

MISCELLANEOUS.

The North Pacific Expedition.

The expedition which has sailed from our country to visit Japan and various other countries, is one of much interest to men of science. True, in these expeditions some particular sciences have received much greater attention. The single department of zoology has, in some cases, been placed in charge of a corps of six or more savans, while other sciences have been entirely neglected. In the present only two or three of the scientific corps could be detailed for that department; but, on the other hand, important subjects of research, before but slightly considered or left untouched, have here received their due proportion of attention.

Mr. Storer, of Boston, accompanies the expedition as a chemist and has a fine apparatus. Mr. Kern, a photographer, also belongs to the corps scientific, and has good apparatus and an abundance of materials, and Commander Ringgold himself will act as chief astronomer and general superintendent. As assistant astronomers he has appointed Lieut. J. M. Brooke, and also Mr. Coolidge, of Harvard Observatory at Cambridge, whose studies both here and at the principal Observatories in Germany, well fit him for the position. In this department also most of the sea officers of the squadron will assist, especially in the minor operations. The instruments provided are numerous and of a superior character.

The science of geography is, of course, the great subject of investigation. In this Commander Ringgold has determined that the observations shall be complete. Economic considerations must of course have the primary position; the adaptation of the waters of the country to the purposes of navigation, whether for the commercial or whaling interest; its fisheries; its internal resources; vegetable productions, wood, mineral wealth, coal or metals. The accurate survey of all the coasts and islands lying within the scope of observation will also be a primary object. The topographical and hydrographical parties for this purpose will be formed from the sea officers of the squadron, who have been judiciously selected by Commander Ringgold for their proficiency in these departments. Most prominent among these stands Lieut. Commanding Rodgers, of the steamer John Hancock, whose experience on the coast survey, well fits him for this department. Landscape views, pictures of individuals of native tribes, &c., will be taken. There are corps for ornithology, geology, and zoology, in short, every department of science is represented on that squadron, and we have no doubt but the returns will be a rich harvest of important new information to our country, and the expedition will no doubt prove an honor to it.

Rheumatism.

As this disease is very common, and is a very painful one, any useful information on the subject may be of benefit to some of our readers. The following is part of an article on the subject from the "Dollar Newspaper," Philadelphia:—

"Rheumatism is a disease of the blood, and in order to effectually remove the disease, the rheumatic poison, (perhaps the urate of soda) must be eliminated from the circulation.—The principal depurating organs are the emunctories of the kidneys, the lungs, and the skin. Through the skin and the kidneys alone can the rheumatic poison be removed, and far more through the latter than the former. Every man afflicted with rheumatism should have a long bath tub, in which he can completely immerse his whole body. In such a tub (made of tin perhaps) he should every morning take a warm, weak, ley bath, rubbing the surface briskly with a flesh-brush till it glows finely. This bath should be used for four or five days, and then, for a few days, a strong salt-water bath (warm) should be substituted. This is the best external treatment known to the profession, and the great trouble is that it is so little known to them. Warm flannel should, of course, be constantly worn by rheumatics.

But the great remedy for rheumatism, after all, is diuretics; and among the best of them is the meadow saffron (colchicum autumn-

ale.) The tincture of colchicum seeds is generally used. The brandy tincture is the best for decidedly nervous rheumatics: the wine tincture for those of a firm nerve fibre. Of either of these tinctures, 25 drops three times a day, for an adult, till it operates as a slight laxative (when the dose should be lessened) is about the right quantity. After using the tincture of colchicum for ten or twelve days, the solution of iodide of potassium (of the strength of one ounce to the pint of rain-water,) half a teaspoonful twice a day will speedily complete the cure. An experience of several years in the treatment of all grades of rheumatism has established the correctness of the above treatment. I have never seen a case that would not yield to its powers.—Sometimes acids or alkalies (according as the urinary deposit is white or red,) may be used with fine effect. The best acid that can be used in rheumatism is the citric, and the best form is that of sour lemonade.

The "Lynchburg (Va.) Express" says:—A gentleman wishes us to publish the following for the relief of humanity. He says he has known a number of cures made by it, and all of them in a short time:—Half an ounce of pulverized saltpetre, put in half a pint of sweet oil; bathe the parts affected, and a sound cure will speedily be effected.

[We would state that the first extract is decidedly orthodox, and the information should be extensively circulated. The wine of colchicum affects a cure upon some persons subject to gout in a very short period. We cannot say anything respecting the practical effects of the latter receipt, but it is so simple that it can easily be tried, and that without risk.

Railway Apothegms.

CONSTRUCTION.—Make your road to last for years, and not for days.

Let your cuttings and embankments be guarded against falls of the one and slides of the other.

Let your curves be of large radius, and do not regard expense in having them so.

Avoid drawbridges utterly, if you can, and if they must be used let the approaches be open and clear for 1,500 feet on each side of them.

Build your permanent bridges in a thorough manner, and, whether of stone, wood, or iron, guard them effectually against the ordinary causes of decay—and thus, partially avoid massacres!

Use compound rails in preference to simple ones.

Increase the number of your "cross ties," and the item of repairs will be decreased.

If you cross the rails of other roads, do so above or below them, and never on a level.

Let ordinary road-crossings be equally above or below your rails, and your conscience—if you have any—will be clearer.

OPERATION.—Provide a numerous and efficient police and you will be less criminal and have fewer damages to pay!

Establish careful, clear, and stringent regulations, and see that they are enforced, by punishing, remorselessly, their violation.

Let those regulations, and all signals, be unmistakable; and, if possible, uniform throughout the country, and the country will be the gainer as well as yourselves.

Police your road and "moving stock" every day, at least, and so lessen the chances of accident.

Be sure the men you employ are temperate, sensible, and active, and pay such liberally.

Avoid cheap directors, cheaper presidents, and careless switchmen.

Railroads were contrived for high velocities, and (if you mind these maxims) such velocities are the best; in other words, care will prevent accidents.

Money is plenty—so let foresight and policy guide your "rail" operations, and your dividends will be larger. LEYLAND.

Stevens & Kingsley's Sewing Machine.

Notwithstanding the great variety of sewing machines now patented and in use, new forms and improvements are constantly being added. The novelties of the machine above referred to, relate to the shuttle motion, the feed motion, the method of holding the cloth or material to be sewed in contact with the

feeding device, and the means of producing a proper tension on the thread. The improvements make the machine a very convenient article for sewing boot legs and other articles of similar form, as the channel through which the shuttle slides, is within a long cylindrical tube around which the leg of the boot or other similar article, may be bent in the operation of sewing. Engravings would be necessary to render the construction of the parts to which the improvements relate, well understood. The inventors, M. W. Stevens and E. G. Kingsley, of Stoughton, Mass., have taken measures to secure a patent.

The Steam Yacht North Star.

The following is an original extract taken from the proof sheets of the next number of the "Knickerbocker Magazine," by Mr. Curtis, respecting the rise and progress of Cornelius Vanderbilt, Esq., the proprietor of the "North Star":—

Until the age of sixteen, Mr. Vanderbilt was brought up on a small farm on Staten Island, owned and cultivated by his father. Arrived at this age, however, he found himself with a growing desire to make his livelihood by following the sea. He therefore left the farm, and commenced running a small sail boat between Staten Island and New York, which was owned by his father. After the age of nineteen he commenced life on his own account, following the same business for the space of two years.

This brought him to the beginning of 1817, when his business life began with an activity and increased with an energy seldom equalled and more rarely surpassed. He now took charge of a small steamer running between New York and Elizabethtown, N. J., belonging to Thomas Gibbons. In 1818 he attended to the building of the steamer 'Bellona,' and was her captain for five years. In 1820, he built the steamer 'Caroline,' which, it will be remembered, in the troubles on the Canadian borders, in the commencement of the 'Patriot' movement, was cut out at night at Schlosser, on the Niagara river, and sent, wrapt in flames, over the Great Cataract. This was the first steamer which Captain Vanderbilt built on his own account.

In 1821, he built the 'Fanny,' in 1822, the 'Thistle' and the 'Emerald,' in 1824 the 'Swan,' in 1826, the 'Citizen,' in 1827-8, the 'Cinderella,' the 'Clifton,' the 'Union,' the 'Champion,' the 'Nimrod,' the 'Livingston,' the 'Cleopatra,' the 'Sound Champion,' the 'North Carolina,' the 'Governor Dudley,' the 'Vanderbilt,' the 'Gladiator.' These last four steamers he built for a company, for the purpose of running between Washington and Charleston, forming the regular mail line.

Then Captain Vanderbilt built the 'Sylph,' the 'Augusta,' the 'Emerald,' the 'Red Jacket,' the 'Hugenot,' the 'Hannah Burt,' and the 'Eastern,'—all fine boats—the 'C. Vanderbilt' and 'Commodore,' which formed the great Boston line by the way of Stonington and the Railroad. Captain Vanderbilt next built eight steamers for the Transportation Company, and the five steamers (?) that ran between Havana and Mantanzas. He also purchased, refitted, and ran the 'New Haven,' the 'Huntress,' the 'Water-Witch,' and the 'Worcester.' His next 'American productions' in this kind were the steamships 'Prometheus,' the 'Daniel Webster,' the 'Star of the West,' the 'Northern Light,' and the 'North Star.'

Nor are the vessels here enumerated all that have been built by Capt. Vanderbilt; there are several others whose names we cannot now recall.

Now we should like to have this hasty sketch of a poor American farmer's boy's early career and after advancement—this patent lesson of what industry, energy, enterprise, and integrity, can accomplish in a country of free institutions and free American republicans—we should be glad to have it seen and felt in the various quarters of Europe where the steamer North Star shall unfurl the flag of our country.

Mr. Vanderbilt has been, as we have seen, entirely the architect of his own fortunes. Amassing immense wealth, he has, at the same time, made the fortunes of thousands of others. He is now a large proprietor of manufacturing and engine building establish-

ments. He probably gives employment to more hands than any other one man in America.

Events of the Week.

ATMOSPHERIC TELEGRAPH.—We have received a communication from a correspondent who points out some difficulties in the way of the successful operation of an atmospheric telegraph. The first objection is "1st. a perfect vacuum cannot be formed in the tube; 2nd. The tubes must be accurately bored out and fitted perfectly straight; 3rd. The piston must be packed, causing great friction, impossibility of oiling, and hence the packing must heat."

We have said before, that the difficulties in the way of its successful operation, are mechanical. If these can be overcome, there is no reason why it should not operate. We are well aware of the impossibility of forming a perfect vacuum with the best air pumps; and so are those connected with the Boston Atmospheric Telegraph. It is not positively necessary that the tube should be perfectly bored throughout; the packing of the piston obviates the necessity of having a perfect tube. We could not raise an objection against the plan by saying "the piston will heat," and we are positive that our correspondent has no correct information on this point. There are difficulties in the way of a successful atmospheric telegraph; if there were none, the system would have been in operation long ago. The question is, does Mr. Richardson's plan remove them? This question, on a small scale has been settled, and it will soon be, we have been informed, on a large scale.

A BRIGHT IDEA ABOUT HEAT.—"Suppose all the obstacles to the perfect and economical transfer of heat removed, so that all the heat in a cylinder full of steam could be transferred from the exhaust to the contents of the steam pipe—transferred from the outgoing to the in-coming medium, what would be the total mechanical effect of a unit of heat?"

The above we have quoted from a scientific cotemporary, who calls for some one to answer his query. We refer him for an answer to the gentleman who made the discovery that 1 lb. of coal can be made to pump the Niagara river dry in a day.

Instead of progress having been made in physical science, we sometimes think, from the stuff uttered by pretenders to scientific knowledge, that there never was such a dearth of the genuine article. The above quoted paragraph simply means, "what would be the mechanical effect of a unit of heat in a steam engine, by exhausting into the boiler." The absurdity of the question shows the depth of the interrogator.

A SIMPLE FIRE ANNIHILATOR.—We perceive that a cotemporary speaks of sulphur as being an effective and simple fire annihilator, and tells of an insurance agent of Troy, N. Y., who recommends it as having been efficacious in one case, of saving his property. It is not a little remarkable that many discoveries are continually being developed some years after they have been described in our columns, and this is one among a number of others. If any person will turn over to page 2, Vol. 7, Scientific American, he will see in some comments upon the once celebrated Phillips' Fire Annihilator, that we distinctly mentioned sulphur as having been successfully used for extinguishing fires in chimneys.

Improved Mode of Casting Pumps.

An improvement in pumps, by John H. McGowen, of Cincinnati, Ohio, to which this invention forms a necessary appendage, has already been noticed in the Scientific American. Mr. McGowen has a mode of casting his pump, which renders it a much better article than those cast by the old process, and also renders the operation of casting much easier. In this operation the cores which form the interior chamber of the pump, are moulded upon the top of what is called the "knowl" or "drag," in such a manner that they will adhere thereto, and thus keep all the cores in their proper vertical position while the metal is poured. By this arrangement pumps of this description may be cast on either green or dry sand with equal facility. The inventor, Mr. McG., has taken measures to secure a patent.