32	25,005,800	381,410
Other Massachusetts banks	107	19,755,000	56,740
Providence	28	10,511,100	7,000
Other Rhode Island banks	39	3,402,161	.....
Connecticut	53	13,795,734	23,500
New York city	50	43,340,482	1,734,645
Other New York banks	168	24,861,699	40,350
New Jersey	29	4,739,580	2,750
Philadelphia	16	10,900,000	153,320
Other Pennsylvania banks	37	8,521,970	14,110
Delaware	8	1,140,000	.....
Baltimore	12	7,523,693	323,436
Other Maryland banks	14	2,211,210	.....
District of Columbia	3	847,568	26,015
Virginia	44	11,004,915	26,000
North Carolina	22	4,443,015	.....
South Carolina	13	13,033,275	165,925
Georgia	13	4,585,400	55,550
Alabama	4	2,211,300	604,100
Louisiana	3	9,145,520	2,548,400
Mississippi	1	240,165	.....
Tennessee	23	7,682,177	341,500
Kentucky	33	10,511,525	79,200
Missouri	6	1,215,405	40,800
Illinois	17	1,378,432	.....
Indiana	23	2,953,263	.....
Ohio	68	9,794,905	.....
Michigan	6	1,201,578	.....
Wisconsin	8	480,000	.....
Total banks, including branches ...	985	266,724,955	6,688,996

In this summary are included, it is believed, all the banks that, on the 30th of June, 1853, had among their stockholders foreigners residing beyond the bounds of the United States. From some twenty or thirty banks returns could not be obtained, but they were, with a few exceptions, such as were very small, or had but recently commenced business.

COMMERCIAL STATISTICS.

EXPORTS OF THE PRODUCTS OF THE FOREST FROM THE UNITED STATES.

We compile, from the report of the Register of the Treasury, the following statement of the quantity and value of the products of the forest exported from the United States during the year ending 30th June, 1853 :—

	Quantity.	Value.
Staves and heading.....M.	28,693	\$2,578,149
Shingles.....	41,932	
Boards, plank, and scantling.....M. feet.	78,599	
Other lumber.....	.....	123,743
Masts and spars.....	.....	129,628
Oak barks and other dyes.....	.....	118,894
All manufactures of wood.....	.....	2,294,122
Tar and pitch.....barrels.	59,144	1,406,448
Resin and turpentine.....	454,715	
Pot and pearl ashes.....tons.	3,421	334,321
Skins and furs.....	.....	796,101
Ginseng.....lbs.	230,726	133,813

The total products of the forest during the year ending June 30th, 1853, are valued, according to custom-house returns, at \$7,915,259.

EXPORT OF THE PRODUCTS OF AGRICULTURE FROM THE UNITED STATES.

We compile from the annual report of the Register of the Treasury the subjoined statement of the export from the United States, for the year ending June 30th, 1853, of the various products of agriculture :—

BREADSTUFFS AND OTHER VEGETABLE FOOD, AND PRODUCTS OF AGRICULTURE.

	Quantity.	Value.
Wheat.....bushels.	3,890,141	\$4,354,403
Flour.....barrels.	2,920,918	14,783,394
Indian corn.....bush.	2,274,909	1,374,077
Indian meal.....bbls.	212,118	709,974
Rye meal.....	8,910	34,186
Rye, oats, &c.....	.....	165,824
Ship bread, &c.....bbls.	121,281	554,020
" ".....kegs.	56,089	
Potatoes.....bush.	225,905	152,569
Rice.....tierces.	67,707	1,657,658
Cotton, Sea Island.....lbs.	11,165,165	109,456,404
" other than Sea Island.....	1,100,405,205	
Tobacco.....hhds.	159,853	11,319,319
Flax seed.....bush.	3,932	7,719
Hemp.....cwt.	2,413	18,195
Indigo.....lbs.	36	36
Sugar, brown.....	672,274	33,854
Hops.....	245,647	40,054
Wax.....	376,693	113,602
Sugar, refined.....	5,155,057	375,780
Grain spirits.....galls.	360,633	141,173
Chocolate.....lbs.	73,551	10,230
Spirits from molasses.....galls.	1,063,396	329,381
Molasses.....	.....	17,582
Vinegar.....	.....	20,443
Beer, ale, porter, and cider, bottles.....galls.	133,979	64,677
" " " " casks.....	17,390	
Oil, linseed.....	18,266	15,468

The total value of exports of the growth, produce, and manufacture of the United States for the year ending June, 30th, 1853, according to the report of the Register of the Treasury, was \$213,417,697. The value of the three leading products of the Southern States, cotton, tobacco, and rice, amounted to \$122,433,381, leaving a balance of \$90,984,316 for all other products and manufactures. We have omitted in this statement sugar, chiefly from Louisiana, as only 672,274 lbs, valued at \$33,854, was exported during the year. The gold and silver coin exported amounted to \$23,548,535, which, if taken from the balance, (\$90,984,316,) after deducting the value of the cotton, tobacco, and rice, leaves \$67,435,781 for all other exports of the growth, produce, and manufacture of the United States. A portion of the tobacco exported, we know not how large, is the product of the Northern and Western States. The leading agricultural exports of the northern and western ports of the Union consist of breadstuffs, and including wheat, flour, Indian corn, Indian and rye meal, amounted in the year, ending as above, to \$21,256,034.

IMPORTS OF BREADSTUFFS INTO GREAT BRITAIN.

THE TOTAL IMPORTS IN GREAT BRITAIN OF GRAIN, MEAL, AND FLOUR, FOR FIVE YEARS PAST, AS MADE UP FROM THE OFFICIAL RETURNS, WERE:—

From	1849. Quarters.	1850. Quarters.	1851. Quarters.	1852. Quarters.	1853. Quarters.
Russia, Northern ports.	340,633	363,779	572,257	343,949	634,404
Do. Black Sea ports.	572,735	589,250	762,160	957,877	1,070,483
Denmark & Duchies...	1,311,086	1,077,735	843,007	770,194	947,015
Prussia	1,354,691	1,343,780	930,168	554,703	1,177,764
Hanse Towns	595,673	392,853	143,476	167,858	305,044
Other ports of Germany	416,023	457,844	336,691	339,734	363,075
Holland	586,739	495,614	153,774	221,563	170,762
France	1,919,410	1,328,922	1,591,377	745,162	714,242
Italian States	406,034	210,249	555,905	193,974	237,755
Wallachia & Moldavia.	325,128	217,505	624,242	713,876	665,106
Other Turkish ports...	423,976	276,528	474,937	200,021	744,084
Egypt	392,727	558,063	958,995	777,745	643,129
British N. America....	181,622	95,860	143,378	126,240	189,357
United States	1,816,425	1,082,755	1,211,365	1,400,420	1,821,434
Other countries	925,759	528,853	316,294	233,353	489,363
Total	10,669,661	9,010,590	9,618,026	7,746,669	10,173,135

THE FOLLOWING IS AN OFFICIAL STATEMENT OF THE IMPORTS OF WHEAT AND WHEAT-FLOUR INTO GREAT BRITAIN FOR FIVE YEARS:—

From	1849. Quarters.	1850. Quarters.	1851. Quarters.	1852. Quarters.	1853. Quarters.
Russia, Northern ports.	47,716	69,084	35,700	27,112	252,242
Do. Black Sea ports.	446,501	569,529	663,984	706,622	818,930
Denmark & Duchies...	241,751	162,207	168,768	218,834	294,926
Prussia	616,612	835,650	696,175	452,293	1,145,845
Hanse Towns	329,369	222,289	100,987	49,487	223,914
Other ports of Germany	167,448	158,655	163,734	130,144	185,417
Holland	306,411	293,465	66,414	124,963	57,732
France	738,833	1,145,146	1,193,433	469,418	341,444
Italian States	279,680	117,323	241,852	65,104	164,255
Wallachia & Moldavia.	46,972	70,035	164,374	86,139	227,143
Other Turkish ports...	116,415	65,523	175,565	40,841	251,343
Egypt	128,273	247,235	533,191	394,668	357,906
British N. America....	141,266	80,394	129,680	110,133	168,021
United States	613,601	537,080	911,855	1,231,893	1,582,641
Other countries	481,627	256,698	84,700	67,552	164,100
Total	4,502,475	4,830,263	5,330,412	4,164,603	6,285,860

DUTIES COLLECTED AT BOSTON.

The annexed statement exhibits the amount of duties collected at the port of Boston in each of the past sixteen years, distinguishing the amount paid on merchandise brought in American and foreign vessels:—

	American.	Foreign.	Total.
1838.....	\$2,305,197 44	\$105,958 51	\$2,411,155 95
1839.....	3,134,514 26	160,315 38	3,294,829 65
1840.....	2,364,306 75	92,419 47	2,456,726 21
1841.....	3,013,083 80	213,599 33	3,226,683 13
1842.....	2,543,748 18	236,437 86	2,780,186 04
1843.....	2,734,134 84	757,884 98	3,491,019 82
1844.....	4,800,877 70	1,234,067 44	5,034,945 14
1845.....	4,027,336 52	1,222,297 48	5,249,634 00
1846.....	3,630,744 64	1,241,825 52	4,872,510 16
1847.....	3,936,325 65	1,512,036 16	5,448,361 82
1848.....	3,790,267 45	1,118,559 75	4,908,827 20
1849.....	3,607,608 68	1,429,702 16	5,037,310 84
1850.....	3,903,440 17	2,224,377 29	6,127,817 45
1851.....	3,899,822 85	2,596,704 50	6,496,527 35
1852.....	3,826,428 25	2,466,622 38	6,293,050 63
1853.....	4,588,777 32	3,137,415 63	7,696,193 00

In the year ending June 30, 1853, the amount of duties was upwards of a million of dollars more than in any previous year. The foreign trade of Boston has increased very rapidly since the Cunard steamers commenced running to that port.

EXPORTS AND IMPORTS OF CHILI.

The official custom-house report of the foreign trade of Chili for six months of 1853 shows a total of \$5,152,900 imports, against \$6,504,000 exports. England stands first in importance, the United States next. The totals to England, France, the U. States, Germany, &c., were as follows:—

	Imports.	Exports.
England and dependencies	\$1,862,334	\$2,117,472
France and dependencies	907,432	430,928
United States (Atlantic).....	428,438	1,446,771
California.....	43,206	913,865
Germany.....	807,855	302,148
Brazil.....	301,624	59,008
Peru.....	322,649	657,511
All other countries.....	479,422	576,297
Total, six months	\$5,152,900	\$6,504,000

SHIPS CLEARED FROM LONDON TO AUSTRALIA.

Mr. R. P. Mitthofer, shipping agent at London, furnishes the following statement of the amount of "register tonnage" of ships cleared from the port of London for Australia from the 1st of January to the 31st of March inclusive, compared with the tonnage for the same period in 1853:—

	Jan. 1 to March 31. 1854.	Jan. 1 to March 31. 1853.	Loading April 1. 1854.	Loading April 1. 1853.
Adelaide	7,679	5,678	4,024	5,291
Melbourne.....	20,190	26,393	9,240	17,205
Sydney	15,952	14,142	11,039	10,237
Launceston	2,401	1,492	1,876	1,165
Hobart Town	3,367	2,369	4,789	3,381
Geelong.....	4,211	1,726	2,530	2,454
Melbourné, Sydney, Ade. and Geelong.	1,250	1,694	2,195	1,730
Total	55,050	53,494	35,698	41,463

The total for the first three months of 1854 includes 13,262 tons cleared in January, 18,845 in February, and 22,943 in March. The total cleared from London for Australia during 1853 was 287,332 tons, (559 ships,) and in 1852, 155,787 tons, (277 ships.)

PRICES OF GRAIN IN ENGLAND AND OTHER PARTS.

AVERAGE PRICE OF WHEAT AND OATS PER QR. IN ENGLAND AND WALES FOR TWENTY-SIX YEARS, ENDING 1853, AND WHEAT SINCE 1802.

Year.	Wheat.		Year.	Wheat.		Oats.	
	s.	d.		s.	d.	s.	d.
1802.....	67	9	1828.....	60	5	22	6
1803.....	57	1	1829.....	66	3	22	9
1804.....	60	5	1830.....	64	3	24	5
1805.....	87	1	1831.....	66	4	25	4
1806.....	76	9	1831.....	58	8	20	5
1807.....	73	1	1833.....	52	11	18	5
1808.....	78	11	1834.....	46	2	20	11
1809.....	94	5	1835.....	39	4	22	0
1810.....	103	3	1836.....	48	9	23	1
1811.....	92	5	1837.....	55	10	23	1
1812.....	122	8	1838.....	64	4	22	5
1813.....	106	6	1839.....	70	6	26	6
1814.....	72	1	1840.....	66	4	25	9
1815.....	63	8	1841.....	64	5	22	5
1816.....	76	2	1842.....	57	5	19	3
1817.....	94	0	1843.....	50	2	18	3
1818.....	83	8	1844.....	51	3	20	7
1819.....	72	3	1845.....	50	9	22	6
1820.....	67	11	1846.....	54	9	23	8
1821.....	56	2	1847.....	59	5	28	7
1822.....	44	7	1848.....	50	6	20	6
1823.....	53	5	1849.....	44	6	17	6
1824.....	64	0	1850.....	40	4	16	5
1825.....	68	7	1851.....	38	7	18	7
1826.....	58	9	1852.....	41	0	19	1
1827.....	56	9	1853.....	53	0	20	11

PRICES OF WHEAT IN FOREIGN PORTS, PER QR., IN 1852-3, MOSTLY TAKEN IN DECEMBER.

	1852.		1853.	
	s.	d.	s.	d.
Dantzic.....	49	0 to 51	67	0 to 70
Dantzic, high mixed.....	52	0	71	0
Leghorn.....	35	0	62	0
Rostock.....	46	0	70	0
Trieste.....	34	0	52	0
Hamburg.....	41	0	64	0
Petersburg.....	36	0	40	0
Genoa.....	36	0	66	0
Naples.....	39	0	65	0
Konigsberg.....	42	6	56	0
Bordeaux.....	43	0	80	0
Marseilles.....	36	0	56	0
Nantes.....	40	0	78	0
Odessa.....	23	4	39	4
Ancona.....	36	0	66	0
Stettin.....	45	0	66	0
Bilboa.....	41	0	70	0
Galatz.....	24	0	21	0
New York.....	43	0	56	0
Philadelphia.....	42	0	54	0
Montreal.....	36	0	58	0
Taganrog.....	28	0	30	0
Alexandria.....	31	0	36	0
Constantinople.....	27	6	40	0
Archangel.....	29	0	28	0

EXPORTS OF THE PRODUCTS OF THE SEA FROM THE UNITED STATES.

We compile from the Report of the Register of the Treasury, on the "Commerce and Navigation of the United States for the year ending June 30th, 1853," a statement of the quantity and value of various products of the sea, exported during the year above mentioned. This statement, it will be seen, embraces the products of the whale, including whale and other fish oil, spermaceti, whalebone, and candles, fish, dried, smoked, and pickled.

	Quantity.	Value.
Oil, spermaceti	gallons. 1,131,098	\$1,418,845
Oil, whale and other fish	321,989	223,247
Whalebone	lbs. 2,825,069	1,063,705
Spermaceti candles	343,992	112,600
Fish, dried or smoked	cwts. 131,665	371,607
Fish, pickled, in barrels	14,807	89,409
Fish, pickled, in kegs	2,027	

The total value of the products of the sea exported during the commercial year ending as above stated is, \$3,279, 413.

EXPORT OF ANIMALS AND THEIR PRODUCTS FROM THE UNITED STATES.

COMPILED FROM THE REPORT OF THE REGISTER OF THE TREASURY FOR THE YEAR ENDING JUNE 30TH, 1853.

	Quantity.	Value.
Beef	bbls. 126,041	\$2,214,554
Tallow	lbs. 3,926,598	
Hides	No. 25,955	
Horned cattle	1,076	
Butter	lbs. 2,658,911	862,343
Cheese	3,763,932	
Pork	bbls. 129,881	6,202,324
Hams and bacon	lbs. 18,390,027	
Lard	24,425,014	
Live hogs	No. 22	
Horses	1,390	246,731
Mules	1,337	
Sheep	3,669	17,808
Wool	216,472	23,567

The total value of animals and their products for the year ending June 30th, 1853, is \$7,915,259.

PRICES OF WHEAT AT ALBANY FOR 61 YEARS.

The following table, showing the price of wheat per bushel at Albany, New York, on the first of January in each year, from 1793 to 1854, has been prepared from tables kept at the office of the Van Rensselaer Manor at Albany:—

1793.....	\$0 75	1809.....	\$1 00	1825.....	\$1 00	1841.....	\$1 00
1794.....	1 00	1810.....	1 56½	1826.....	87½	1842.....	1 25
1795.....	1 37½	1811.....	1 75	1827.....	1 00	1843.....	1 87½
1796.....	2 00	1812.....	1 87½	1828.....	1 00	1844.....	1 00
1797.....	1 50	1813.....	2 25	1829.....	1 75	1845.....	0 93½
1798.....	1 25	1814.....	1 87½	1830.....	1 00	1846.....	1 18½
1799.....	1 18½	1815.....	1 62½	1831.....	1 25	1847.....	1 12½
1800.....	1 56½	1816.....	1 75	1832.....	1 25	1848.....	1 31½
1801.....	1 81½	1817.....	2 25	1833.....	1 25	1849.....	1 18½
1802.....	1 00	1818.....	1 87½	1834.....	1 00	1850.....	1 18½
1803.....	1 12½	1819.....	1 75	1835.....	1 00	1851.....	1 12½
1804.....	1 25	1820.....	1 00	1836.....	1 50	1852.....	1 00
1805.....	2 00	1821.....	75	1837.....	2 25	1853.....	1 18½
1806.....	1 43½	1822.....	1 12½	1838.....	1 62½	1854.....	1 75
1807.....	1 37½	1823.....	1 25	1839.....	1 75		
1808.....	1 12½	1824.....	1 25	1840.....	1 12½		

COMMERCE OF GLOUCESTER, MASSACHUSETTS.

During the year ending June 30th, 1853, there arrived at Gloucester, from foreign ports, 24 American vessels and 183 foreign vessels. Total number of arrivals from foreign ports 207. These vessels brought cargoes of molasses, sugar, coffee, cocoa, salt, coal, wood, lumber, &c., &c. In the same time 204 vessels cleared for foreign ports. Gloucester owns nearly 31,000 tons of shipping; being 500 tons more than the port of Salem, and 5,000 tons more than Portsmouth, N. H. 41 vessels were built last year, being more in number than in any district in New England, except Waldoboro', Bath, and Boston. The vessels built at Gloucester averaged a little more than eighty tons each. The present season will show a great increase of tonnage built in that district. Newburyport and Boston are the only places in Massachusetts that exceed Gloucester in the amount of tonnage built last year.

COMMERCIAL REGULATIONS.**NEW INSPECTION LAW OF MARYLAND,**

The provisions of the law passed at the late session of the Maryland Legislature, to "regulate inspections in the city of Baltimore," are as follows:—

SECTION 1. Be it enacted by the General Assembly of Maryland, That from and after the first day of May next, on which day this act shall go into effect, any free white citizen of the State of Maryland, on application to the clerk of the Court of Common Pleas in the city of Baltimore, and paying to the said clerk, as the case may be, the sum hereinafter named, shall be entitled to receive a license to act as inspector of the article mentioned in the license, and the several sums to be paid for licenses shall be as follows: For a license to act as inspector of leather, \$150; for a license to act as inspector of lumber, \$150; for a license to act as a gauger of casks and inspector of liquors, \$150; for a license to act as inspector and corder of firewood, \$150; for a license to act as inspector of lime, \$150; for a license to act as inspector of ground black oak bark, \$100; and for a license to act as inspector of coal, \$150; and no license shall authorize any inspector to act as such out of the limits of the city in which the same may have been granted; and any person licensed to act as inspector in said city, and who shall act as such in any city in which he has no license, shall subject himself to the penalties hereinafter provided for the punishment of persons acting as inspectors without license; and no license shall continue in force for a longer period than one year from the day of its date.

SEC. 2. And be it enacted, That any person not having a license to act as such inspector, who shall act as inspector of any of the articles named in the first section of this act, shall forfeit and pay to the sheriff of the city, as the case may be, a sum equal to double the price of the license to act as inspector of said article, as prescribed in the first section of this act, and penalty to be imposed as a fine by the court having criminal jurisdiction in the city on presentment or indictment by the grand jury, and conviction in due course of the law, and one-third of the penalty shall be paid by the sheriff to the informer, who is hereby declared competent as witness, and the residue shall be accounted for by the sheriff to the treasury of the State, as other fines and forfeitures are required to be accounted for: provided, however, that nothing in this act shall be construed to forbid the manufacturer or the actual and bona fide owner of any article or merchandise from marking or stamping thereon, or on the package containing the same, the quantity or quality of the same.

SEC. 3. And be it enacted, That any person or persons may buy or sell, export or otherwise dispose of any of the articles mentioned in the first section of this act, without having the same inspected, measured, or gauged by any inspector, but in all cases of difference between the buyer and seller, as to the quantity, quality, or measurement of any of the said articles, either party may call in any inspector of the article authorized to act in the city where the article may be situated, and the judgment of the inspector shall bind the parties.

SEC. 4. And be it enacted, That the fees for inspections shall be the same as those now fixed by law; no person shall be entitled to license or inspect, or shall act as in-

spector of any article in the manufacturing, vending, or trading in which he is engaged individually or as a partner, or as an agent, clerk, or employee of a trader, vender, or manufacturer, and that before any person shall act as inspector under the provisions of this act, he shall take and subscribe an oath in the usual form, that he will honestly and faithfully discharge the duties of said office, to be administered to him by the clerk of the court granting the license at the time said license is granted.

SEC. 5. And be it enacted, That fish imported into the city of Baltimore, which has been inspected in any other State of the Union, shall not be subjected to re-inspection, unless expressly required by the buyer or seller.

SEC. 6. And be it enacted, That all sums of money received by the clerk of the Court of Common Pleas of the city of Baltimore for license under the provisions of this act, shall be accounted for and paid into the treasury at the times and in the manner required in regard to moneys received for licenses to retailers of merchandise.

SEC. 7. And be it enacted, That the qualities heretofore existing by law in any kind of lumber or timber sold in the city of Baltimore, shall be abolished, and hereafter it shall be sold by measurement.

SEC. 8. And be it enacted, That the licenses hereinbefore required to be issued by the clerk of the Court of Common Pleas of the city of Baltimore, shall be prepared and countersigned by the controller of the treasury department, and the said clerk, shall, on or before the first Monday of May in each year, and as often thereafter as may be necessary, make application to the said controller for such number of said licenses as may probably be signed by the said clerk for one year.

COMMERCIAL REGULATIONS AT SAN FRANCISCO.

Important changes have been made in the schedule of charges on sales, forwarding insuring, etc., merchandise. The following are the rates of commissions, charges, etc., as revised, corrected and adopted by the Chamber of Commerce, San Francisco, November 3, 1853:—

SCHEDULE 1ST.—RATE OF COMMISSION ON BUSINESS WITH FOREIGN COUNTRIES, AND WITH THE ATLANTIC STATES, WHEN NO SPECIAL AGREEMENT EXISTS.

Sale of merchandise with or without guaranty.....	per cent.	10
Purchase and shipment of merchandise with funds in hand.....		5
Without funds in hand		7½
Goods received on consignment and afterwards withdrawn on invoice cost...		5
Indorsing bills of exchange when desired.....		2½
Purchase or sale of vessels.....		2½
Collecting freights.....		2½
Collecting general claims		5
Purchase and sale of specie, gold dust, or bullion.....		1
Entering, clearing, and transacting ships' business on vessels with cargo from foreign ports.....		\$200
Entering, clearing, and transacting ships' business on vessels with cargo from the United States ports, where no other commission is earned.....		200
Do. on vessels in ballast.....		50
Collecting and remitting moneys on sums over \$500.....	per cent.	5
Collecting and remitting delayed or litigated accounts.....		10
Disbursements of vessels with funds in hand.....		2½
Do. without funds in hand		5
Do. of vessels in distress.....		5
Receiving and paying, or remitting moneys from which no other commission is derived.....	per cent.	2½
Landing and reshipping goods from vessels in distress, on invoice value, or in its absence, on market value.....	per cent.	5
Receiving, entering at the custom-house, and forwarding the goods, on invoice amount.....	per cent.	2½
Effecting commission marine insurance, on amount insured.....		1
Collecting general average on sums less than \$5,000		10
Do. on sums over \$5,000.....		5

SCHEDULE 2D.—RATE OF COMMISSION ON BUSINESS WITHIN THE STATE, WHERE NO SPECIAL AGREEMENT EXISTS.

Sale of merchandise with guaranty.....	per cent.	10
Purchase and shipment of goods, with funds or security in hand.....		5
Do. without funds or security in hand.....		7½
Sales of bills of exchange with indorsement.....		3
Do. without indorsement.....		1
Sale or purchase of vessels.....		2½
Purchase or sale of specie, gold dust, or bullion.....		1
Chartering of vessels or procuring freight.....		5
Collecting freights.....		5
Outfits of vessels, of disbursements.....		5
Collecting moneys, when no other commission is earned.....		5
Receiving and forwarding goods.....		2½
Collecting bills protested, or delayed and litigated accounts.....		10
Brokerage.....		2½

SCHEDULE 3D.—RATES OF STORAGE ON MERCHANDISE.

Measurement goods per month \$2 per ton of 40 cubic feet. Heavy goods \$1 50 per ton of 2,000 pounds—or in either case the amount actually paid. The consignee to have the option of charging by weight or measurement. A fraction of a month to be charged as a month.

SCHEDULE 4TH.—CONCERNING DELIVERY OF MERCHANDISE, PAYMENT OF FREIGHTS, ETC.

When no express stipulation exists, per bill of lading, goods are to be considered deliverable on shore.

Freight on all goods to be paid or secured to the satisfaction of the captain or consignee of the vessel, prior to the delivery of goods.

Goods must be received by the consignee after notice being given of the ship's readiness to discharge in five days, when not otherwise stipulated in the bill of lading.

After the delivery to the purchaser of merchandise sold, no claims for damage, deficiency, or other cause, shall be admissible, unless made within three days, and no such claims shall be admissible after goods sold and delivered have once left the city.

SCHEDULE 5TH.—CONCERNING FOREIGN BILLS OF LADING.

When foreign bills of lading do not expressly stipulate the payment of freight in a specific coin, foreign currency shall be reckoned according to the United States value thereof, and payment may be made in any legal tender of the United States.

Where foreign bills of lading expressly stipulate that the freight shall be paid in a specified coin, then the same must be procured if required, or its equivalent given, the rate to be determined by the current value at the time in San Francisco.

SCHEDULE 6TH.—CONCERNING RATES OF TARES.

To be allowed as by custom in New York.

The Chamber of Commerce of San Francisco was organized May 1, 1850; Incorporated November 3, 1851. Officers for 1853: President, Beverly C. Sanders; First Vice President, Geo. Lewis Cooke; Second Vice President, Geo. Clifford; Secretary, Treasurer, and Librarian, Lewis W. Sloat; Committee of Appeals, D. L. Ross, S. B. Thomas, J. J. Chauviteau, Edwin Herrick, W. T. Coleman, I. Friedlander.

MACQUINO CURRENCY, ISLAND OF PORTO RICO.

TO COLLECTORS AND OTHER OFFICERS OF THE CUSTOMS.

TREASURY DEPARTMENT, May 1st, 1854.

Since the date of the General Instructions, No. 21, transmitted to you on the 10th ultimo, this department has been advised by the consul of the United States at St. Johns, in the island of Porto Rico, that the authorities of that island had determined, on the 20th March last, that, after that date, the value of the silver dollar of the United States of the coinage of 1853 and after, should be at the rate of one hundred and eighty cents Macquino, or eight per cent premium over the Macquino currency of the said island of Porto Rico.

You will be regulated accordingly, in your estimate of duties on invoices of goods from said island arriving at your port.

JAMES GUTHRIE, Secretary of the Treasury.

JOURNAL OF INSURANCE.

LIFE INSURANCE.

CONSTRUCTION OF INSURANCE POLICY—CREDITOR'S RIGHT TO INSURE HIS DEBTOR'S LIFE.

The Supreme Court of New York (City) made in April, 1854, the following decision in the case of the Mutual Life Insurance Company of New York *vs.* Ambrose Wager, Judge Mitchell on the bench:—

This was an action to recover back the amount of a policy of insurance paid to defendant, on the ground that the policy was fraudulently obtained. It appeared that in the year 1845 the defendant effected with plaintiffs a policy of insurance on the life of W. Frisbee, of Rhinebeck, for \$2,500. Frisbee lived for about six years after the policy was effected, and then died, and the plaintiffs paid the amount of it to the defendant. They now seek to recover it back, on the grounds that when the policy was effected, and for some time before, Frisbee was in consumption, and also that he was not indebted to the defendant to the amount of the policy, or to any extent.

Medical and other witnesses were examined at both sides, as to Frisbee's health at the time the policy was effected, and afterwards; from which it appeared that for many years before his death he was affected with chronic bronchitis, and that he sometimes spit blood; but it did not appear that the spitting of blood was of such a character as to denote consumption, or disease of the lungs. It also appeared, that when the policy was made the plaintiffs were informed that he had a chronic bronchitis. As to his not being in debt to the defendant, several witnesses, who were intimate with Frisbee, testified that they were not aware that he was indebted to the defendant. But the negative testimony was met by the positive testimony of other witnesses, who deposed that defendant was constantly in the habit of advancing money to Frisbee.

The court charged the jury. The two most important questions for them to determine were, first, had Frisbee a spitting of blood within the meaning of the policy, or any disease that would shorten life? If he had either of those diseases, the plaintiffs were entitled to recover. If he had neither of those diseases, the plaintiffs cannot recover on that ground. Or if he had either or both of those diseases, and that defendant had no knowledge of it, then the plaintiffs cannot recover. There must have been one or the other of those diseases, and it must have been known to defendant. As to the meaning of "spitting of blood," the definition I give of it is, any spitting of blood which would tend to shorten life, or be as dangerous to life as any one of the diseases mentioned in the policy, being rupture, fits, dropsy, asthma, or spitting of blood. But it must have existed at the time the policy was effected, or antecedent to it.

The only other question of law is, as to the rights of the company to recover, because the defendant had no interest in the life of the person insured. It is said that he had an interest in it, because he was his creditor. If he informed the company, when the insurance was being effected, that it was made for what was then due to him by Frisbee, and also for what advances he would afterward make him, then those advances would be protected by the policy. But if the whole of those advances did not amount to \$2,500, then he would be entitled to no more than he advanced; and if he recovered \$2,500, and there was not so much due to him by Frisbee, then the company would be entitled to the difference. In regard to Frisbee's state of health, there was no doubt that in 1841 he had a chronic bronchitis, and that from that time to his death he had a severe cough in the morning, and threw up mucus, and was relieved; but it was not very frequent or severe, as it only required the attendance of a doctor twice. But that does not come within the medium of the policy, and I think the fair conclusion is, that at the time the policy was made, Frisbee was not in consumption. If after the policy was made, defendant had knowledge of Frisbee's state of health, that would not affect the policy. If it were a mere *wager* policy, the plaintiffs are entitled to recover. But if the jury come to the conclusion that advances were made by defendant to the amount of the policy, and that Frisbee, at the time the policy was made, had no disease within the meaning of the policy, or that if he had it was unknown to defendant, then they should find for defendant.

Verdict for defendant. The court also awarded \$100 to the defendant, on the ground that the suit was improperly brought.

PROPERTY DESTROYED BY FIRE IN SAN FRANCISCO.

A late number of the *Alta California* contains an elaborate account of the third annual celebration of the San Francisco Fire Department. After the reading of an ode written for the occasion, the Hon. EDWARD STANLEY delivered an oration, from which we make the following extract, showing the loss of property by fire since May 4th, 1850:—

"With all the energy of our people, aided by some of the best from other climes—by the lively, impetuous, enterprising countrymen of Lafayette—by the indomitable energy and resolute spirit of the English and Irish—by the industrious and steady German, much was still wanting. This want was supplied by the organization of our fire companies. For in 1849, when men of foresight and judgment began to believe a city would be founded here, when stores were erected and dwelling houses built, the fire came, and in a few hours how many bright prospects were blasted! How many houseless and unprotected heads were wandering here, that a few hours before were comfortable, and calculating on long years of happy enjoyment? How many millions of property were destroyed by fire in a day, before your organization?"

Let a few facts, which an intelligent gentleman, an active member of one of your companies, has furnished me, answer:—

On December 24, 1849, fire destroyed property amounting to.....	\$1,250,000
May 4, 1850, property amounting to.....	4,250,000
June 14, 1850, property amounting to.....	3,500,000
September 17, 1850, property amounting to.....	1,000,000
October 31, 1850, property amounting to.....	250,000
December 14, 1850, property amounting to.....	1,000,000

In one year.....	\$11,250,000
On May 4, 1851, property amounting to.....	12,000,000
June 22, 1851, property amounting to.....	2,500,000

In eighteen months.....	\$25,750,000
Fires since that time.....	1,500,000

Total.....	\$27,250,000
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In a period of eighteen months, more than twenty-five millions were destroyed; since that time, more than two years, not two millions! not as much as was destroyed at a late fire in New York. And may we not now, when with pride we behold what our city now is, may we not say, if you seek for any monument of what our firemen have done—"Walk through our streets and look around you?"

STOCKS IN INSURANCE COMPANIES HELD BY FOREIGNERS.

Place.	No. of companies.	Capital paid in.	Held by foreigners.
Boston.....	12	\$2,786,450	\$3,000
Other Massachusetts.....	10	981,100	None.
New York and Brooklyn.....	32	5,846,000	192,352
Philadelphia.....	7	2,042,820	101,020
Baltimore.....	4	536,280	None.
Charleston, South Carolina.....	2	.....	None.
Mobile.....	3	250,000	81,800
New Orleans.....	3	.....	None.
Richmond, Virginia.....	1	190,080	None.
Frederick, Maryland.....	1	97,000	None.
Total.....	75	\$12,829,730	\$378,172

The number of insurance companies in the country is not known; but it is to be presumed that few, if any of them, except in the cities above-mentioned, have any foreign stockholders.

MARINE LOSSES BY BOSTON COMPANIES.

The new ship Troubadour, of Boston, Capt. Pedrick, from Newburyport for New Orleans, was lost on Berry Islands, 26th of March, 1854. She was a good ship, of 1,200 tons, and was on her first voyage. She was owned by Messrs. Fisher & Co. There was insurance to the amount of \$95,000 on vessel and freight, at the following offices in Boston:—

	Vessel.	Freight.	Total.		Vessel.	Freight.	Total.
Alliance.....	\$15,000	\$5,000	\$20,000	Hope	\$15,000	\$2,000	\$17,000
China	15,000	5,000	20,000	Washington..	10,000	.....	10,000
Neptune.	15,000	3,000	18,000	Warren .....	.....	10,000	10,000
Total						\$70,000	\$25,000 \$95,000

The ship Saxony, of Boston, from Halifax for Mantanzas, has also been wrecked off Cape Florida. The vessel is insured in Boston for about \$20,000.

The brig Salisbury, of Newburyport, lost on Berry Islands, is insured in Boston at the Alliance office.

POLICY OF INSURANCE—AVERAGE LOSS—SET-OFF.

Where the claim of a plaintiff is for an average loss on a policy of insurance on goods, the defendant cannot set up a counter demand for other matters, or, in technical language, cannot plead a set-off; it being a rule of law that a plea of set-off cannot be pleaded to a demand for unliquidated damages, and it has been invariably considered that a claim for an average loss on a policy of insurance is a demand for unliquidated damages.—*Castelli vs. Boddington*, 20, *Law Times Rep.*, 64.

NAUTICAL INTELLIGENCE.

NOTICE TO MARINERS.

EXHIBITION OF A NEW REVOLVING LIGHT AT NORTH RONALDSHAY, AND ALTERATION OF THE START-POINT LIGHT FROM A REVOLVING LIGHT TO A FIXED LIGHT.

1. NORTH RONALDSHAY LIGHTHOUSE.

The Commissioners of the Northern Lighthouses hereby give notice that a new lighthouse is being built upon the Island of North Ronaldshay, in Orkney, the light of which will be exhibited on the night of Friday the 1st September, 1854, and every night thereafter, from the going away of daylight in the evening, to the return of daylight in the morning.

The following is a description of the lighthouse and the appearance of the light, by Mr. David Stevenson, Engineer to the Commissioners:—

The lighthouse is in N. lat. $59^{\circ} 23' 15''$ and W. long. $2^{\circ} 23' 38''$; it stands on the northern point of the Island of North Ronaldshay, and by compass it bears from Moul head of Papa-Westra W. N. W. $\frac{1}{2}$ N., distance 15 nautic miles; and from Start-Point of Sanday Lighthouse, S. S. W. $\frac{1}{2}$ W., distance $6\frac{1}{2}$ miles.

The North Ronaldshay Light will be known to mariners as a revolving light, producing a bright flash of the natural color once in every 10 seconds. It will be visible all round the compass. The lantern is elevated 140 feet above the level of the sea; and the light will be seen at the distance of about 18 nautic miles, and at lesser distances, according to the state of the atmosphere.

2. START-POINT LIGHTHOUSE.

The Start-Point Light, which is $6\frac{1}{2}$ miles from North Ronaldshay Light, being at present a revolving light, producing a bright flash once in every minute, the Commissioners further give notice, that on and after the night of Friday, the 1st September, 1854, when the new revolving light at North Ronaldshay is to be exhibited, the present revolving light at Start-Point will be changed to a fixed light of the natural color. By order of the Board,

ALEX. CUNNINGHAM, Secretary.

NAVIGATION INTO SPITHEAD.

NOTICE TO MARINERS.

TRINITY HOUSE, LONDON, 3d May, 1854.

Pursuant to the intention expressed in the Notice from this House, dated the 5th ultimo, a floating light-vessel has been moored on the west side of the channel, near to the Warner shoal, and a light is now exhibited therefrom every night from sunset to sunrise, for the purpose of facilitating the navigation of vessels into and out of Spit-head during the night-time.

The light at this station is of the natural color, revolves, and shows a bright flash once in every minute, and the vessel is moored in 13 fathoms at low-water spring tides, with the following marks and compass bearings:—

The water mill at St. Helen's, half its breadth open of St. Helen's sea-mark, S. W. by W. $\frac{1}{4}$ W. The outer end of Ryde Pier, between the towers of Osborne, N. W. by W. Noman's Land Buoy, N. W. by N. Horse Elbow Buoy, N. E. $\frac{1}{4}$ N. Dean Tail Buoy, E. S. E. Bembridge light-vessel, S. $\frac{1}{4}$ E.

By order,

J. HERBERT, Secretary.

INVENTION FOR REEFING SAILS OF VESSELS.

The *Portsmouth Journal* says: Mr. Wm. H. Foster, of that city, has perfected his invention for reefing sails, and that it is satisfactory to scientific gentlemen and experienced seamen who have witnessed its operation. The yard does not revolve like that which was tried in England many years ago, but is fastened to the barrel in the usual manner. The sail is also attached to the yards in the old way. It works entirely upon the principle of the pulley. It is simple, but exceedingly ingenious. The weight of the topsail yard, in being lowered by loosening the halyards, is directly applied to the reefing and furling of the sail at the same time. A single hand on deck, however incredible it may seem, is enabled to take in each reef, even to close reef, and furl any sail in less time than a single minute.

LIGHTHOUSE AT WINTERTON.

NOTICE TO MARINERS.

TRINITY HOUSE, LONDON, May 4, 1854.

Notice is hereby given that, with the object of rendering the lighthouse at Winterton more distinctly visible from vessels at sea during the daytime, the tower is about to be colored *red*. The buildings around it will continue *white*, as they are at present.

By order,

J. HERBERT, Secretary.

MYSTERIES OF THE OCEAN.

A paper containing the results of various observations made in the coast survey by A. D. Bache, was read before the Scientific Association at its late session in Washington. Among other interesting passages was one relating to the shape of the floor or bottom of the ocean, showing that some extraordinary depressions exist along our own coast. The following outline of the remarks upon this subject is quoted from the *National Intelligencer*:—

For instance, on the seaward line abreast of Charleston, from the shore to sixty miles out, the depth increases pretty gradually, till at that distance it has acquired a depth of one hundred fathoms. But it soon deepens with great rapidity, as if on the side of a mountain, until at about eighty miles out the ocean bottom is more than six hundred and fifty fathoms from the surface. This continues forward less than ten miles, when the depth as suddenly decreases to not more than three hundred and fifty fathoms, which so goes on only a few miles, when it again deepens to about five hundred fathoms, with subsequent fluctuations. There is, therefore, a submerged mountain peak or ridge between these points, of a truly remarkable character. The differences in the temperature of the water vary almost precisely according to the change of contour of the bottom, showing that the temperature at great depths is much modified by the propinquity of the ocean's bed. It appears that the Gulf Stream, whilst certainly not superficial, does not run to the bottom, for off Cape Florida, at twelve hundred fathoms, the water in summer is of a temperature of 38° Fahrenheit, a degree below the average Winter temperature much further north.

RAILROAD, CANAL, AND STEAMBOAT STATISTICS.

RAILROAD STOCKS HELD BY FOREIGNERS.

The following is one of the tables communicated to the Senate of the United States by the Secretary of the Treasury, for the purpose of showing the amount of American securities held by foreigners on the 30th of June, 1853:—

From returns made, with a few exceptions, by their own officers, (222 railroads:)—

Capital authorized.....	\$380,201,100
Capital paid in.....	256,750,422
Capital held by foreigners.....	7,044,025
Bonds outstanding.....	143,958,868
Bonds held by foreigners.....	36,125,172
Total of capital paid in and bonds outstanding.....	400,709,290
Total of capital and bonds held by foreigners.....	43,169,777

Returns from 22 other railroad companies, part obtained from the *American Railroad Journal*, and part obtained from brokers:—

Capital paid in.....	\$53,143,545
Bonds outstanding.....	26,151,684

Supposing the proportion of capital stock and bonds held by foreigners in these companies to be the same as in the companies from which returns have been directly received, we have the following results:—

Capital paid in.....	\$309,893,967
Capital held by foreigners.....	8,025,990
Bonds outstanding.....	170,111,552
Bonds held by foreigners.....	43,888,752
Total of capital paid in and bonds outstanding.....	480,005,519
Total of capital and bonds held by foreigners.....	51,914,742

THE RAILROADS OF THE STATE OF NEW YORK.

In the *Merchants' Magazine* for May, 1854, (vol. xxx., pp. 631-3,) we published very complete tabular statements of operations of all the railroads of Massachusetts for the year 1853, carefully compiled for our magazine from the annual reports made to the Legislature of that State. We are now indebted to WILLIAM J. McALPINE, Esq., State Engineer and Surveyor, for an official copy of his Report on the Railroads of the State of New York, for the year 1853. It is a very able, full, and complete document. The manner adopted by Mr. McALPINE of preparing these tables, furnishes the means of detecting many of the errors; and it is believed that the publication of the errors will be found one of the most effectual means of inducing more care in the preparation of the reports hereafter.

We will now lay before our readers Mr. McALPINE's admirable abstract of the report, which covers 424 octavo pages, and in a future number of the *Merchants' Magazine* we shall give the most important tabular statements of the operations of the different roads in the State.

The length of all the railroads in operation in the State is.....miles.	2,432
The length of railroads laid is about.....	2,497
The length of double track in addition to the above is.....	664
The number of locomotives in use is.....No.	586
The number of passenger cars in use is.....	834
The number of baggage and freight cars in use is.....	6,895
The number of miles run by passenger trains is about.....miles.	6,594,963
The number of miles run by freight trains is.....	4,227,807
Total number of miles run.....	10,822,770

The whole number of miles traveled by the passengers is about	531,572,298
The whole number of miles each ton of freight was moved, or the number of tons moved one mile, is	246,554,492
The capital stock of which is about	\$112,038,131 45
The capital stock paid in is about	61,238,829 22
The amount of funded and floating debt is	59,669,478 38
The amount paid for construction and equipment is	117,707,620 58

The average distance which each passenger traveled would appear, from the footing of the report, to be $44\frac{1}{2}$ miles, and the average distance which each ton of freight was moved would appear to be $65\frac{1}{2}$ miles. But these average distances should be slightly increased, in consequence of a portion of the passengers and freight being carried over two or more roads, and the number of passengers and tons of freight being in those cases reported on each road. Twenty-three railroad corporations have made full reports, from which the following statements are made:—

The length of railroads is	miles.	2,103
The capital stock as per charter		\$54,748,800 00
" " subscribed		50,137,263 03
" " paid in		47,430,865 04
The amount of funded debt is		43,346,781 27
The amount of floating debt		7,111,590 64
The amount expended in grading and bridging		35,457,962 75
The amount expended on superstructure		7,681,097 75
The amount expended in station buildings		3,214,424 78
The amount expended in engine houses and machine shops		1,209,205 76
The amount expended for land damages and fences		7,781,299 73
The amount expended for engineering and agencies		3,254,501 64
The amount expended for locomotives and cars		9,686,520 77
The total amount expended in construction and equipment, including grading and superstructure		95,466,243 59
The total amount expended in construction and equipment, including grading and superstructure, during the year		19,130,411 44
The whole length of road is	miles.	2,093
The whole length of second track laid on the above is		554
The number of locomotives		490
Number of passenger and emigrant cars		595
Number of baggage and freight cars		5,388
Miles run by the passenger trains for the year		5,234,963
Passengers carried in the cars, as reported*		2,841,147
The number of miles traveled by all the passengers		397,272,298*
Number of miles run by the freight trains		3,564,807
Miles of movement of the freight		219,454,492
The cost of maintenance of way (17 roads only reporting this item)		\$1,447,876 65
Charged to passenger business	\$874,895 50	
" freight business	606,893 08	
The cost of repairs of machinery on 18 roads reporting is		1,403,154 81
Charged to passenger business	\$817,570 51	
" freight business	564,771 35	
The cost of operating on 19 roads reporting is		4,159,310 51
Charged to passenger business	\$2,155,597 92	
" freight business	1,945,990 64	
The receipts on 19 roads reporting are:—		
From passengers	\$6,799,953 82	
freight	5,890,638 10	
other sources	602,298 46	
		13,292,890 38

* The actual number of passengers carried is considerably less than the number above stated.

The payments, other than for construction, on 19 roads were:—

For transportation	\$6,418,187 71	
For interest on debts	2,644,252 63	
For dividends	2,217,536 04	
		\$11,279,976 38

The average cost of construction and equipment per mile of road of those railroads which have reported these items, has been as follows:—

For graduation, masonry, and bridges for 2,066 miles	\$17,162 61
Superstructure, including iron, for do.	11,915 61
Station buildings for do.	1,555 87
Engine houses and machine shops for do.	585 29
Land and fencing for do.	3,751 30
Total expense per mile of construction and equipment for 2,105 miles of road	45,091 84

The average cost per mile of single track:—

For graduation, masonry, and bridges for 2,663 miles	\$13,315 04
Superstructure, including iron, for do.	9,244 30
Station buildings for do.	1,207 00
Engine houses and machine shops for do.	450 96
Land and fencing for do.	2,922 00
All expenses of construction and equipment for 2,723 miles	35,059 32

The number of locomotives on 2,076 miles is one to $4\frac{1}{2}$ miles of road.

“ passenger cars “ “ “	$4\frac{1}{2}$ “
“ freight cars “ “ “	0 38-100 “

The average mileage of the passengers for each mile run by the trains, 76. The average distance traveled by each passenger is nearly $48\frac{1}{2}$ miles. The average speed of the express trains when in motion is 40 miles per hour. The average number of tons of freight for each mile run by the trains is 62. The average distance each ton of freight was moved is $72\frac{1}{2}$ miles. The average speed of the freight trains when in motion is 16 miles per hour. The average weight of the freight trains, exclusive of the freight carried, is 160 tons.

The roads reporting the amount of freight carried show an aggregate of 2,831,336 tons passing over those roads, but as the same freight is frequently carried over two or more connecting roads, on each of which it is reported, the footing of these several amounts does not show the true aggregate of the tonnage carried. As near as can be ascertained, about one and a half millions of tons of freight were carried on all the railroads of the State.

The reports furnish the number of tons of each classification of freight carried, but as the aggregate returns must necessarily contain the errors above mentioned, these aggregates are only useful to show the proportions of each description of freight shipped, which are nearly as follow:—

The tonnage of the product of the forest is $\frac{1}{2}$ per cent of the whole tonnage; product of animals, 20 per cent; vegetable food, 22 per cent; other agricultural products, 4 per cent; manufactures, 12 per cent; merchandise, 11 per cent; unclassified articles, 17 per cent.

THE AVERAGE COST OF MAINTENANCE OF WAY PER MILE OF ROAD.

	Charged to the business of Passengers.	Freight.
For repairs of road-bed	\$374 31	\$259 61
For repairs of buildings	22 87	17 62
For repairs of fences	11 38	6 83
For taxes	46 87	38 75
All expenses of maintenance of way	\$455 43	\$322 81
For all expenses, both passengers and freight, \$699 12.		

THE AVERAGE COST OF REPAIRS OF MACHINERY PER MILE RUN BY THE TRAINS.

	Cents.	Cents.
For repairs of engines	8.78	7.70
For repairs of cars	6.07	7.30
For repairs of tools	0.64	0.70
For oil and waste	0.97	1.10
For all repairs of machinery	16.45	16.80

THE AVERAGE COST OF REPAIRS OF MACHINERY PER PASSENGER AND PER TON OF FREIGHT CARRIED ONE MILE.

	Mills.	Mills.
For repairs of engines	1.10	1.20
For repairs of cars	0.80	1.20
For repairs of tools	0.10	0.10
For oil and waste	0.11	0.10
For all repairs of machinery	2.11	2.60

THE AVERAGE COST OF OPERATING THE ROADS PER MILE RUN BY THE TRAINS.

	Charged to the business of	
	Passengers.	Freight.
	Cents.	Cents.
For office expenses, stationery	0.90	1.10
Agents and clerks	4.30	5.56
Labor, loading and unloading	...	9.33
Porters, watchmen, and switchmen	2.60	2.31
Wood and water station attendance	0.93	0.79
Conductors, baggage, and brakemen	5.00	6.10
Enginemen and firemen	5.00	6.10
Fuel—cost, and labor of preparing	13.60	15.50
Oil and waste for engines	1.83	2.24
Oil and waste for cars	0.69	1.30
Loss and damage to goods and baggage	0.57	1.30
Damages for injuries to persons	1.20	0.22
Damages to property and cattle	0.43	0.44
General superintendence	1.20	1.38
Contingencies	4.50	3.90
All expenses of operating	42.80	57.67

THE SAME PER PASSENGER AND PER TON CARRIED ONE MILE.

	Mills.	Mills.
For office expenses and stationery	0.10	0.20
Agents and clerks	0.54	0.90
Labor, loading and unloading	...	1.50
Porters, switchmen, and watchmen	0.34	0.30
Wood and water station attendance	0.10	0.10
Conductors, baggage, and brakemen	0.64	1.00
Engine and firemen	0.64	1.00
Fuel—cost, and labor of preparing	1.70	2.50
Oil and waste for engines	0.23	0.30
Oil and waste for cars	0.10	0.20
Loss and damage to goods and baggage	0.10	0.20
Damages for injuries to persons	0.32	0.05
Damages to property and cattle	0.06	0.10
General superintendence	0.17	0.20
Contingencies	0.52	0.65
All expenses of operating	5.56	9.20

The average receipts per mile of road, are as follows:—

From passengers	\$3,270 78
“ Freight	2,833 40
“ Other sources	289 70
	<u>6,392 88</u>

The receipts per mile run by the trains are as follows:—

From passengers	\$1 34
“ Freight	1 73
“ Passengers, freight, and other sources	1 56

The receipts per passenger per mile carried, was	1.75 cents.
“ ton of freight carried one mile	2.8 “

By comparing the foregoing average expenses with those furnished in the last report, it will be observed that the cost of the repairs of the track per mile of road, exceeds that of the preceding year nearly fifty per cent, but that the repairs of machinery per mile run by the trains is about the same. The better condition of the track has prevented the expense for repairs of machinery from increasing with the increased rates of speed which are now adopted. The expenses of operating the roads have increased about twenty per cent over those of the preceding year, owing to the increased speed of the trains, and to the higher price of labor.

The following statements, which are exhibited by the tables, will show how widely the cost and expenses of the various roads differ from each other:—

	Highest.	Lowest.	Average.
Cost of graduation and masonry.....per mile.	\$35,099 38	\$5,540 57	\$17,162 61
Superstructure	25,218 02	5,040 14	11,915 31
Land and fences.....	6,448 93	1,080 28	3,750 30
Construction and equipment.....	81,812 16	16,848 98	45,091 84
Graduation and masonry, single track.....	21,507 70	5,200 52	.....
Superstructure, do.....	12,150 50	4,896 32	.....
Land and fences, do.....	5,573 76	1,140 23	.....
Construction and equipment, do.....	50,131 68	16,040 41	.....
	Highest.	Lowest.	Average.
	cents.	cents.	cents.
Maintenance of way per mile run by passenger trains.	31.39	10.98	.....
“ “ “ freight “	56.39	8.05	.....
Repairs of machinery per mile, passenger trains....	25.57	4.31	.....
“ “ “ freight “	27.58	7.93	.....
Operating machinery per mile, passenger trains....	72.69	22.48	.....
“ “ “ freight “	226.79	30.12	.....
Repairs of machinery per mile run by passenger trns.	.....	.....	.....
Repairs of engines.....	14.44	3.27	.....
“ cars.....	9.29	0.70	.....
“ tools.....	1.59	0.03	.....
By freight trains, repairs of engines.....	17.68	1.69	.....
“ “ cars.....	18.02	2.54	.....
“ “ tools.....	0.85	0.16	.....

COST OF OPERATING, PER MILE RUN BY TRAINS.

	Highest.	Lowest.	Average *
	cents.	cents.	cents.
Passenger agents.....	10.85	1.17	4.30
Fuel.....	29.15	3.89	13.60
Conductors, etc.....	10.49	0.86	5.00
Enginemen.....	8.33	2.96	5.00
Freight agents.....	67.86	1.84	5.56
Fuel.....	52.75	5.58	15.50
Conductors, etc.....	48.12	3.05	6.10
Enginemen.....	40.12	2.75	6.10

To obtain an accurate average, it has been necessary to reject some of the lowest results, and such of the reports as appeared to be evidently erroneous.

The tables, in some cases, show pretty plainly that these errors are caused either by carelessness or design, probably for the purpose of reducing the expense of some particular item.

The number of passengers carried on the cars, as reported by 20 roads,	
was	5,172,154
The number of miles traveled	390,677,283
The whole number of passengers injured.....	19
Of whom were killed	11
The whole number of employees injured	97
Of whom were killed	56
The whole number of others injured.....	90
Of whom were killed.....	67
Making the total number injured.....	203
Of whom were killed.....	180

One passenger was killed for every 35,516,116 miles traveled, and one passenger was injured for every 48,834,660 miles traveled.

The classification of these accidents is as follows:—

	Passengers.		Employees.		Others.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Jumping on or off trains while in motion...	5	1	9	4	..	..
Fell or thrown from the trains.....	3	1	16	7	..	..
Collision of trains	2	5	7	7	..	..
Trains thrown from the track.....	..	1	5	5	..	..
Run over while walking or standing on the track.....	..	..	9	1	46	16
Collisions at road crossings	..	..	1	..	8	2
At work on, or standing by trains.....	..	..	4	14	1	2
Standing on platform	1	..	2	..	..	..
Defective machinery.....	..	..	3	2	4	2
Other accidents	..	..	1	2	6	1
	11	8	57	42	65	23

The whole number of passengers carried in the cars on 20 railroads, was	8,174,363
The number of miles traveled.....	397,272,298
The whole number of passengers injured.....	19
Of whom were killed	11
The whole number of employees injured.....	97
Of whom were killed.....	56
The whole number of others injured.....	93
Of whom were killed.....	70
Making the total number injured.....	209
Of whom were killed	137

One passenger was killed for every 36,115,663 miles traveled, and one passenger was injured for every 49,662,037 miles traveled.

The classification of these accidents is as follows:—

	Killed.	Injured.
Jumping on or off trains in motion.....	14	5
Fell or thrown from trains.....	19	8
Collisions of trains.....	9	13
Trains thrown off the track	5	5
Run over while walking, standing, or lying on the track.....	57	17
Collisions with vehicles at road crossings.....	10	2
At work on, or standing by trains.....	5	16
Standing on platforms.....	3	..
Defective machinery.....	7	4
Other accidents	7	3
Total.....	136	73

It will be observed how few accidents have occurred to passengers from causes beyond their own control. One passenger was killed from such causes for every 198,636,149 miles traveled, and one passenger injured for every 66,212,050 miles traveled. Twenty-one per cent only of the accidents causing death, and thirty-three per cent of the accidents not causing death to the employees, were from causes beyond their control. By a comparison of the ratio of accidents and miles traveled in 1852 with that of 1853, it will be observed that during the last year the passengers traveled nearly three times the distance traveled in the former year before meeting with an accident causing death, and one quarter farther before meeting with an accident not resulting in death. These evidences of the increased safety of railroad traveling, both to the passenger and the workman, will be as gratifying to the passengers of railroads as they are to the public, especially when it is remembered that the speed of trains has been greatly increased during the past year.

This is partly due to the better condition in which the track and machinery are now maintained, and partly to the observance of greater care on the part of the travelers, and to the exercise of greater skill on the part of the managers and workmen.

The canals of this State have mostly been constructed at the expense of the State government, and the railroads by private capital, aided in some instances by loans and donations from the government. These works are more remarkable for their extent than for the natural obstacles overcome, and required in their execution more ability from their financial than from their engineering managers. The latter have, in most cases, been restrained by the former from expenditures for any purpose not demanded by the most rigid utility, and hence no opportunity has been afforded for those exhibitions of engineering talent which have distinguished the profession in other countries.

The State works, especially, have been constructed with an economy of expenditure that is hardly credited by the engineers of Europe. In some instances this economy has been carried to such an extent as to require the works to be re-built in a more permanent manner. Yet this policy has seldom proved injudicious, as the construction of the first works lessened the cost of those subsequently built, by facilitating the transportation of the materials used, and by developing the resources of the country and demonstrating the value of the improvement.

The State works exhibit the best specimens of the construction of earthen banks for the retention of water, and of well-arranged and durable masonry, which are to be found in the world. In this respect, the enlarged Erie Canal and the Croton Aqueduct, (built by the City of New York,) surpass any similar undertakings in the judicious permanency of their various works.

The works of the Delaware and Hudson Canal, built by an incorporated company, and those of the Chenango Canal, built by the State, furnish the most favorable specimens of a rigidly economical application of expenditure suited to the circumstances of the respective cases.

The railroads of New York State show every variety of construction, from that which involved the largest expenditure, to that which was executed with the most rigid economy. The former has been chiefly caused by the progressive improvements which have been made in the construction of this species of internal improvement. The engineers of this country began the construction of railroads by following the plans laid down by their European brethren; as the latter had unlimited command of capital, so long as their plans were followed in this country the progress of the railroad system was comparatively slow, because capital could not be obtained, and roads thus constructed were not remunerative.

The Albany and Schenectady Railroad, in New York State, and the Baltimore and Ohio, in Maryland, were commenced on these expensive plans, copied mainly from those of the Liverpool and Manchester Road, in England. The substitution of a gravel road bed and wooden cross-ties for the expensive foundations of McAdamized stone, timber, and cross-ties of the English roads, is due to an engineer of this State. This substitution has caused a radical change in the system of railroad construction, not only in this country but in Europe. The railroads of New York now furnish the best specimens of large wooden bridges, locomotives, engines, and cars, and we hope soon to be able also to record the successful application of wire suspension bridges to railroad purposes, which has been pronounced impracticable by European engineers.

The project of improving the navigation of the Mohawk, and extending a water line across the portage to Lake Ontario, attracted the attention of the public men of this State at a very early day.

The cost of transportation of furs and the Indian supplies between the interior lakes and the Hudson was alluded to by the surveyor general in 1724, and the improvement, by means of a canal, of the rapids of the Mohawk, by the governor in 1768.

Immediately after the Revolution this subject was again brought forward. In 1784 a plan for improving the Mohawk was proposed to the Legislature, and in 1791 they directed surveys and estimates to be made for building canals across the portage from the Mohawk to Lake Ontario, and from the Hudson to Lake Champlain. The following year they chartered a company who built canals and locks at the Little Falls, the German Flats, and at Wood Creek, at a cost of \$400,000.

In 1808 the surveyor general was directed to survey a route for a canal from the Hudson to Lake Erie. He employed James Geddes, who reported that canals could be made from Oneida Lake to Lake Ontario, around the Falls of Niagara, and on a direct route from Seneca River to Lake Erie. Three years later a commission reported that a continuous canal, on an inclined plane, from Lake Erie to the Hudson was practicable, and would cost \$5,000,000.

The Legislature of that year, 1811, directed the construction of the Erie Canal, but the war prevented any further action until 1816, when a new commission was formed,

who employed Messrs. Broadhead, Wright, and Geddes, to commence the construction of the Erie, and Mr. Garvin, that of the Champlain Canal. The following year the dimensions of these canals were fixed at forty feet surface and four feet depth, with locks ninety feet long and fifteen feet wide. The estimated cost of both canals was stated at \$7,750,000. (The actual cost was about \$8,500,000.) Work was commenced on the Erie Canal by the ceremony of breaking ground, July 4, 1817.

In 1819 the Canal Commissioners appointed Benjamin Wright principal, and Canvass White and Nathan S. Roberts chief engineers. To Mr. White is due the arrangement of some of the most important plans and details of the works of the Erie Canal, and also the discovery of the hydraulic cement rocks of Onondaga, which have continued to furnish the supply of that article for the State works. A portion of the middle section of the Erie Canal, and also of the Champlain Canal, was open for navigation in the fall of 1819, and the Erie Canal was completed in the fall of 1826.

In 1825 the Legislature directed the construction of the Cayuga and Seneca, and the Oswego Canals, and surveys for fifteen other canals, amounting to seven hundred and fifteen miles in length. The Oswego Canal was completed in 1828, and the Cayuga and Seneca in 1829.

In 1829 the construction of the Chemung and Crooked Lake Canals was authorized. The former was completed in 1833, and the latter in 1836, under the direction of Holmes Hutchinson, as chief engineer.

The construction of the Chenango Canal was commenced in 1833, and completed in 1837, under the charge of John B. Jervis, as chief engineer. The Black River and the Genesee Valley Canals were commenced in 1836. The two last named works are yet unfinished.

In 1825 the Canal Commissioners stated that "the great press of business on the eastern end, before long, will exclude packet (passenger) boats from this section of the canal." * * * "and it is presumed that the experience of two or three years more will satisfy the public that it would be proper to commence the construction of another parallel canal on the eastern section."

The Legislature of 1834 passed an act directing double locks to be constructed east of Syracuse, and in the following year directed the enlargement of the Erie Canal for its whole extent.

The Canal Board determined the dimensions of the enlarged canal at seventy feet surface and seven feet depth, with locks one hundred and eighteen feet long and eighteen feet wide.

The work was commenced in 1836 and prosecuted until 1842, when the embarrassed condition of the treasury and the financial difficulties of the country induced the Legislature to direct a suspension of the work. A small amount of work has been performed annually since that date, chiefly for the purpose of bringing into use structures and portions of the canals which had been nearly completed previous to 1842, and those which were necessary to replace the decayed structures, and those portions of the canal the navigation of which was most embarrassed.

The Delaware and Hudson Canal Company was incorporated in 1823, and the work was commenced in 1825, and completed in 1830. The canal is one hundred and eight miles long, and as originally constructed had a surface width of forty feet and a depth of three feet, with locks seventy-six feet long and eight-and-a-half feet wide. Its dimensions were enlarged in 1848, so as to allow the use of boats of nearly three times the tonnage of those first built.*

In 1827 the Legislature loaned the company \$500,000, and in 1829 \$300,000 to aid the completion of the work. Mr. Wright was, at first, the chief engineer, and was succeeded by Mr. Jervis.

The Legislature, in 1825, directed William Campbell, who was afterwards surveyor general, "to locate and survey a good road from Lake Erie to the Hudson, through the southern tier of counties."

In 1826 the Legislature gave the first charter for a railroad from Albany to Schenectady, seventeen miles long, which was completed in 1830, by John B. Jervis, as chief engineer.

In 1829, Dewitt Clinton, Jr., published a pamphlet giving a sketch of the route for a railway to connect the navigable waters of New York, Pennsylvania, Ohio, Indiana, Illinois, and Michigan, with those of the valley of the Mississippi. This route started from Piermont, on the Hudson River, followed nearly on the line on which the New

* This was effected at a cost of \$2,500,000, and a saving of one-half the expense of transportation.

York and Erie Railroad has since been built to the Alleghany River, and thence through Northern Ohio, Indiana, and Illinois, to the junction of Rock River and the Mississippi, and thence to Council Bluffs on the Missouri.*

The New York and Erie Railroad Company was chartered in 1832, and a survey of the road made by Mr. Clinton at the expense of the general government. Another survey was made in 1834, by Mr. Wright, at the expense of the State government. In 1836 the Legislature loaned the company \$3,000,000, which sum was subsequently (in 1845) donated to them. The work on the road was commenced in 1835, but was soon suspended. In 1838 it was resumed; very little was however accomplished until 1845, when new parties took hold of it and opened one-half of it in 1849, and completed it to Lake Erie early in 1851. Horatio Allen was prominently connected with this work as consulting, and T. S. Brown as chief engineer, during its construction.

The first link in the Central Line of Railroad was completed in 1830, but it was not until 1843 that the whole line between the Hudson and Lake Erie was finished. The continuation of this line from Albany to New York was commenced in 1847, and completed in 1851. The line through the northern part of this State was completed in 1850. The other railroads of the State are generally tributaries of these main trunk lines.

In 1838 the legislature made loans to the Ithaca and Owego, the Canajoharie and Catskill, and the Auburn and Syracuse Railroad Companies, to the amount of \$637,700, and in 1840 to the Auburn and Rochester, the Hudson and Berkshire, the Toga, the Tonawanda, the Schenectady and Troy, and the Long Island Railroad Companies, to the amount of \$648,000.

By the last returns made to this office of the several railroad corporations, and from other sources, it is ascertained that there has been expended on all the railroads of this State, the sum of \$117,707,620 58, and that the number of miles in operation is 2,432.

STATISTICS OF POPULATION, &c.

RESULTS OF THE CENSUS OF GREAT BRITAIN.

NUMBER II.

LAW OF POPULATION IN GREAT BRITAIN.

The increase of population depends on many varying elements; but it is not intended here to discuss at any length what is termed the Law of Population.

The increase or decrease of a people depends upon the age of marriage, the age of parents when children are born, the numbers who marry, the fertility of the marriages, the duration of life, and the activity of the migration flowing into or out of the country. These influences act more or less upon each other. The report here indicates the effect of a change in each element while the others remain constant.

1. The numbers of the population bear a definite relation to the duration of life, or to the mean lifetime. Thus, if the mean lifetime of a population is 30 years, then if the births are 100,000 a year, and remain uniform, the population will be 30 times 100,000, or 3,000,000. Now, the births remaining the same, let the lifetime be gradually extended to 49 years, then the population will become 4,900,000; or if the lifetime is extended to 50 years, the population, from the extension of life alone, will rise from three to five millions. The deaths, upon this hypothesis, will be equal to the births, and the same in number when the population is five as when it is four or three millions. It is probable that the mean lifetime of the great body of the population did increase from the year 1801 to 1821, when the increase of population was greatest in Great Britain.

2. The interval from the birth of one generation to the birth of their descendants of the generation following, bears also a definite relation to the numbers, which increase as the interval is shortened. Thus, if the population increases at the rate of 1.329 annually, and if the intervening time from generation to generation is $33\frac{1}{2}$ years, it

* Connected lines of railroads are now completed or in rapid progress on the whole length of the route, and nearly on the line described by Mr. Clinton.

follows that the increase from generation to generation is 55 per cent, or that every 1,000 women are succeeded, at the interval of 33½ years, by 1,553 women; every two couples, male and female, by three. If the interval is contracted, and the increase from 1,000 to 1,553 takes place in 30 years, the annual rate of population increases from 1.329 to 1.477 per cent; and as we assume by hypothesis that the births and the lifetime remain the same, the population would be ultimately one-ninth part more numerous than it was under the former conditions. Early marriages have the effect of shortening the interval between generations, and tend in this way to increase the population.

3. An increase in the fertility of marriages will evidently cause an increase in the population.

4. In ordinary times, a large proportion of the marriageable women of every country are unmarried, and the most direct action on the population is produced by their entering the married state. Thus, in the Southeastern division, comprising Surrey, Kent, Sussex, Hants, and Berks, the number of women of the age of 20 and under the age of 45, amounted at the last census to 290,209, of whom 169,806 were wives, and 120,403 were widows or spinsters. 49,997 births were registered in the same counties during the year 1850, or 10 children were born in 1850 to every 58 women living in 1851. Of the children, 46,705 were born in wedlock, 3,292 were born out of wedlock; consequently, 36 wives bore in the year ten children, and of 366 unmarried women of the same age, (20-45,) ten also gave birth to children. A change in the matrimonial condition of a large proportion of the 120,403 unmarried women, out of the 290,209 women at the child-bearing age, would have an immediate effect on the numbers of the population; and, if continued, by increasing the rate of birth to the living through successive generations, would operate on population like a rise in the rate of interest on the increase of capital.

5. The effect of migration on the numbers of the population is evident. It is probable that the emigration of Irish has contributed to the increase of the population in England, and it is certain that the emigration from the United Kingdom contributes largely to the increase of the population of the United States. The emigrants are a self-perpetuating body in healthy climates, and they increase faster abroad than the general population at home, as they contain an excess of the population at the reproductive age; so that if their numbers are added together it is certain that we get, in the aggregate, a number much below the actual number of survivors. The population of Great Britain and Ireland, including the army, navy, and merchant seamen, was 21,272,187 in 1821, and about 27,724,849 in 1851; but in the interval, 2,685,747 persons emigrated, who, if simply added to the population of the United Kingdom, make the survivors and descendants of the races within the British isles in 1821, now (in 1851) 30,410,595.

6. The numbers of the population are increased by the abundance of the necessities of life, and reduced by the famines, epidemics, and public calamities affecting the food, industry, and life of the nation. The pestilences of the middle ages—the famine, the influenza, and the cholera of modern times—are examples of one class of these agencies; the security and freedom which England has latterly enjoyed, are examples of the beneficent effect of another class of influences, not only on the happiness of the people, but also on the numbers which the country can sustain at home and can send abroad to cultivate, possess, and inherit other lands.

The extent to which all these causes affect the increase of the population of Great Britain, will ultimately be known by means of a continuous series of such observations as have been commenced at the present census.

DECLINE OF THE POPULATION OF SPAIN.

The *Clamor Publico*, a Spanish journal published at Madrid, presents in the following statement a deplorable picture of the decline of Spain:—

Under the Moors, the population of Spain was 30,000,000; it is now 15,000,000. When Granada was conquered, in 1492, it was defended by walls flanked by 1,030 towers. The kingdom, of which it was the capital, was 70 leagues long by 50 broad, and possessed 32 cities of the first rank and 97 of the second. Granada, before its fall in 1492, contained 400,000 inhabitants, of whom 60,000 bore arms; it now contains about 60,000 souls, all counted. The population of the whole kingdom of Granada was 3,000,000. Malaga, in the seventeenth century, contained 80,000 in-

habitants; it now possesses only 50,000. Madina del Campo, in the seventeenth century, contained 60,000 inhabitants; it now contains 6,000.

Merida, at the same epoch, possessed 40,000 inhabitants; it now possesses only 5,000. In the sixteenth century, the diocese of Salamanca had 127 cities and villages; it now has 13 only. Segovia, in 1725, had 5,000 families; now 2,000. Seville, in the seventeenth century, had a population of 300,000, of which 130,000 were employed in manufactures; it now contains 96,000, all told. Toledo, in the fifteenth century, had 200,000 inhabitants; it now has 15,000. Valence, which in the year 1600 counted a population of 600,000, now hardly numbers 60,000. In 1778, there were counted 1,511 abandoned villages in Spain, and the number has been increasing from that time to this.

CENSUS OF THE SANDWICH ISLANDS.

The *Polynesian* of March 18, 1854, furnishes the following summary of the census returns, taken December, 1853:—

NATIVES.			
	Men.	Women.	Total.
Island of Hawaii.....	12,443	11,750	24,188
“ Maui.....	8,995	8,425	17,330
“ Molokai.....	1,799	1,766	3,565
“ Lanai.....	317	282	600
“ Oahu.....	9,551	8,264	17,815
“ Kauai.....	3,672	3,054	6,726
“ Niihau.....	392	398	790
Total.....	37,079	33,940	71,019

FOREIGNERS.			
Island of Hawaii.....	259	Island of Oahu.....	1,317
“ Maui.....	244	“ —.....	264
“ Molokai.....	42		
Total.....			2,118
Natives.....			71,018
Natives and foreigners—grand total.....			73,137

In 1778, Cook estimated the population of the group at 400,000; but probably the real number was not over 300,000. In 1850, the number of inhabitants was 84,165. The rapid diminution of population since 1849 is partly explained by the existence of measles and smallpox, which were very fatal; but, aside from these extraordinary causes, there is a gradual and regular falling off, which by many is supposed to amount to as much as 8 per cent yearly.

The district in which Honolulu is situated contains not far from 9,000 inhabitants, of whom 1,180 are foreigners.

STATISTICS OF AGRICULTURE, &c.

AGRICULTURE IN GERMANY.

The Berlin correspondent of the *London Times*, writing to that journal, says:—

Among the earliest subjects that will engage the attention of the Zollverein conferences will be the reduction of the duty on iron—which the South German States, particularly Wurtemberg, are preparing to oppose energetically—and, even more urgently than this, the facilitation of the internal traffic in grain, so as, if possible, to obtain an internal free trade in corn. The excessive emigration that is now taking place from the South of Germany—we may with propriety call it a Teutonic Exodus—is mainly attributable to the dearness of provisions, though there are of course other troubles, of a political and social nature, which contribute to fill up their cup of

bitterness to overflowing. From Bohemia and Moravia we hear of hundreds of families constrained to live on grass and roots. In the Palatinate and Rheinhessen, formerly remarkable for cheap living, the complaints of dear provisions have become general. Potatoes cost six times, hay five times as much as they did thirty years ago. Even in Prussia the price of corn (rye) in some parts has risen to sixty thalers (£9) the wispel (24 bushels).

Representations were lately made to the President of the Ministry and Minister of Finance, stating that in Berlin, with the population over 400,000, there are at present only about 1,200 wispels of rye on hand, of which 200 are already sold, and that prices have been rising steadily for many years past, and the supply not increasing. The local statistics of Berlin show that while house rent has increased from certain local causes, the *octroi* levied at the gates on meat and all cereals, whether converted into food or not, had not increased in proportion to the increase of the population. By some authorities on this subject, this diminution or want of extension in the supply is attributed to the increased cultivation of tobacco; in some parts of the South of Germany two thirds of the land that formerly produced wheat and potatoes now bears tobacco. Many years ago the annual consumption of tobacco in Germany amounted to 3 lbs. per head of the whole population, while in England it only amounted to $\frac{1}{2}$ lb. The difference now is doubtless still greater than it was then. In Silesia alone there are more than 4,000 acres devoted to the growth of this plant, which offers this great attraction, that its conversion into cigars supplies labor for a number of hands during the winter.

Another cause for the insufficient production of corn may be found in the enormously increased cultivation of beetroot for sugar purposes—a subject of so much importance to England and Ireland that I shall return to it specially on another occasion. Agriculture in general seems to be thriving in Prussia. The aggregate value of the annual produce of grain has increased by 50,000,000 thalers since the year 1820; that of cattle breeding by 60,000,000; taking both together as the produce of the land in general, the present annual value amounts to 500,000,000 thalers, against 300,000,000 in 1820. The great increase is doubtless due to the number of railways, which admit of the produce being brought to market; where there is no railway, the land has so little value, that it does not pay the proprietor to manure or drain it. If he wants to increase his produce for any purpose, it pays him better to purchase a few hundred acres more than to spend money on those he has.

AGRICULTURAL PRODUCTIONS IN CALIFORNIA.

We learn from the *Pacific*, that Mr. William Wolfskill, of Los Angeles, has fifty acres of land, which affords the following quantity and variety of products:—

Thirty-five acres of grape-vines, with about 1,000 plants to the acre, produce each about 1,100 bbls., or 31,650 gallons of wine. Three acres of peach-trees, with 100 trees to the acre, average 40 lbs. to the tree, 12,000 lbs. Seventy pear-trees average 1,000 lbs. to the tree, 70,000 lbs. Forty apple-trees, 240 lbs. each, 96,000 lbs. Twenty orange trees, bearing about 2,000 each. Twenty-five fig-trees, about 300 lbs. to the tree. Ten apricots, about 100 lbs. each. Ten citron-bushes, with about 20 each. Sixty English walnut-trees, just beginning to bear. An olive-tree, and a few quinces.

The value of these products on the ground is as follows:—

750 bbls. of wine distilled make 4,725 gallons of brandy, at \$1 80 per gallon.....	\$8,505
11,025 gallons wine, at \$1 per gallon.....	11,025
12,000 lbs. of peaches at 5 cents per lb.....	600
70,000 lbs of pears at 4 cents per lb.....	2,800
1,000 lbs. of apricots at 4 cents per lb.....	400
9,600 lbs. of apples at 10 cents per lb.....	960
40,000 oranges at 5 cents each.....	2,000
200 citrons at 50 cents each.....	100
Figs, walnuts, and quinces, no sale.....	.....
Total.....	\$26,380

Mr. Wolfkill's ranch is about 700 miles by land from his garden or vineyard, on Punta Creek, in the valley of the Sacramento. There, about 3,000 head of cattle, and

a hundred or two of horses range. And to amuse himself while herding his stock, he has planted a fine vineyard which will begin to bear soon, and set out near 1,000 trees of various kinds of fruit. Among them he has some fine olive-trees. He is now delivering a thousand head of cattle to the butchers at \$40 a head.

Mr. John Wolfskill has on the Punta some orange-trees that have lived through the cold weather of this winter, and he is not without hope of getting them to bear.

JOURNAL OF MINING AND MANUFACTURES.

IRON MANUFACTURES OF THE WORLD.

The following statistics, so far as they relate to great Britain, are compiled from the returns of 1850, and from the recent trade and navigation returns:—

In 1850 there were 459 furnaces in the United Kingdom, and the annual yield of iron was 2,380,000 tons. The following figures are said to represent the produce of the respective countries named:—

United Kingdom	tons. 2,380,000	Austria	tons. 160,800
United States	400,000	Sweden	133,500
France	348,000	Prussia	112,000
Russia	189,000		
Total			3,723,300

In 1850, therefore, while Great Britain produced 2,380,000 tons, and imported 28,000 tons, her total export of iron and hardware amounted to 809,100 tons. She, therefore, had left for home markets, over 1,500,000 tons. In 1796, the quantity of British iron made was 125,000 tons. The quantity of foreign iron retained for home consumption was 45,600 tons. The total exports of iron and hardware amounted to 408 tons; the total home consumption 170,000 tons. The contrast in 1850 is striking indeed, as calculated to show the progress of this manufacture. the figures stand thus:

British iron made	tons. 2,380,000	Iron & hardw're exported. tons.	809,100
Foreign iron retained	28,000	Iron consumed at home	1,598,900

In connection with the foregoing, the following table will show not only the rate of increase in the exports of iron, steel, and machinery, but also the gradually increasing proportion which, in the periods given below, the value of these exports bore to the total exports of the country. In 1814 they amounted only to 4.08 per cent of the whole; whereas in the present year they will probably exceed 20 per cent, amounting as they do to 18.85 per cent in the first ten months of the year:—

	Total value of exports.	Total value of iron, steel, hardware and machinery.	Proportion p. ct. to total revenue.
1814	£43,447,000	£1,772,000	4.08
1821	35,826,000	2,900,000	8.01
1831	37,102,000	3,514,000	9.46
1841	51,634,000	5,052,000	9.78
1850	71,367,000	9,933,000	12.65
1853, 10 months, end'g Nov. 5.	73,155,000	13,795,000	18.85

In 1825, the United Kingdom exported as follows:—

Iron and steel, wrought and unwrought	£1,048,000
Hardware and cutlery	1,392,000
Machinery and mill-works	212,000
Total	£2,652,000

The increase since that period may be inferred from the following figures, which include to the ten months ending Nov. 5, 1853:—

Iron and steel, wrought and unwrought	£9,231,000
Hardware and cutlery	2,990,000
Machinery and mill-works	1,574,700
Total	£13,795,700

Of countries which received the largest portions of this enormous mass of exports, the United States took not only by far the largest quantity of iron and steel, wrought and unwrought, but also the largest quantity of pig-iron—the quantity exported in 1850 being 57,000 tons. Next to the United States stands Holland, 13,100; France, 11,710; Prussia, 10,950; Canada, 10,890; Denmark, 7,570; Italy, 7,400; and the Hanseatic towns, 7,370 tons. Russia takes only 812, and Turkey 930 tons of pig-iron. Of bar, bolt, and rod iron, the United States is also the largest customer—taking, in 1850, 263,530 tons. Next in order stands Canada, 46,340; East Indies, 36,200; Italy, 26,770; Turkey, 14,890; Hanseatic towns, 10,440; Holland, 9,350; and Portugal, 6,890 tons; Russia taking only 706 tons.

The following table gives the total values of these three branches of iron manufactures exported to each country:—

Countries.	Value of iron and steel, wrought and unwrought.	Value of hardware and cutlery.	Value of machinery.	Total.
United States.....	£2,385,410	£1,094,900	£27,310	£3,462,620
British North America.....	479,220	138,630	6,150	624,000
East Indies.....	375,280	135,070	49,970	560,320
Hanseatic towns.....	237,170	151,170	84,530	472,870
Italy.....	222,570	57,060	59,910	339,540
Holland.....	199,600	52,810	18,720	271,130
Australia.....	144,280	115,530	20,290	280,100
Turkey.....	112,060	40,870	14,170	167,100
West Indies.....	85,400	52,130	36,270	173,800
Brazil.....	78,100	80,970	29,000	188,070
Spain.....	77,270	43,980	73,150	194,400
France.....	69,790	98,480	59,108	227,370
Prussia.....	67,190	9,640	5,860	82,690
Portugal.....	65,100	17,960	13,770	96,830
Belgium.....	39,570	41,600	22,630	103,800
Russia.....	36,050	58,740	173,920	268,710
Denmark.....	22,580	13,570	20,610	56,760

THE MINES OF NEW JERSEY.

Mr. Miller, in his discourse before the Historical Society, mingles geological and historical information in it very agreeably and profitably.

The war of the Revolution had made terrible ravages in the State, yet her means for defence had not been exhausted; her mines and minerals were safe in the depths of the earth, beyond British power. At the call of liberty, these were poured forth from her mountain caverns to arm the soldier for battle. The Andover Works were held by the government till the close of the war; the mines of New Jersey for five years furnished iron and steel for the continental army. Peace came, and with it the ill fortune of these mines began. They were forsaken by the government, and heaps of ruins mark the places where a thriving business once flourished. At length, in the course of events, but owing to no favor or wisdom of the government, these sterile mineral regions are occupied again. The revolutionary mine, for fifty years a neglected waste, has been transformed by the magic power of modern art into a deposit of mineral wealth more valuable than gold, and has sent during the last five years, upon railroad and canal, 150,000 tons of its rich ores to the banks of the Delaware. Within the mineral region of New Jersey there were raised during the last year about 175,000 tons of ore, which will probably be augmented the next year to 250,000 tons. In the year 1851, one of the largest iron manufacturing establishments in the County of Morris was compelled, by the ruinous state of the iron trade in this country, to undergo the mortal process of a sheriff's sale. In the hands of its new owners, and under a more auspicious state of the market, its fires were re-kindled in 1852, and during the last year "Boonton Iron Works" used 11,600 tons of Jersey magnetic ore, consumed 23,000 tons of anthracite coal, 3,000 tons of limestone, 6,000 tons of pig-iron, employed in its operation 600 men, paid out for wages \$22,000 per month, and manufactured 6,500 tons of nails and railroad spikes. Other establishments in the State consume a still larger quantity of ore, while the demand from abroad is daily increasing.

To these mineral productions are about to be added extensive veins of Franklinite, which are to be opened and worked. In 1852, about one hundred years from the time when the first cargo of colonial bar-iron made its appearance in England, there

was placed at the door of the Crystal Palace in London, because it was too large to enter, a mineral rock, which for its size and quality commanded attention at the World's Fair. This was a pebble specimen of our Jersey mountain of zinc, for which the New Jersey Zinc Company gained the prize medal over France and Belgium. The learned committee also pronounced the oxide of zinc as a white paint in place of salt lead to be one of the remarkable events in the recent history of chemical art. It has attained a distinction uncommon for an American production; for it embellishes not only the rooms of our democratic houses, but one of the apartments in Windsor Castle, where it may be distinguished from all other pigments by its glossy whiteness, peculiar to Jersey zinc paint. New Jersey, with her magnetic and Franklinite iron mines, and inexhaustible zinc deposits possesses the richest field of mineral wealth in America.

In 1640, the 59 neglected forges of Great Britain produced only 17,000 tons of iron; in 1852, her thousand protected furnaces and mills rolled out about 3,000,000 tons. Prior to 1776 she imported her iron from the colony of New Jersey to supply her home market. In this 78th year of independence she exports to the United States 500,000 tons of manufactured iron. Her mines constitute the most productive source of national wealth in the world. This element of power and opulence, so triumphantly developed in England, is also possessed by New Jersey. Hitherto we have not been able to improve it, and our mines have neither advanced the fortunes of their owners nor the prosperity of the State; but the time is now upon us when we can compete on more equal terms with English capital and cheap labor, and when our State becomes what Wales is to England.

COMPOSITION OF THE SHEATHING OF SHIPS.

M. Bobierre has paid considerable attention to this subject, and has arrived at the following conclusions as to the cause of the rapid destruction of some copper and bronze sheathing:—

1. When unalloyed copper is employed, the presence of arsenic appears to hasten its destruction.

2. All bronzes which appear to have stood well, contained from $4\frac{1}{2}$ to $5\frac{1}{2}$ per cent of tin, that quantity being necessary to form an homogeneous alloy. When the per centage of tin is only 2.5 to 3.5, which is very frequently the case, no definite alloy is produced, and the mass is of unequal composition, and being unequally acted upon, is soon destroyed.

3. When impure copper is employed, the alloy is never homogeneous, and is unequally acted upon in consequence. We thus see that the so frequent destruction of the sheathing of copper bottomed vessels arises from the tendency to use inferior brittle copper, and, by diminishing the proportion of tin, to economize the difference between the price of that metal and copper, at the same time that the cost of rolling is also less, in consequence of the greater softness of the poor alloy.

Bobierre thinks that the addition of a very small portion of zinc very much improves the bronze, by producing a more perfect and uniform distribution of the positive metals, and consequently a much more definite alloy.—*Comptes Rendus*.

TO MAKE OXIDE OF GOLD.

Figuiet, who tested the several methods of preparing this oxide, now so extensively used in electro-gilding, has determined the best to be as follows: Dissolve 1 pt. gold in 4 pts. aqua regia, evaporate to dryness, redissolve in water, add a little aqua regia to take up the traces of metallic gold and of protochloride remaining undissolved. Evaporate again, redissolve in water, and mix with pure potassa perfectly free from chloride, until it gives an alkaline reaction with turmeric paper. Turbidity immediately ensues, when it is mixed with chloride of barium; aurate of baryta precipitates as a yellow powder. When the precipitate begins to assume a whitish appearance, the addition of chloride of barium must be discontinued, as all the gold oxide has gone down and the alkali commenced to act upon the baryta of the chloride. The aurate of baryta is then to be washed until the waste-waters cease to be precipitated by sulphuric acid. The aurate is then heated to boiling, with dilute nitric acid, in order to eliminate the oxide of gold. By washing until the water no longer reddens litmus paper, the oxide becomes pure, and must be dried between the folds of bibulous paper by exposure to air.—*Jour. de Pharm.*

COTTON MANUFACTURES IN THE UNITED STATES.

The following statements and remarks touching the cotton manufactures of this country, are taken from the special report of Mr. GEORGE WALLIS, one of the Commissioners to the World's Fair in New York:—

The New England establishments are conducted upon a similar principle to the largest cotton factories of Great Britain, and spinning and manufacturing are carried on as one concern. This, however, is not the characteristic of the mills in the above States, as they are, in many instances, employed in spinning only, and in Pennsylvania, Georgia, and Tennessee, yarns are produced chiefly for the purpose of domestic manufacture by hand, which still obtains in many parts of the older States of the Union. Thus, while in Pennsylvania the capital invested amounts but to about one-seventh of that of Massachusetts, the quantity of cotton consumed is one-fifth, the value of the raw material not quite one-fourth, the number of operatives (male and female) one-fourth, the value rather more than one-fourth, the number of pounds of yarn spun and sold as yarn, is above thirty times greater in Pennsylvania than in Massachusetts. This, to a certain extent, gives a key to the differences in the modes of manufacture in the two States, and illustrates the distinction already alluded to. There can be no doubt, however, that domestic weaving is gradually giving way, and those manufacturers, especially in Pennsylvania, who formerly did a prosperous business as spinners only, now find that the Eastern States supply the piece goods at a rate so little above the cost of the yarn, that it is not worth the while of the farmer to continue this primitive custom of weaving his own cloth. Thus the domestic loom is fast following the spinning wheel of the early settlers, and those manufacturers who until recently have spun yarn only, are gradually introducing the power-loom as the only means of sustaining their position in the market. This was illustrated by a visit to the Eagle Cotton Mill, Pittsburgh, Pennsylvania. Formerly the proprietors spun yarn alone, and did a successful trade; but, by a return with which they favored me, I find that in six establishments under their direction, they have introduced already 540 looms to the 26,000 spindles, and were manufacturing sheeting at the rate of 6,000,000 yards per annum, together with twilled cotton bags, batting, and yarns, from 5s. to 18s., and this, in order to make the latter pay by consuming the surplus yarns themselves. In the Penn Cotton Mill, Pittsburgh, the more modern system had become the rule of the establishment, and with 7,000 spindles and 207 looms, 2,730,000 yards of shirtings were produced annually, besides 240,000 lbs. weight of colored yarns for cotton warps and cotton rope.

At two establishments at Richmond, Virginia, the consumption of the yarn in the manufacture of piece goods was also the rule; and this being the extent of my journey southward, it became a matter of interest to inquire as to the progress of the cotton manufacture in the cotton growing States. Georgia, Tennessee, and North Carolina were quoted as those in which the greater progress had been made, while Virginia, South Carolina, and Alabama were the next. In Tennessee spinning would appear to be the rule, and manufacturing the exception. In Georgia and North Carolina equal attention is paid to both, while in Virginia, South Carolina and Alabama the manufacture of the piece goods is decidedly more extensively carried on than spinning only. Slave labor is said to be largely used, with free whites as overseers and instructors.

In the two establishments above named, free white labor alone is employed. The males are heads of departments, machinists, dressers, &c., and the females are spinners and weavers. The latter are chiefly adults, though children from twelve to fifteen are employed. The average hours of work here are twelve, but vary a little with the season, very full time being the rule. At least such is the statement of the manager of the James River Company's Mill. This establishment, as also the Manchester Cotton Company's Mill, is at Manchester, Chesterfield County, Virginia, and situated opposite to Richmond, on the James River, from the falls on which the water-power used for driving the machinery is derived. The James River Mill produces a large weight of work for the extent of its machinery. The goods manufactured are coarse cottons, and average about $2\frac{1}{2}$ yards to the pound; shirtings, 28 inches wide (osnaburgs,) summer pantaloons for slaves, and bagging for export to the Brazils for sugar-bags, running about three yards to the pound. Bagging of a lighter character, for grain, and 36-inch osnaburgs, two yards to the pound, are also produced. The Manchester Company manufacture sheetings, shirtings, and yarns, and employ about 325 operatives, the children being of the same average age as at the James River Mill. The manager, Mr. Whitehead, is an Englishman, as is also the chief mechanic. The

former has just perfected a patent "speeder," of which the latter expressed a very high opinion. Its advantages are a greater speed, a more even roving, and a bobbing of any desirable size, which never becomes spongy in the winding.

The small development of the cotton manufacture in the States of Indiana, Mississippi, and Arkansas, or even Ohio and Kentucky, required no special inquiry. In Maryland, however, there were twenty-four establishments in 1850, chiefly engaged in the manufacture of piece goods, such as drillings, sheetings, ducks, osnaburgs, and bagging. The yarns produced for domestic purposes bear but a small proportion to those manufactured into cloth, and these are chiefly sold within the State for the home weaving of mixed fabrics of wool and cotton, forming coarse lineseys. The wool is mostly spun by hand in the farm-houses, and the fabrics, when made, are intended entirely for domestic use. In Maryland, too, bleaching is carried on to a considerable extent.

Having thus endeavored to illustrate the position of the cotton manufacture in the form in which it has developed itself in the South, and, so far as the circumstances would permit of an inquiry, in the Middle States, bordering on the West, the manufacturing system as manifested in the cotton trade of New England, demands consideration. If the illustrations given show the early progress and position of this manufacture in the United States, so far as daily-recurring improvements and ever-increasing wants have permitted it to remain in its original form, the manufacturing towns of Lowell, Manchester, and Lawrence, strikingly demonstrate the results of the energy and enterprise of the manufacturers of New England.

At Lowell, Mass., the cotton manufacture has been developed in a form which has been a theme for many writers on the economy and social bearings of the factory system; and the plans so successfully put into operation here and carried on since 1822, have led to the erection of large establishments, with their attendant boarding-houses, at Manchester, N. H., and more recently at Lawrence, Mass., whilst a commencement has been made at Holyoke, in the same State, by the Hadley Falls Company, which promises a result of a more extraordinary character than anything yet achieved in the United States. Each of these localities presents features peculiar to themselves, and besides the manufacture of cotton goods, other branches of production in textile fabrics are carried on.

The falls of the Pawtucket on the Merimack River and the Pawtucket Canal, which had previously been used only for the purposes of navigation, and connecting the river above and below the falls by means of locks, presented to the original projectors of Lowell a site for the solution of an important problem, not only in American industry, but to a great extent in that of Europe itself. This was the combination of great natural advantages with a large and well-directed capital, resulting in extensive and systematic operations for the realization of a legitimate profit, while the social position of the operative classes was sedulously cared for, and their moral and intellectual elevation promoted and secured. The example has not been lost, even in Europe, and the possibilities of the manufacturing system of a country being carried on without deterioration, but on the contrary to the consolidation and promotion of the best interests of the laboring classes, having been so unmistakably proved, many improvements in the larger manufactories of England, not only of those engaged in the manufacture of cotton, but in other branches of industry, have resulted from the enlightened and profitable system commenced barely thirty years ago by the founders of Lowell, which is now a city containing nearly 35,000 inhabitants.

In that place there are eight manufacturing corporations exclusively employed in the manufacture of cotton goods, two of which print and dye their own fabrics, and one company (Lowell Manufacturing Company) which manufactures cotton osnaburgs in addition to its staple production of carpets. There are thirty-five mills, besides the print-works above named, belonging to these companies. They produce 2,139,000 yds. of piece goods per week, consisting chiefly of sheetings, shirtings, drillings, and printing cloths, varying from No. 13 to No. 40. The greater portion, however, are Nos. 13 and 14. The consumption of cotton is 125,000 lbs. per week, spun and manufactured upon 320,732 spindles, and 9,954 looms. The average per spindle is $1\frac{1}{2}$ yards per day, the medium produce of a loom being, in 14s, 45 yards, and 30s, 33 yards per day.

The number of operatives employed in the cotton manufacture by the eight corporations exclusively engaged therein, is 6,920 females, and 2,388 males. This, however, does not exclude those employed by the Lowell Manufacturing Company in their cotton mills, as the returns only show the gross number of hands engaged in the cotton, carpet, and other departments of that establishment. The average wages of females,

clear of board, is \$2, or about 9s. 6d. sterling per week, whilst the wages of males show an average of \$4 80, or about £1 2s. sterling per week. The average hours of labor per day, exclusive of meals, is 12, the mills commencing at 5 A. M., and closing at 7 P. M.

Of the quality of the goods produced, it will be sufficient to say that they are generally excellent of their class, and quite equal, sometimes superior, to similar goods manufactured in Great Britain. Those of Lowell may be taken as fair examples of other cotton mills in the United States, possessing the same advantages as regards power, improved machinery, and intelligent operatives. In spinning, it will be seen that the numbers are low, the finer quality of cotton goods not being produced—the No. 40s “printers” manufactured by the Merrimack Company being of the highest class. These, when printed, are of a firm and excellent quality. The Lowell Manufacturing Company produce a very cheap, well-looking fabric for cotton trowserings at 17½c. or about 9½d. sterling per yard. These are made up of dyed yarns in checks and stripes, and are woven upon gingham looms.

MERCANTILE MISCELLANIES.

TEA AND COFFEE TRADE.

In three particulars, tea and coffee strikingly resemble each other. They are nearly all void of smell and taste in their natural state, and only acquire their peculiar flavor or aroma from a volatile oil produced in them during the processes of drying the leaf or roasting the berry. They all contain a peculiar, slightly bitter principle, very rich in nitrogen, which is called *theine*, and which has the property of lessening the natural wear and tear of the human body, and thus saving food to a certain extent. They all likewise hold in solution *tannic acid*, the action of which on the system is not completely understood. In addition to these three substances, a considerable portion of gluten is contained in both tea and coffee; but owing to the leaves in the one case not being drank, nor the grounds in the other, this is wasted. In tea, the volatile oil evaporates with age, so that the older the tea is, the less intoxicating. To this volatile oil is owing the paralysis which frequently attacks persons who have been, for several years, engaged in packing and unpacking teas. But on the contrary, the *theine* in coffee increases with the age of the berry. This substance, if taken in excess, accelerates the pulse, wakes the imagination, and predisposes to visions.

Coffee resembles tea in the effect which it produces, because it also contains *theine*, *tannic acid*, and *volatile oil*. In coffee, however, they are combined in different proportions, and hence the reason why many persons prefer it as a beverage. The best coffee grows on the driest soils. Yet the worst coffee, if kept ten or fourteen years, will acquire the flavor of the finest Mocha. The principal art in preparing coffee lies in roasting, for in this process it is that its peculiar aroma is produced. The heat should never be greater than is sufficient to impart to the berry a light-brown color—for if carried beyond this point a disagreeable secondary smell mingles with the aroma.

By the common process of drinking coffee, that is, without the grounds, a good deal of nutritious matter is wasted. Many of the Oriental nations drink the grounds invariably. Not less than a hundred millions of the human race drink coffee, it is computed, as a daily beverage. In France, Germany, Sweden, Turkey, and a large portion of the United States, it is used by almost everybody, just as tea is in England, Holland, Russia, and China.

Tea and coffee become more indispensable as nations advance in intellectual activity. Whether this is a cause or effect, is not yet demonstrable, though the writer in *Blackwood* inclines to consider it the former. Perhaps the extraordinary popularity of these beverages, however, among the moderns, arises principally from the extension of Commerce, and the consequent cheapness of tea and coffee. Experience teaches people that tea and coffee, used moderately, prevent the waste of the tissues, afford positive happiness, and increase the nervous activity, enabling men, as the writer in question forcibly remarks, “to show more blood and spirit in the face of difficulties.”

With some persons, indeed, these beverages do not agree. But to the great mass of mankind they are almost indispensable.

"COMMERCE IS KING."

This proverb, says Hiram Fuller, the clever editor of the *New York Mirror*, is too widely accredited as true. In this country, whose Commerce is, prospectively at least, greatest among the nations, **INDUSTRY** is king. Industry, indeed, is shared by Commerce, yet Commerce is not the basis of our wealth and power, but only a collateral. Industry is king on American soil and over the seas; the industry that digs from the earth the many ores and fabricates them for Commerce; which plants our fields with grains and fruits and reaps rich harvests for Commerce; which rears the humblest and the proudest homes, hamlets, villages, and cities, as markets for Commerce; and which, finally, builds the careering ships and the whirling cars by which Commerce moves and thrives.

The farmer, plodding along his furrow in some far-away field, looks towards the sea in vision, and beholding the great ships, freighted with silks, and spices, and gold, and the seaport glittering with warehouses and palaces, indicative of every luxury, feels that Commerce must be an enchanter—must be king—and he treads more heavily and sadly in his furrow. But let the farmer consider before he yields the throne and scepter. Let him ask what would become of shining Commerce, if his plow, the miner's pick, the reaper's sickle, the artisan's hammer, and the weaver's shuttle were abandoned. From the use of these simple weapons—the glorious armor of creative industry—the garniture of Commerce springs. Commerce is only an agent, over whose shoulders the trophies of Industry are laid, to be borne around the world for exchange. Strip her of the tribute of Industry from a thousand unvaunting handicrafts, and what a skeleton would remain. Commerce is glorious as an agent, but its splendor is borrowed from the hands that guide the plow, hold the sickle, wield the axe and spade, and strike home the hammer, shuttle, and plane.

Aye, let the farmer consider before he yields his throne and scepter, and let men of all honorable labor consider, for to them belongs the sovereignty of the earth. The sum of the world's wealth and power is measured by their brown hands and sinewy arms. They are the creators of Commerce, and their industry is king. Let no man be faint or sad whose labor is creative for good purposes, be it ever so humble in its outward show. The ocean were a parched and arid desert, but for the streams pouring ever into its bosom—myriads of them obscure and hidden—and Commerce were but a sailless sea, but for the industry of earth, which shapes its keels and freights them with the wealth of nations. Industry is regal, and in the language of the poet—

"The noblest men I know on earth,
Are men whose hands are brown with toil,
Who, boasting no ancestral birth,
Hew down the woods and dig the soil,
And win thereby a prouder name
Than follows king's or warrior's fame."

OVERTRADING, AND GIVING LARGE CREDIT.

There are two things which may be properly called overtrading in a young beginner, and by both of which tradesmen are often overthrown:—

1. Trading beyond their stock;
2. Giving too large credit.

A tradesman ought to consider and measure well the extent of his own strength; his stock of money and credit is properly his beginning, for credit is a stock as well as money. He that takes too much credit, is really in as much danger as he that gives too much credit; and the danger lies particularly in this—if the tradesman overbuys himself, that is, buys faster than he can sell, buying upon credit, the payment perhaps becomes due too soon for him; the goods not being sold, he must answer the bills upon the strength of his proper stock—that is, pay for them out of his own cash; if that should not hold out, he is obliged to put off his bills after they are due, or suffer the impertinence of being dunned by the creditor, and perhaps by servants and apprentices, and that with the usual indecencies of such kind of people. This impairs his credit, and if he comes to deal with the same merchant, or clothier, or other tradesman again, he is treated like one that is but an indifferent paymaster, and though they may give him credit as before, yet depending that if he bargains for six months he will take eight or nine in the payment, they consider it in the price, and use him accordingly; and this impairs his gain, so that loss of credit is indeed loss of money, and this weakens him both ways.

"THE BIBLE CLERKS."

A young man, says the *Philadelphia Merchant*, joined two others as a clerk in the same establishment, and as room-mate, in a certain city. When the first Sunday morning came after he had entered his new situation, he thought of the old custom at home of reading a portion of Scripture as a preparation for the day, but he hesitated to take his Bible from his trunk because of the presence of the other clerks. Still he could not be easy. He went towards his trunk and then returned to his seat, till his uneasiness was noticed by one of his companions, who said—"What's the matter? You are as restless as a weathercock." He hesitated in answering, but conscience got the better of his pride, and he told the truth; and, as though the moral feeling of the young man was contagious, the other clerks exclaimed that they had each a Bible in their trunks, but had not taken it out for fear of each other—a fear of ridicule, the one from the other. The three Bibles were now taken out, and a portion was read in concert; the practice was continued, its influence was felt, and when the story got out and their habit was known, they went by the name of *the Bible clerks*.

And what were their characters? Did the influence of the Bible prevent the development of any of the true mercantile qualities? They were young men of integrity, of method, order, precision, and dignity. By familiarity with the Bible they were in constant intercourse with the best models of character, and they proved that the Scriptures not only kindle lights of guidance when philosophy and reason fail, but they hold up and stimulate to the imitation of the highest order of manliness.

A manufacturer and merchant related to us one day the history of two young men who, in his establishment, became "free" at the same time, the one a "Bible clerk," and the other not so. They both married early after their "freedom," and the one valuing the Bible, valued its institutions, and thus honored the Sabbath and the sanctuary, and brought up his family in virtue and prosperity. The other "couldn't afford to pay church rates;" his employer offered to furnish a pew, but he was too proud to accept the favor—spending the Sabbath here and there he was known as no church-goer, and became an object for the vicious; and to nothing but his waste of the Sabbath could be traced the habits of expenditure and dissipation that ruined the man. "Now," said the employer, "the one lives in his own house, virtuous and happy; the other needs charity to keep him along."

A CAMEL MARKET: BARGAINING BY PANTOMIME.

Huc, in his *Travels in Tartary*, says:—The Blue Town is especially noted for its great trade in camels. The camel market is a large square in the center of the town. The animals are ranged here in long rows, their front feet raised upon a mud elevation constructed for that purpose, the object being to show off the size and height of the creatures. It is impossible to describe the uproar and confusion of this market, with the incessant bawling of the buyers and sellers as they dispute, their noisy chattering after they have agreed, and the horrible shrieking of the camels at having their noses pulled, for the purpose of making them show their agility in kneeling and rising. In order to test the strength of the camel, and the burden it is capable of bearing, they make it kneel, and then pile one thing after another upon its back, causing it to rise under each addition, until it can rise no longer. They sometimes use the following expedient. While the camel is kneeling, a man gets upon his hind heels, and holds on by the long hair of its hump; if a camel can rise then it is considered an animal of superior power. The trade in camels is entirely by proxy; the seller and the buyer never settle the matter between themselves. They select indifferent persons to sell their goods, who propose, discuss, and fix the price; the one looking to the interests of the seller, the other to those of the purchaser. These "sale-speakers" exercise no other trade; they go from market to market to promote business as they say. They have generally a great knowledge of cattle, have much fluency of tongue, and are, above all, endowed with a knavery beyond all shame. They dispute by turns, furiously and argumentatively, as to the merits and defects of the animal; but as soon as it comes to a question of price, the tongue is laid aside as a medium, and the conversation proceeds altogether in signs. They seize each other by the wrist, and beneath the long wide sleeves of their jackets indicate with their fingers the progress of the bargain. After the affair is concluded they partake of the dinner, which is always given by the purchaser, and then receive a certain number of sapeks, according to the custom of different places.

TRICKS OF TAILORS.

The *Home Journal*, in a pleasant homily upon the ways of tailors, shows up some of the tricks of trade.

Tailors must live; at least they think so, and we have no objection. Yet they are great tyrants, and have ingenious ways of torturing their victims. One way is this: They invent a fashion which is strikingly peculiar, and get it into vogue by various arts best known to themselves; for example, *very* short overcoats, with long waists, which look well on men like Count Rossi whose figure is faultless. Their next movement, after everybody is overcoated for the winter, is to bring out a garment which differs as much as possible from the one in fashion; that is, an overcoat with skirts to the heels and waist under the armpits. They get half a dozen men of high fashion, who look well in anything, to parade this new invention in Broadway, and make the short-coated majority appear out of date. The maneuver succeeds; all the dandies are driven to the extravagance of ordering a superfluous coat; the tailors smile and the dandies bleed, or their fathers do. Some time ago our tailor tyrants put us all into long waistcoats, and, consequently, into continuations that just lapped over the hips. Suddenly the waistcoats were abbreviated four inches. What was the consequence? Why, of course, the continuations "failed to connect," and he who would not exhibit to mankind a broad belt of white around his waist, was compelled to discard all his store of well saved unnameables. And in vain shall the oldest customer protest and order garments of the last fashion. Consider my reputation, sir, says the tailor, with the air of offended majesty.

A HINT FOR THE UNSUCCESSFUL.

The following, from Claxton's "Hints for Mechanics," will apply with equal force to mercantile men:—

As to *luck*, as I have said before, there is more in the sound of a word which people have got used to than in the thing they are thinking of. Some luck there is, no doubt, as we commonly understand the term, but very much less than most persons suppose. There is a great deal which passes for luck which is not such. Generally speaking, your "lucky fellows," when one searches closely into their history, turn out to be your fellows that know what they are doing, and how to do it in the right way. Their luck comes to them, because they work for it; it is luck well earned. They put themselves in the way of luck. They keep themselves wide awake. They make the best of what opportunities they possess, and always stand ready for more; and when a mechanic does thus much, depend upon it, it must be hard luck indeed, if he do not get, at least, employers, customers, and friends. "One needs only," says an American writer, "to turn to the lives of men of mechanical genius, to see how by taking advantage of little things and facts, which no one had observed, or which every one had thought unworthy of regard, they have established new and important principles in the arts, and built up for themselves manufactories for the practice of their newly discovered processes." And yet these are the men who are called the lucky fellows, and sometimes envied as such. Who can deny that their luck is well earned, or that it is just as much in my power to "go ahead" as it was in theirs?

INDUSTRY THE ROAD TO SUCCESS.

It is a proverbial remark, founded on experience and common sense, that Satan will employ him who does not find employment for himself. Industry will secure the confidence and encouragement of good men. What is it that we first inquire after respecting one who is just coming forward on the arena of public life? Brilliant talents may be desirable; respectable connections may have an influence; property may serve as an outfit; but, after all, our real judgment of the man, and our readiness to commit important trusts to his keeping, will depend on something more inherent and personal. We must know that he is industrious and faithful. Without these abiding qualities, capacity, and family, and fortune will seem light as air and empty as a bubble.

It is instructive to ask who they are that rise to the highest distinctions both in Church and State. Flashes of genius and outbursts of efforts usually accomplish but little. We hear much of fair openings and happy beginnings; but in a great majority of instances, the men of persevering diligence bear away the palm. The best talent on earth is that of assiduous application.—*Spring-time of Life.*

THE BOOK TRADE.

- 1.—*Select Speeches of Kossuth.* Condensed and abridged, with Kossuth's express sanction, by Francis W. Newman. 12mo., pp. 445. New York: C. S. Francis & Co.

No man in so short a time ever made so many speeches. (little more than half a year,) as Kossuth. The number, great and small, exceeded five hundred. His orations, it is well remarked, are a tropical forest, full of strength and majesty, tangled in luxuriance. Unsited to form a book without abridgment, they contain materials adapted equally for immediate political service, and for permanence as a work of wisdom and of genius. Mr. Newman has in the preparation of the present volume cut short what is of temporary interest, condensed what he considered too amplified for his limits and for written style, pruning down the repetitions which are inevitable where numerous audiences are addressed by the same man on the same subject. But amid all these liberties, he has, we think, retained not only the true sentiments and arguments of the speaker, but his words and forms of thought and all that is characteristic of his genius. The compiler may be regarded, to some extent, a translator as well as reporter; and we are assured that he has received Kossuth's written approval and thanks. The volume has a fine engraved portrait of the Hungarian patriot.

- 2.—*A Defence of the Eclipse of Faith.* By its Author. 12mo., pp. 208. Boston Crosby, Nichols & Co. New York: Evans & Dickerson.

We noticed in this department of the *Merchants' Magazine*, soon after its publication in this country, the "Eclipse of Faith," by Henry Rogers, one of the ablest Edinburgh reviewers. That work was regarded by many as the most effective attack that had been made, on the sceptical philosophy of modern times. Prof. F. W. Newman, the leading advocate of English rationalism, whose "Phases of Faith" had been so remorselessly criticised by Mr. Rogers, has thought proper to issue a new edition of his work, in which, besides some modifications in the original text, he has introduced a "Reply to the Eclipse of Faith," and a chapter on the "Moral Perfection of Jesus," all having reference to the arguments of his antagonist. Both the reply and the additional chapter have been included in the American edition of Mr. Rogers' "Defence," in order that the reader may have the fairest opportunity to judge of the merits of the controversy. The discussion has been conducted with great ability on both sides.

- 3.—*Poems: Descriptive, Dramatic, Legendary, and Contemplative.* By WILLIAM GILMORE SIMMS, Esq. In 2 vols. 12mo., pp. 346 and 360. New York: J. S. Redfield.

These volumes contain most of the poetical works of the author, including *Norman Maurice*, a tragedy; *Atalantis*, a tale of the sea; *Tales and traditions of the South*; *the City of the Silent*; *Southern Passages and Pictures*; *Historical and Dramatic Sketches*; *Scripture Legends*; *Francesca da Rimini*. "Atalantis" is an imaginative story, in the dramatic form, its plot simple but effectively managed, and, like many of his poems, contains much beautiful imagery and fine description. As a poet and novelist, Mr. Simms seems to have been equally successful; and his productions are worthy of the beautiful and enduring form in which they are now being re-produced by Mr. Redfield, the publisher. We prize them as a most valuable addition to our library of standard American authors.

- 4.—*Egeria: or, Voices of Thought and Counsel, for the Woods and the Wayside.* By W. GILMORE SIMMS, Esq., author of "Katharine Walton," &c. 12mo., pp. 319. Philadelphia: E. H. Butler & Co.

The collection embraced in this volume, we are told by the author, has been the unpremeditated accumulation of years. It consists of aphorisms, in prose and verse—a body of sentiment and opinion hastily derived from excursive reading, but the greater portion grown out of the author's purely individual experience, from patient as well as passing observation. Many of the sentiments and opinions will find a response in every reflecting mind.

- 5.—*Homeopathic Practice of Medicine*: Embracing the History, Diagnosis, and Treatment of Diseases generally, including those peculiar to Females, and the Management of Children. Designed as a text-book for the Student, as a concise Book of Reference for the Profession, and simplified and arranged for Domestic Use. By Dr. M. FRELIGH, late Resident and now Visiting Physician to the New York Homeopathic Dispensary Association, etc. 12mo., pp. 577. New York: Lampport, Blakeman & Law.

We are not disposed to dispute the statements of the author, that the success of Homeopathy over every other system of medical practice is so well established that it requires no vindication. That we leave to the old school Allopathists. It is certainly a philosophical system, and has been adopted by some of the most enlightened minds, in Europe and America. The present work is highly commended by some of the most distinguished practitioners (some of whom are authors) in the United States. Although an ardent disciple of Hahnemann, the author departs in some respects from the strictness of his teachings, as, for instance, in the matter of external applications. The most clear, concise, and explicit language is used throughout, and technical terms and phrases are explained for the benefit of domestic use.

- 6.—*A Year with the Turks*; or Sketches of Travel in the European and Asiatic Dominions of the Sultan. By WARRINGTON W. SMITH. 12mo., pp. 251.

The design of Mr. Smith is to give a plain, unvarnished account of a journey through Turkey, and the character of her population. At the present state of affairs, all that relates to this country is invested with more than ordinary interest. The author writes from his own experience, having visited most of the Turkish provinces, and his intercourse with many individuals belonging to that region, gives him an opportunity to judge of the present condition of its inhabitants. This he seems to have done fairly. While exposing the evils existing in this empire from the oppression of the government officials and the lawlessness which prevails in some of the provinces to a great extent, he still has faith in their capability of improvement and elevation, and claims for the people considerable industry and patriotism. His adventures, while sojourning in Turkey, are written in a spirited style. A map is prefixed to the volume, which will aid the reader in fixing the localities, and adds to the value of it. Such a work must be more than usually acceptable, as the attention of the reading public is turned in that direction.

- 7.—*The Catacombs of Rome*, as Illustrating the Church of the first Three Centuries. By the Right Rev. WM. INGRAHAM KIP, D. D. 12mo., pp. 212. New York: J. S. Redfield.

The Rev. Dr. Kip, the new Missionary Bishop of California, is known in the Church and in the literary world as the author of a number of popular works connected with the literature and religion of the Church. The Catacombs of Rome are full of interest; but the account of their inscriptions has heretofore been mostly locked up in ponderous tomes in other tongues. Dr. Kip, when in Rome in 1845, became exceedingly interested in the study of these antiquities, and although in the preparation of the present volume he disclaims all attempts at originality, he has imparted to his descriptions the freshness of his own recollections. The volume is copiously illustrated, and published in a creditable style.

- 8.—*Crystalline*: or, The Heiress of Fall Down Castle. A Romance. By F. W. SHELTON, A. M., author of the "Rector of St. Bardolph's," &c. 12mo., pp. 202. New York: Charles Scribner.

The powerful imagination and vivid fancy of the author seem to have found in the present production the greatest scope for expansion. A cotemporary, who has probably read the story, says the author has given it the appellation of a romance, and the illusion created by the title is so well kept up that, as we understand, many persons have already read it by mistake for a romance—as in Pope's preface to the Rape of the Lock, many ladies are said to have read the *Comte de Gabalis*. It has several very pretty and appropriate illustrations.

- 9.—*Advanced Latin Exercises, with Selections for Reading*. American Edition. Revised, with Additions 18mo., pp. 162. Blanchard & Lea.

The universal commendation bestowed upon this series of educational classics by teachers and those competent to judge, renders anything more on our part than the mere announcement unnecessary.

- 10.—*Documents of the Constitutions of England and America.* From Magna Charta to the Federal Constitution of 1789. Compiled and edited, with Notes, by FRANCIS BOWEN, Alford Professor of Moral Philosophy and Civil Polity in Harvard College. 8vo., pp. 142. Cambridge: John Bartlett.

Professor Bowen has brought together in this volume, to illustrate the rise and progress of the English and American constitutions, the following documents, viz.: Magna Charta; Confirmatio Chartarum; the Statute of Treasons; the Petition of Rights; the Habeas Corpus Act; the Bill of Rights; the Massachusetts Body of Liberties; Confederacy of the New England Colonies; Franklin's Plan of Union of the Colonies; Declaration of Independence; the Virginia Bill of Rights; Articles of Confederation; the Massachusetts Declaration of Rights; and the Constitution of the United States. It forms a most valuable compend of reference for the statesman, and a text-book of constitutional law, on England and America.

- 11.—*Old Sights with New Eyes.* By a Yankee. With an Introduction by Robert Baird, D. D. 12mo., pp. 372. New York: M. W. Dodd.

The production of a young New England clergyman, whose modesty constrained him to send it forth without his name. To those who desire to read well written and appropriate notices of the places of chief interest in "Old Europe," Dr. Baird recommends the book without reserve. It is evidently the production of a highly cultivated mind. The style is pure and beautiful, and the descriptions of places and things are exact, concise, and highly interesting.

- 12.—*The Myrtle Wreath; or Stray Leaves Recalled.* By MINNIE MYRTLE. 12mo., pp. 380. New York: Charles Scribner.

A delightful volume, containing some seventy tales and sketches, with a few simple and graceful verses, on a variety of topics. The subjects of this anonymous and unpretending writer are drawn mostly from lowly life. The sketches disclose a truthful eye and a skillful hand, and appear as transcripts of actual incidents, characters, and emotions, all evincing true womanly feeling, filled with worthy thoughts and generous sentiments. It is an excellent book to while away the tedium of travel.

- 13.—*History and Rudiments of Architecture.* Edited by John Bullock, Architect, Civil Engineer, and Editor of the "American Artisan." 12mo., pp. 254. New York: Stringer & Townsend.

The present work is divided into four parts, embracing—1st, the orders of architecture; 2d, architectural styles of various countries; 3d, the nature and principles of design in architecture; and 4th, an accurate and complete glossary of architectural terms. It is adapted to the use of architects, builders, draughtsmen, machinists, engineers, and mechanics. It is a concise, but at the same time very comprehensive treatise.

- 14.—*Field Book for Railroad Engineers.* By JOHN B. HEXCK, A. M., Civil Engineer. 18mo., pp. 243. New York: D. Appleton & Co.

This volume, which is done up in the form of a pocket-book for the convenience of railroad engineers, contains formulæ for laying out curves, determining angles, leveling, calculating earth-work, and all other matters connected with railroad surveying. It is copiously illustrated with the usual tables, and appears to be a very complete manual of its class.

- 15.—*The Winter Lodge; or Vow Fulfilled.* An Historical Novel, the sequel to "Simon Kenton." By JAMES WEIR. 12mo., pp. 231. Philadelphia: Lippincott, Grambo & Co.

An American novel, the scenes laid in the "Far West," if indeed we have at this time any *far* West. Those who read and admired "Simon Kenton," from the same pen, (and this is a sequel to that tale,) will fully appreciate the merits of this last production of Mr. Weir.

- 16.—*Little Ferns for Fanny's Little Friends.* By the author of "Fern Leaves." With Original Designs, by FRED. M. COFFIN. 18mo., pp. 297. New York: J. C. Derby.

We noticed the "great" Ferns in a former number of this Magazine. Strong, good common sense, and wit without vulgarity, runs through every page and paragraph of this popular writer. The sale of some thirty thousand copies of the present volume in less than a twelvemonth is no slight compliment to the genius of the author.

- 17.—*Narrative of a Voyage to the Northwest coast of America in the years 1811, 1812, 1813, 1814, on the First American Settlement on the Pacific.* By GABRIEL FRANCHERE. Translated and Edited by J. V. HUNTINGTON. 12mo., pp. 376. New York: J. S. Redfield.

This narrative, though written many years ago in French, is now for the first time translated. The author is still living; and in 1846 the Hon. Thomas H. Benton, in his speech on the Oregon boundary question, quotes it, and pays a high tribute to its merits. Mr. Huntington, the translator, has preserved the Defoe-like simplicity of the original narrative. The narrative is vivid, and the descriptions picturesque. The personal adventures of the narrator and the varying fortunes of a great enterprise, the fur trade, happily mingle. The clerkly minuteness of the details is not without its charm, and their fidelity speaks for itself. The misstatements and inaccuracies of Irving's Astoria are alluded to and corrected by the author at the close of the volume.

- 18.—*The Workingman's Way in the World: Being the Autobiography of a Journeyman Printer.* 12mo., pp. 359. New York: J. S. Redfield.

This book has one merit at least—the author writes what he has seen; and we think it will be found to possess a still higher merit—that what he has seen and been in the course of his life is worth writing about. It is, on the whole, an exceedingly interesting and withal instructive piece of autobiography. The author is an Englishman, and touches upon the social condition, &c., of the working classes. He does not think that the evils under which workingmen at times so grievously suffer are to be redressed by a recourse to the socialistic practice.

- 19.—*The Yemassee: A Romance of Carolina.* By WILLIAM GILMORE SIMMS, Esq., author of "The Partisan," "Guy Rivers," "Martin Faber," "Border Beagles, &c., &c." 12mo., pp. 455. New York: J. S. Redfield.

The Yemassee was originally published nearly twenty years since. The present is a new and revised edition, uniform with several of the author's works recently reproduced by Mr. Redfield, in a handsome library style. Mr. Simms's portraits are true to the Indian of the South as his ancestors knew him at early periods, and as in certain situations he may still be known.

- 20.—*The Hydropathic Cook Book.* With Recipes for Cooking on Hygienic Principles, &c. By R. T. TRALL, M. D. With numerous illustrative Engravings. 12mo., pp. 226. New York: Fowlers & Wells.

Dr. Trall has given in this little volume, in the smallest possible compass, a summary of the principles and facts, in chemistry and physiology, which apply to the philosophy of diet. It also furnishes the details of cooking on hygienic principles, plain formulas for preparing an ample variety of dishes with due regard to the laws of life and health.

- 21.—*The Christian World Unmasked.* By JOHN BRIDGE, A. M., Vicar of Ereton, &c., &c. With a Memoir of the Author by the Rev. Thomas Guthrie, D. D., Member of St. John's Free Church, Edinburgh. 18mo., pp. 207. Boston: Gould & Lincoln.

The author in this work, written some hundred and fifty years since, handles the Bible cleverly, giving his idea of the sacred text with marked clearness and force. The style is quaint, and we regret to notice that the American editor has seen fit to expunge some words "on account of their excessive quaintness."

- 22.—*Busy Moments of an Idle Woman.* 12mo., pp. 285. New York: D. Appleton & Co.

Contains several stories. The first one, "Edith," shows how one with true energy of character can rise above all reverses of fortune. The characters are well sustained. The authoress gives an insight into fashionable society. Such true pictures of life cannot fail to interest her readers.

- 23.—*Dashes of American Humor.* By HOWARD PAUL. Illustrated by John Leek. 12mo., pp. 306. New York: Garrett & Co.

These "Dashes of American Humor" were originally published in London. The volume consists of a series of sketches designed to exhibit the laughable and ridiculous side of American life and character. If the book is not a very instructive one, it will, we have no doubt, pass in some circles as a very humorous and amusing one.

- 24.—*An Epic of the Starry Heaven.* By THOMAS L. HARRIS. 12mo., pp. 210. New York: Partridge & Brittan.

This poem, we are told in an ingenuous, well-written, and philosophical introduction from the pen of Mr. Brittan, "was spoken by Thomas L. Harris in the course of fourteen consecutive days, the speaker being in a *trance state* during its delivery; and further, that "from 125 to 250 lines were dictated at each session, of which there were twenty-two in number, and the precise time occupied in communicating the whole was twenty-six hours and sixteen minutes." It is not our province to discuss the merits of the statement, or decide upon the source of inspiration; but we are free to say that it has passages of marked power and beauty, and more than ordinary poetic merit.

- 25.—*Partridge and Brittan's Spiritual Library.* The "Telegraph Papers." Edited by S. B. BRITTAN. Vol. 1. 12mo., pp. 465. New York: Partridge & Brittan.

The present volume contains a series of papers, published from time to time in the "Spiritual Telegraph." They are published in the present more durable and convenient form, as affording a reliable record of the interesting phenomena which characterize the present age. Those who take an interest in these "manifestations," or feel a desire to investigate the subject, will find much in the present volume calculated to satisfy the interest and aid in the investigation.

- 26.—*Spirit Manifestations Examined and Explained.* Judge Edmonds Refuted: or an Exposition of the Involuntary Powers and Instincts of the Human Mind. By JOHN BOVEE DODS, author of "Philosophy of Electrical Psychology," "Immortality Triumphant," &c., &c. 12mo., pp. 252. New York: Dewitt & Davenport.

The design of this work will appear from the author's title-page, as quoted above. It is written with considerable ability, and should be read by all who take an interest in the investigation of "spiritualism."

- 27.—*Vara: or the Child of Adoption.* 12mo., pp. 316. New York: Robert Carter & Brothers.

A pleasantly written romance. The heroine of the story, born of missionary parents in one of the isles of the Pacific Ocean, and sent home to be educated. She is adopted by some friends of the mission, and having received an education suitable to a refined state of society, she rejects all offers of ease and affluence, to return to her island home for the benefit of the poor natives, whose condition was so vividly impressed upon her childhood. The story is well told, and has a good moral.

- 28.—*The Practical Surveyor's Guide:* Containing the necessary information to make any person of common capacity a finished Land Surveyor, without the aid of a Teacher. By ANDREW DUNCAN, Land Engineer. 18mo., pp. 121. Philadelphia: Henry Carey Baird.

A concise synopsis of the whole subject, furnishing in a comprehensive form from the best practical information hitherto published and scattered through many eminent authors. Mr. Duncan was well fitted for the preparation of such a manual, having had more than thirty years' experience as a surveyor.

- 29.—*Hand-Book of German Literature, &c.* By G. J. ADLER. 12mo., pp. 550. New York: D. Appleton & Co.

This volume contains Schiller's Maid of Orleans; Goethe's Iphigenia in Tauris; Tieck's Puss in Boots; and the Xenia, by Goethe and Schiller, and a variety of specimens of German prose writers, from the middle of the sixteenth to the middle of the nineteenth century. It is one of a most excellent series of text books for the study of the German.

- 30.—*New Music:*

William Hall & Son, 239 Broadway, have published the following pieces of music since our last number:—*Fantasie de Salon sur l'Opera Ernani*; *Norma*; *Il Don Giovanni*, all by Wm. Vincent Wallace. These pieces form part of a series in course of publication under the general title of "Souvenir de l'Opera."

Samuel C Jollie has recently published *Le Violette Polka*, composed by Mrs. R. Gonzalez; *Head with the Idle Tales*, by Thomas Baker, music by Jullien; *Lilly Waltz*, composed by Miss Lizzie V. Trall; *the Flowers are Sleeping*, poetry by J. W. Lake, music by Thomas Baker.

- 31.—*Theological Essays, and Other Papers.* By THOMAS DE QUINCEY, author of "Confessions of an English Opium-Eater," etc. 2 vols., 12mo., pp. 310 and 276 Boston: Ticknor, Reed & Fields.

The admirers of modern English literature are indebted to the Boston publishers for a very complete and beautiful edition of the writings of De Quincey. The two volumes before us are the eighteenth and nineteenth of the series, and comprise a number of theological essays, viz., Christianity as an Organ of Political Power—Protestantism—On the supposed Scriptural Expression of Eternity—Judas Iscariot—On Hume's Argument against Miracles—Secession of the Church of Scotland, &c. The other papers in the volumes relate to Milton, Charlemagne, Modern Greece, Lord Carlisle on Pope, Greece under the Romans, &c. This edition is worthy of a place in the library of every "gentleman and scholar."

- 32.—*Musical Letters from Abroad:* including detailed accounts of the Birmingham Norwich, and Dusseldorf Musical Festivals of 1852. By LIONEL MASON. 12mo. pp. 312. New York: Mason Brothers.

Mr. Mason is well known in the musical world as a composer and teacher of music. He visited Europe in 1852, and the present volume contains a series of fifty-four letters relating almost exclusively to musical subjects, and more particularly to the department of church music, or to the service of song in religious worship. Many of these letters were published in the periodicals of the day; but in their collected form they will doubtless prove highly acceptable to all persons who have an ear or taste for music.

- 33.—*Critical and Miscellaneous Writings of T. NOON TALFOURD*, author of "Ion." Third American Edition, with Additional Articles never before published in this country. 8vo., pp. 176. Boston: Phillips, Sampson & Co. New York: J. C. Derby.

The present volume contains papers contributed by the author from time to time to the leading reviews and magazines of Great Britain, his celebrated speech in the prosecution of the Queen *vs.* Moxon for the publication of Shelley's works, and several of the author's speeches while a member of the British Parliament. It is the most complete edition of the miscellaneous productions of this distinguished British essayist that has yet been published. The recent death of the author renders the publication at this time particularly opportune.

- 34.—*The Worth of the Worthless:* A Christmas and New Year's Story. By JOHN ROSS DIX.

Mr. Dix is well known to our readers as the writer of a number of very clever works, and particularly as the author of "Passages from the History of a Western Life," in which he relates much of his own sad and sorrowful experience. The present tale, published under the direction of the Shakspeare Division of the Sons of Temperance, in Boston, illustrates the law of kindness in redeeming the inebriate from the sorrows and sufferings of his malady. The pure and correct literary taste of the author lends a charm to his narrative.

- 35.—*Daily Bible Illustrations:* Being Original Readings for a Year, on subjects from Sacred History, Biography, Geography, Antiquities, and Theology. By JOHN KIRRO, D. D., F. R. S. A.

This is the closing volume of Kitto's entire series of Daily Bible Illustrations. These readings relate to the Apostles and the early church. The author has gathered up, and interwoven the historical intimations contained in the Epistles, with the leading matter from the Acts of the Apostles. His conclusions are based upon a critical reading of the sacred text. These volumes are quite popular, we believe, among the more "evangelical" portion of the Christian church.

- 36.—*Purple Tints of Paris:* Characters and Manners in the New Empire. By BAYLE ST. JOHN. Author of "Village Life in Egypt," "Two Years' Residence in a Levantine Family," etc. 2 vols. in one, pp. 446. New York: Riker, Thorne & Co.

Mr. St. John is an Englishman, but, judging from his descriptions of Parisian habits, manners, and character, not by any means a bigoted one. The institutions of France and the peculiarities of the people are discussed with apparent candor and fairness, and on the whole the present work is calculated to impart much valuable information in relation to the condition of the Empire under Napoleon the III.