

Overland Arctic Expedition Returned.

The Montreal *Herald* gives an account of the recent return of the overland expedition fitted out in the latter part of 1854 by the Hudson Bay Co., to ascertain, if possible, some information relative to the fate of Sir John Franklin. The party was composed of some hardy trappers and Indians. They found many things belonging to the Franklin Expedition, and the place where it is supposed the last of them died from starvation, but no papers or books. The place where they were found was Point Aigle, opposite Montreal Island, a dreary, desolate place in the Arctic Regions, to which they were directed by Dr. Rae, who had obtained information from the Esquimaux that a party of white men had perished there in 1850. There can be no doubt, we think, but that Franklin and all his party perished, as it is twelve years since they left England, and ten since any account of them was received. It would afford satisfaction to the living, however, if something else belonging to them were discovered, than tin provision boxes, pieces of iron, &c., which no doubt belonged to Franklin's party, but do not satisfactorily reveal their fate. Books, papers, or the remains of their bodies, would be incontestible proof,—but none of the expeditions fitted out have returned with such memorials. A mystery still envelopes their fate.

The Arctic Regions.

It is impossible, from anything we are yet in possession of, to form an opinion as to what exists beyond the parallel of 82° 30' north, or beyond that of eighty degrees of latitude south.

The north magnetic pole has been discovered and examined—it is elevated but a little above tide, in lat. about 70° N., long. about 98° W. The magnetic pole of the Antarctic has not been reached, for it is walled in by ice and is situated in lofty mountains not yet explored; its position, however, is further from the equator than the north magnetic pole, and is in the vicinity of two lofty mountains, in which volcanoes are in an active state at an elevation of more than ten thousand feet above the sea.

The atmosphere of the Arctic is unlike our atmosphere. Lieut. Parry when on Melville Island in the winter of 1819–20, lat. about 75° N., long. about 111° W., says: "We had frequent occasion in our walks on shore, to mark the deception which takes place in estimating the distance and magnitude of objects when viewed over an unvaried surface of snow. It was not uncommon for us to direct our steps towards what was taken to be a large mass of stone at the distance of half a mile, but which we were able to take up in our hand after one minute's walk. This was more particularly the case when ascending the brow of a hill, nor did we find that the deception became less on account of the frequency with which we experienced its effects."

Interesting Account of the Great Polar Sea Discovered by Dr. Kane.

At a late meeting of the American Geographical Society, in this city. The interest of the proceedings was enhanced by the presence of Dr. Kane, the Arctic explorer, who gave an outline of some of his discoveries.—His remarks commenced by allusions to the mountain ranges in North Greenland:—

"After leaving New York, we made the coast of Greenland at its most southern point. We then continued on our voyage to Upernivik, and then to Smith Sound. On reaching Smith Sound we expected to have an open sea. The reverse was the case. A boat was launched and landed on the nearest great island, to lay a store of provisions to fall back upon, in case of a retreat, and then we pushed on our ship further to the northward. From this point our vessel was forced up to our winter harbor. When we reached this winter harbor the difficulties of going further north were so great that my officers addressed me a letter requesting a return to the south. This was not in accordance with my instructions, and I declined to accede to the request. At this point we have a constant glacier stretching out. With great difficulty here we were enabled to travel by sledges, and in this way parties set out for exploration, and in this way we reached the latitude of 80 degs.—the most northern point which had yet been reached. At this point our parties were compelled to re-

turn, and did so with the intention of renewing the exploration when the winter was over. In our winter harbor we established an observatory, by means of a theodolite and a common pocket glass. We established a magnetic observatory and meteorological observatory, the records of which are now deposited in the office of the Coast Survey. Our alcoholic thermometers we found to be utterly unavailable, and the only way we could get at the temperature was by a comparison of instruments, and this with great care. Our lowest recorded temperature was between 70 and 80 degrees below zero. At this temperature chloroform was almost solid.

This was the temperature in which we made our explorations. Our first party was unfortunate. They set out in March. Storms overtook them, and they finally got back to the vessel, where three of the number underwent amputation, and two died. It was three weeks before we were able to start out again, and when we did so, we found that the coast of Greenland did not, at this point, run in a course represented on the maps, but it presented a coast running almost east and west. Here we discovered a new land, which we named Washington. This land was flanked by a range of lofty mountains, 2,800 feet in height, and these ranges stretched out, apparently, far to the north. The latter portion of this travel was the most interesting. We found before us a field of ice, and over this we found an open water, which has since been called the open Polar Sea. This water appeared iceless. It was apparently without ice. Not a particle of ice lined its shores. At an altitude of 300 feet, as far as we could see, an open sea met our eye. A gale of long duration swept over this water, but brought no drift along with it. All animal life resorted to these waters. The seal was shot upon its shores, and the duck resorted to it from every direction. We could not tell the exact temperature of this water, but it was warmer than any other found below.

A British Exploring Ship Found Abandoned in the Arctic Seas.

In 1852, the British Government dispatched a fleet of five vessels to the Arctic regions, for the purpose of searching out Sir John Franklin. The fleet consisted of the *Pioneer*, *Resolute*, *Intrepid*, *Assistance*, and *Investigator*. The progress of the ships was very unfavorable. They became frozen up in the ice almost before the searching ground had been reached, and after remaining in that condition for about a year, government sent out two other vessels, with orders for the abandonment of the interlocked ships, and the return home of the officers and men. This was accordingly done on the 15th of May, 1853.

On the 10th of September, 1855, the American whaling bark *George Henry*, Capt. Buddington, of New London, Conn., while cruising in Davis Straits, lat. 67, 20 miles from land, espied a ship which had the appearance of being abandoned. On boarding her she proved to be the British searching ship *Resolute*, late commanded by Capt. Kellett, R. N. She was about half full of water, but this was soon pumped out. Says the *New York Herald*:—"The appearance of things on board, as represented by Capt. Buddington, was doleful in the extreme. Everything of a movable nature seemed to be out of its place, and was in a damaged condition, from immersion in the water. The cabin was strewn with books, clothing, preserved meats, &c., interspersed here and there with lumps of ice. There was one thing, however, which struck Capt. B. as being very remarkable, and this was the presence of ice for several feet in thickness on the larboard side, while there was not a particle on the starboard. The only argument that can be presented to explain this curious freak of the element is, that the *Resolute*, lying with her head to the eastward for probably more than a month, received the direct rays of the sun on the starboard quarter, and nowhere else, of the ship, while the other side, being without this heat, became as solidified with ice as though the sun never shone on it.

In the course of the search a little coal was discovered in the hold, but the quantity was very small, and entirely inadequate to supply the vessel more than a week. Of provisions, there was enough, perhaps, to last a crew of seventy-five men (the number originally car-

ried by the *Resolute*) for nine months. The salt meats were the only articles that were at all in a state of preservation. Everything had gone to decay. Even the ship's sails, found between decks, were so rotten that the sailors could thrust their fingers through them like so much brown paper. The lower hold was found to contain the library of one of the officers, valued at over a thousand dollars. The books were entirely valueless when discovered by Captain Buddington, and subsequently thrown overboard as worthless rubbish."

Finding the vessel to be staunch and seaworthy in every respect, Capt. Buddington resolved to bring her to the United States as a prize. He accordingly transferred himself and a small crew, with the necessary accoutrements, to her decks, and set sail for home. She arrived at New London on the 24th of December last, his consort, the *George Henry*, having reached that port a day or two previous.

The *Resolute* now lies anchored in the stream off the town of New London, and is the chief object of attraction in that neighborhood. She is about 600 tons burden, and is built in the strongest manner. Her bows are sheathed with iron, while her entire frame is coppered, and copper fastened and bolted.

It is the opinion of Capt. Buddington, that if the crew of the *Resolute* had remained on board of her with the hope of eventually releasing her, they could not have effected the task any sooner than it was performed by the natural causes which eventually freed her, and hence, he thinks that Sir Edward Belcher, who had command of the squadron, acted perfectly right in abandoning the vessels, under the circumstances."

Among the articles found on board of the *Resolute*, was a pair of Capt. Kellett's epaulettes, which have been forwarded to him.—The *New York Times* remarks, the finding of the ship and her safe voyage to New London, adds another romantic episode to the history of Arctic navigation. By a remarkable coincidence, the intelligence of the discovery of the remains of Sir John Franklin, and the recovery of the *Resolute*, which had been sent out to his rescue, both reached this city in the same hour, and were carried to England by the same steamer; the *Resolute* sailed from London, and was brought back to New London.

Drouth and Vegetation.

The Annual Report of the Massachusetts Board of Agriculture devotes considerable space to discussion of the drouth of 1854: "There can be no doubt," it is remarked, "that the destruction of our forest has much increased the severity of our summer drouth. Forests have a tendency, by protecting the earth from the scorching rays of the sun, to prevent a large amount of evaporation, and thus lower the temperature of the soil. When standing upon elevated grounds, the sources of rivers are found in them, and they determine the direction of the prevailing winds and rains. The winds which blow over forests become impregnated with moisture, which they spread over the country, giving freshness and life to all vegetable creation. But where there are no forests, the clouds sweep over the country without finding any obstacle to arrest their progress and resolve them into rain. The streams become dried up, the soil is heated, and the winds, passing over large extents of country parched by the sun, become hot, and bear with them heat and sterility." The report recommends, among the most practicable methods of preventing suffering by drouth, that irrigation be introduced more generally among our farmers, and that they take more pains to reclaim and cultivate low lands, which at the same time that they retain moisture better than others, will not fail to pay a very large profit to the cultivator, year after year.

The recommendation to pursue the practice of irrigation is good advice for dry seasons, but the theory respecting the absence of forests causing the drouth of 1854, should also have caused one in 1855, which, as we all know, was exceedingly wet.

Nasmyth's Process of Puddling Iron.

In Vol. 10 *SCIENTIFIC AMERICAN*, we noticed a patent which had been granted in England to Nasmyth, the inventor of the steam hammer

for refining iron by injecting jets of steam into it when in a molten state, and we stated that the principle of the invention was not new, but had been applied by one of our inventors before Nasmyth. Nasmyth applied for an American patent through Merrick & Sons, of Philadelphia, and was rejected. Our American inventor was more fortunate, he obtained his patent for the process as a mechanical one. The following letter in the last number of the *Journal* of the Franklin Institute will be of great interest to all our iron manufacturers:—

"The announcement made in the September number of the *Journal*, page 209, under the above caption, that we were assignees of the patent for the United States, was an error which has arisen probably from the fact that we had, in Mr. Nasmyth's name, applied for such a patent in this country.

Mr. Nasmyth's claim has, however, been rejected by the Patent Office, on the ground that it conflicts with the patent issued to Guest & Evans, by the English Patent Office, in 1840, and described in the *London Repertory of Patent Inventions*, Vol. 16, page 341, by reference to which it will be perceived that the principle both possess, viz., the application of steam beneath the surface of the molten metal, is the same, although in our judgment, Mr. Nasmyth's application is far more simple, and less likely to derangement than the former, and perhaps these advantages may be all that is required to bring the process into general use. Be that as it may, we take occasion to say that Mr. N.'s accounts of his success in England in producing by this method a cheaper and better iron, are such as to warrant us in expressing the hope that some of the leading iron firms in this country may take it up.

MERRICK & SONS.

Philadelphia, Nov. 15, 1855."

Cotton Gins.

MESSRS. EDITORS.—A recent number of the *SCIENTIFIC AMERICAN*, page 49, in the article "Saw Cotton Gin," your correspondent has fallen into some errors, I think. I have been engaged for the last twenty-five years in manufacturing the saw gin, and in all that time have watched closely the operation of my own machines, and others, on the fiber of cotton with the view of improvement, wherever it could be done. I make this statement for those who may differ with me in regard to the operation of the gin. It is hardly possible to overrate the importance of this machine. The Saw Gin, as it came from the hand of Whitney, admitted of but few improvements, and though many have been attempted, they have mainly aimed at (and accomplished) the making a fairer article of cotton, but always at the expense of the fiber. In proof of this there is in Georgia a gin which was made in Whitney's time, and under his patent,—it has iron saws, and very coarse teeth, but the cotton ginned by it brings from one to two cents per lb. more than from the best improved gins.

Your correspondent, Mr. Du Bois, is right in saying that no two saws catch the same fiber, but I cannot think he has investigated closely when he decides that the saws never break the cotton. Let Mr. Du Bois examine samples under a magnifying glass, from different gins, and he will change his views; let him examine carefully the fiber or the seed, and he will find but a very little difference in the length, and none quiteshort. But the best proof that the saw cuts cotton, is Fultz's improved feeder, which he says separates the long from the short cotton, thus making two qualities, the long being delivered at the end where it enters, and the short at the other, showing conclusively that the cotton which is first taken from the seed is but little cut, while that which runs the gauntlet of fifty saws, comes out a low quality. I have no hesitation in saying that there is no machine which approaches to a saw that can clean the Upland cotton without injury to the fiber, to say nothing of the Sea Island cotton, which has a much finer and more tender fiber; indeed, the only perfect operation in ginning cotton is the roller principle, therefore, whoever will invent a roller gin that can compete in speed with the saw gin, will increase the value of the Upland crop ten per cent., or ten millions of dollars annually, to say nothing of the advantage to the inventor. H. CLARK.

New Port, Fla., Dec. 4th, 1855.