POLAR EXPLORATION.

The steam whaling bark, *Mary and Helen*, recently purchased by the Government for $100,000, has been taken to Mare Island, to be refitted for the search expedition after the missing *Jeannette*. Her whaling outfit is to be taken out of her, that not being included in the purchase. By the time the vessel is refitted at the Navy yard, she will have cost the Government a good round sum. Her actual value was perhaps $35,000 to $40,000, without taking into account the contingency of profits for the season; but, of course, like all Government purchases, two prices had to be paid. Not that the vessel is not a good one in her way, as she is new, strong and well built. It is probable, however, it will be found that she is much too large for the purpose intended. Speed is of little object where sometimes they do not make a mile a year; but size is a very important factor where the vessel has to be worked in narrow leads, and often "tracked" or hauled along by the men. A vessel the size of the *Corwin*, which went up last year, would be much more convenient.

The selection of officers and men for this expedition will be made in Washington, and it is generally believed that Lieut A. G. Berry, U. S. Navy, will command the expedition.

We do not know what Mr. Berry's experience may have been, but think that a very careful selection should be made of some one with experience in Arctic waters. Capt. Hooper, of the *Corwin*, who went up last year, would have been an excellent choice, as his researches and experience would have been invaluable. His ice pilot, Capt. Smith, now on a whaling voyage, we believe, would also have been a valuable assistant. The assistance of one of the experienced whaling captains would also be of great service. Dr. W. H. Dall, of the Smithsonian Institution, who has spent so many years in coast survey work in Alaska, on his schooner, *Fulton*, would be among the best men that could be found if he would be willing to go. His great general knowledge, scientific ability, and experience with the currents, etc., of the coast, make him eminently fitted to command the expedition. Among others, Lieut. Schwatka was an available man. It is to be hoped that the expedition will not be given in charge of some one who has yet to gain his experience in the Arctic, as much valuable time will be lost if such is the case.

In this connection it may be stated that among the stories current in New York is one that James Gordon Bennett is seriously contemplating an Arctic expedition. Larry Jerome, who is in Europe with him, has recently written to a friend that, while Bennett is enjoying himself greatly as master of a hunt somewhere in England, he is very much depressed and anxious over the Arctic expedition which he equipped and sent out in the name of the *Herald*. He conceived it to be his duty to fit out another expedition in search of the last one, and take command of it himself. He has already telegraphed to stop work on a new yacht he contemplated building in this country, and thinks the money he proposed to spend that way shall be devoted to the building of a vessel to be speedily constructed with the view of encountering ice in the Northern seas. Already he has had some interviews with Scotch ship-builders on the subject. Therefore, the news that Bennett has seriously entered upon this new project may be expected at any time. It is characteristic of Bennett that execution follows closely upon the heels of conception.

News comes from Washington that two polar expeditions are to be fitted out and sent north early in the coming summer, under the direction of General Hazen, Chief Signal Officer, for purely scientific purposes. One, to Lady Franklin's bay, is to be under the command of Lieutenant Greeley, one of the most trusted officers of the Signal Corps; the other will sail from San Francisco and will establish itself at Point Barrow, on the north coast of Alaska. The commanding officer of the second expedition has not yet been designated.—*Scientific Press.*

THE GREAT BRIDGE AT ST. LOUIS.—A few years ago, in anti-bridge days, passengers were ferried across the Mississippi and landed on the crowded levee, at great inconvenience. But now, thanks to a great architect and mechanical skill, the tired traveler sits in his comfortable car until it reaches the depot in the heart of the city. The upper Mississippi has been spanned by 12 great railroad bridges, costing in the aggregate over $20,000,000, and this one at St. Louis has cost as much as all the other 11 combined. This magnificent structure is a monument to the engineering skill of Capt. James B. Eads. How can we describe it? Four massive piers of granite reach down to a rock foundation, more than 100 ft. below the surface of the river, and rise 80 ft. above the water. These stupendous piers support three immense arches, each one 500 ft. long. The arches are composed of chrome steel tubes united by a vast network of iron braces. The bridge has two divisions, the upper portion being used for carriageways, horse-car tracks and promenades. Through the lower division runs a double line of steam railway tracks, on which 100 daily trains go thundering back and forth. Leaving the bridge the trains plunge into a tunnel as dark as midnight, and nearly a mile in length, passing under the city to the great Union depot. As trains now meet at this great central station, and twice a day, it is probably the busiest place to be found in the country, morning and evening one can see no less than a dozen trains standing there ready to depart to all points of the compass.—*St. Louis Times*

THE GRAND CANAL OF CHINA.—This canal is likely to share the fate of the great wall. This water-way was constructed by Kublai-Khan and his successors of the Yuen race, and is 600 miles in length. There are 10,000 flat-bottomed boats on this canal, and these are used in the transportation of grain. The *Echo* states that this great water-way is an enormous "white elephant," as it costs an enormous amount every year for repairs, the appropriations there, as elsewhere, not being entirely devoted to the purpose for which they are meant. Junks are delayed every month while channels are cut for their passage. This year, for the first time since the construction of the canal, the grain from Nanking, with the consent of the government, has been forwarded by sea, and this fact has impelled the Peking authorities to consider the expediency of abandoning the canal as a commercial highway.

ENCROACHMENTS OF GREAT RIVERS.—The extent of the encroachments of rivers like the Mississippi and Missouri upon their banks can only be compared with what is taking place upon the south-eastern shores of Great Britain by the action of marine currents. Indeed, owing to the direct manner in which American rivers impinge upon their banks in certain parts, the destructive action is, in this case, still more rapid. Several thriving towns on the banks of the two rivers specified have within the last few years been swept away by the erosion of their banks.

WHEAT SHIPMENTS VIA HUDSON'S BAY.—Prof. Bell, who has lately returned from England, is gathering information in behalf of the Government to determine the feasibility of opening a route through Hudson bay, for the transportation of grain from the Northwest. It is claimed that grain can be laid down in Liverpool cheaper by the proposed route than by the all-rail route, the Canada Pacific railroad.

RAILROAD CONSTRUCTION FOR 1880.—The *Railroad Gazette* gives the amount of railroad construction in the United States for 1880 as 7,401 miles. The total mileage on Jan. 1, 1881, is set down as 93,898 miles.

IRON AND STEEL IN RUSSIA.

The London *Ironmonger* of January 29 has the following: "The protectionist tendencies of the new Russian Minister of Finance, M. Abaza, have caused a flutter among the iron-masters and coal mine proprietors of Russia. Confident expectations are expressed that the new metal tariff which came into effect on the 13th instant will be only a temporary measure, and that ere long fresh duties will be promulgated, having for their object the complete expulsion of English coal and iron from the Russian market. In the article of pig iron the abolition of the exemption practice is a great gain for the native iron-masters, and one would have thought that it would have stimulated them to increased activity. Not only, however, is Russia badly supplied by the native iron-masters to day, but she is even more dependent upon foreign support this January than she was the corresponding period of last year, the demand for iron having increased in the interval, while the output of the country has diminished. The activity of Americans and others, of which so much was said in the summer, appears to have completely died away.

"For the moment M. Abaza is busy reorganizing his department. When he has got the treasury in order he may be expected to take in hand the tariff, and afterwards pass on to the numerous projects for developing the railways of Russia. Any development of these must be of interest to England, as it means possible orders for steel rails and rolling stock. For 1881 several lines are projected.

"Krupp is now staying at St. Petersburg, to arrange for a contract for three milion roubles ($2,000,000) for the construction of cannon for Russia. On this point there has been a furious discussion in the papers, many affirming that the order ought to be given to native firms. To establish the Abouchoff Steel Works at St. Petersburg, a million was sunk some years ago, and orders for guns have been repeatedly given to the concern since. But the guns cost twice or thrice the amount paid to Krupp, and are very considerably inferior to his. Hence Russia, in spite of her desires, must continue to give her contracts to Krupp for the present. Krupp's visit to St. Petersburg has been taken advantage of by several Finnish railways to give him large orders for steel rails.

"The Minister of State Domains has just reported that in the 46 leading provinces of Russia there are 203 works for manufacturing agricultural implements. These employ 6,642 workmen, and turn out machines to the value of 4,500,000 roubles ($3,000,000) a year. In 1875 the import of foreign agricultural machinery was valued at 3,157,000 roubles. In 1880 it had fallen to 1,628,000 roubles."

NEW TREATMENT FOR SCARLET FEVER.—A very interesting experiment was tried by Dr. Ashby, medical officer of health for Grantham (England), in dealing with an outbreak of scarlet fever in that town during the summer of 1878, by means of isolating the patients in tents. He prevailed upon the local authorities to erect a tent hospital on the outskirts of the town, and induced parents to send their sick there. The result was most successful. Parents availed themselves of the tents largely (their early prejudice against them being readily overcome), the patients did remarkably well, and the spread of the disease was unquestionably much curtailed. Altogether the example set was one which deserves to be copied, and shows with what readiness the spreading diseases of children may be dealt with by the exercise of energy and forethought.—*Lancet.*

CELLULOID IN A NEW ROLE.—It is reported that celluloid has of late been successfully applied in the form of a veneer in the ornamentation of furniture. It is used in this way in imitation of malachite, or colored marbles, for table tops, and for panels in imitating tortoise-shell and other costly materials.