TO THE RESCUE OF LIEUT. GREELY.

For several weeks past the Brooklyn Navy Yard has been the scene of unusual and bustling activity, attracting visitors from all parts of the country. This kind interest centered in three staunch ships which will have started, ere this reaches our readers, on a long and perilous journey to the Arctic regions. Fitted with all the care and skill of modern marine engineering, provided with every known device for the comfort and safety of their crews, and guided by men who have voluntarily offered their services and risked their lives, these vessels are sent to the rescue of a small band of men who have been imprisoned in the ice for nearly three long years.

The direct result of a suggestion of the late Lieut. Karl Weyprecht was the establishment of a number of circumpolar stations for the purpose of scientific observation and practical exploration. At an International Polar Conference held in 1879 at Hamburg, the proposition was discussed dition. She is of 548 tons burden, heavily timbered and in all its bearings, and the conclusion reached was that the best results would accrue from the placing of such stations. At a meeting held in St. Petersburg in 1881, the following stations were resolved upon:

The United States in Lady Franklin Bay, in Smith's Sound, and also at Point Barrow; Denmark at Godthaab; Germany in Cumberland Sound, on the western side of Davis Strait; England at Fort Rae, in the heart of the Hudson's mouth of the Lena and at Moller's Bay, Nova Zembla; Hol-Island, famous for its fog and ice. The Finnish Landdag on which she will be employed. At the time of writing, the equipped a meteorological station at Sodankyla; a branch | detail for the Alert had not been completed.

station was also established in Labrador. France selected a station near Cape Horn, and Germany also ventured into the Antartic regions by sending a party to one of the islands of South Georgia, in 54 degrees south latitude and about 1.100 miles to the eastward of Cape Horn. Those in charge of the observatories at Melbourne and Cape Town were instructed to make a series of observations in connection with the French and German expeditions. Fifteen expeditions were thus arranged for to carry out the plans of the Commission. Arrangements were also made for taking magnetic and meteorological observations at several permanent observatories on the first and fifteenth of each month. The accompanying map shows the stations established in the Arctic circle. With the exception of the Danish, stations were established in accordance with the plans.

Reports from the Finnish station at Sodankyla were rich in scientific material. Experiments on a gigantic scale were made with the aurora borealis, and by an arrangement of batteries and wires along the face and up to the summit of a hill 1,000 feet high an artificial aurora was produced which differed in neither appearance nor spectroscopic analysis from the natural article. A photograph could not be obtained even with the most sensitive dry plate. The Austrian polar expedition, which returned last August from Jan Mayen Land after an absence of 16 months, was quite successful; the collection was rich, photographs numerous, and

observations perfect. The English statiou at Fort Rae did results have been obtained from the Swedish station at Spitzbergen. The operations of the Danish expedition were delayed a year, as the vessel was caught in the ice.

The station at Point Barrow, on the northern coast of Alaska, was in command of Lieut. P. H. Rae, who, together with his party, spent two years in scientific work. Having completed their building, the meteorological instruments were placed, and hourly observations were begun, The season being much advanced, the members of the expedition devoted much of their time to collecting botanical and zoological specimens. The magnetic work was very made for the purpose. They are about 10 feet long, 1 foot our temperate zone they are of long duration. Apart from trying during the winter, as delicate instruments had to be high, and 2½ feet wide. Quantities of clothing and provi- eclipses the rings lighten for Saturn the short summer nights, manipulated and read in temperatures as low as 45 degrees below zero. Over 90,000 readings were taken and recorded 2,000 gun cotton cartridges, which will be used to open a from December 1, 1881, to August 1, 1882. Meteorological harbor for the ship in the ice if it should become necessary. work was done at the same time. On the 7th of July, 1881, Lieut. A. W. Greely, with twenty-three companions, left St. Johns, N. F., bound for his station on Lady Franklin Bay. The Proteus left the party on the 18th of the following August, since which time nothing definite has been heard from them. Lieut. Greely's orders were to make scientific observations, and in addition to explore as large an area of the polar region as he should find practicable. It was arranged that in the fall of 1883 a relief ship would be sent for him, and, consequently, two ships, the Proteus and Yantic, were dispatched. But the advance ship-Proteus-was nipped in the ice and crushed, her officers and crew narrowly escaping death.

The Thetis, the flagship of the expedition, was a Dundee steam whaler, is of great strength and admirably adapted for the undertaking. She is of about 600 tons burden, 181 feet long, 29 feet beam, depth of hold 21 feet. Her engines are of 98 nominal horse power, and under favorable conditions can steam 6 or 8 knots an hour. Since her arrival new decks have been put in, and extra diagonal and athwart ship braces have been added. The detail of officers for the Thetis is as follows:

Commander W. S. Schley, commander; Lieutenant Uriel Sebree, executive; Lieutenant E. H. Taunt, navigator; Lieutenant O. C. Lemly, Ensign C. H. Harlow, Passed Assistant Surgeon E. H. Green, and Chief Engineer George W. Melville.

The steam sealer Bear was built at Dundee some nine years ago. A year since she was furnished with a new steel boiler, and her engines, of 110 horse power, are in good constrongly bolted.

The detail for the Bear is as follows: Lieutenant W. H. Emory, commander; Lieutenant J. H. Crosby, executive; Lieutenant John R. Colwell, navigator; Lieutenant N. R. Usher, Ensign L. K. Reynolds; Passed Assistant Surgeon H. E. Ames, and Chief Engineer John Lowe.

The Alert, the gift of the English Government, gained fame as the advance ship of the Nares expedition of 1875. Bay territory, near the Great Slave Lake; Russia at the She was built in the Pembroke dock yard in 1856. She is a double skin wooden vessel of 1,270 tons displacement and land at Dickson's Havn; Norway at Bosekop, in the Alten 881 horse power. She is classed as one of the strongest ves-Fjord; Sweden at Spitzbergen; Austria at Jan Mayen sels afloat, and is therefore well suited for the arduous task

think of certain mottled or dusky stripes concentric with the rings, which stripes, appearing to indicate that the ring where they occur is semi-transparent, also are not permanent? Then, again, what are we to think of the growth within the last seventy years of the transparent dark ring, which does not, as even air would, refract the image of that which is seen through it, and that is becoming more opaque every year? Then, again, how is it that the immense width of the rings has been steadily increasing by the approach of their inner edge to the body of the planet? The bright ring once twenty-three thousand miles wide was five thousand miles wider in Herschel's time, and has now a width of twenty-eight thousand three hundred on a surface of more than twelve thousand millions of square miles, while the thickness is only a hundred miles or less. In 1857 Mr. J. Clerk Maxwell obtained the Adams prize of the University of Cambridge for an essay upon Saturn's rings, which showed that if they were solid there would be necessary to stability an appearance altogether different from that of the actual system. But if not solid are they fluid, are they a great isolated ocean poised in the Saturnian mid air? If there were such an ocean, it is shown that it would be exposed to influences forming waves that would be broken up into fluid satellites.

But possibly the rings are formed of flights of disconnected satellites, so small and so closely packed that, at the immense distance to which Saturn is removed, they appear to form a continuous mass, while the dark inner mass may have been recently formed of satellites drawn by disturbing attractions or collisions out of the bright outer ring, and so thinly scattered that they give to us only a sense of darkness without obscuring, and of course without refracting,

the surface before which they spin. This is, in our guide's opinion, the true solution of the problem, and to the bulging of Saturn's equator, which determines the line of superior attraction, he ascribes the thinness of the system of satellites in which each is compelled to travel near the plane of the great planet's equator.

Whatever be the truth about these vast provisions for the wants of Saturn, surely there must be living inhabitants there to whose needs they are wisely adapted. Travel among the other planets would have its inconveniences to us of the earth. Light walking as it might be across the fields of ether, we should have half our weight given to us again in Mars or Mercury, while in Jupiter our weight would be doubled, and we should drag our limbs with pain. In Saturn, owing to the compression of the vast, light globe and its rapid rotation, a man who weighs twelve stone at the equator weighs fourteen stone at the pole. Though vast in size, the density of the planet is small, for which reason we should not find ourselves very much heavier by change of ground from earth to Saturn. We should be cold, for Saturn gets only a ninetieth part of the earth's allowance of light and heat. But then there is no lack of blanket in the house of Saturn, for there is a thick atmosphere to keep the warmth in the old gentleman's body and to lengthen the Saturnian twilights. As for the abatement of light, we know how much lightyet remains to us when less than a ninetieth part of the sun escapes eclipse. We see in its bright-

screw from the water in case of damage from ice. The condenser for making fresh water for drinking purposes and for supplying the boilers is a pipe running along the bottom of the hoat parallel with the keel. Each of the vessels will have five small boats, two 28 feet long and three 24 feet long. Side keels are bolted under the bilges of each boat, to serve as runners when the boats have to be transported over the

CIRCUMPOLAR STATIONS.

The steam launches, one for each vessel, are provided with ness, as a star, though a pale one, the reflection of the sungood work, especially in spectroscopic observations. Good a combination joint on the screw shaft in order to raise the shine Saturn gets, which, if but a ninetieth part of our share, yet leaves the sun of Saturn able to give five hundred and sixty times more light than our own brightest moonshine. And then what long summers! The day in Saturn is only ten and a half hours long, so that the nights are short, and there are twenty-four thousand six hundred and eighteen and a half of its own days to the Saturnian year. But the long winters! And the Saturnian winter has its gloom inice. The sleds are double enders, and, before loading, either creased by eclipses of the sun's light by the rings. At Saside will serve as the top side. They are made of bent turn's equator these eclipses occur near the equinoxes and hickory, iron shod, and are probably the best that can be last but a little while, but in the regions corresponding to



These events, so briefly enumerated, have led to the fitting out of the present relief expedition.

sions have been stored on board. Each vessel will carry

The expedition is commanded by Commander W. S. Schley. It is proposed to run all reasonable risks in order them. Its progress will be watched with absorbing interest by the civilized world, and its success devoutly hoped for.

----Saturn.

cut off by the attraction of the planet as it passed, and compelled to circle round it thenceforth and for ever. Buffon thought the ring was the equatorial region of the planet. which had been thrown off and left revolving while the globe to which it had belonged contracted to its present size. Other theories also went upon the assumption that the rings are solid. But if they are solid, how is it that they exhibit and it is now proposed to make it 200 feet wide and 18 to 21 traces of varying division and reunion, and what are we to feet deep at the mouth.

and lie, perhaps, as a halo under the sun during the short winter days.-Knowledge.

A Great Improvement for Little Money.

The proposed further dredging of Newtown Creek, L. I., to save the explorers or to ascertain what has become of is one of those "river and harbor improvements" which cannot cost more than a small sum at the furthest, and will be of great benefit to a large population, an immense industry, and extended commercial interests. Newtown Creek is a sluggish channel on the eastern outskirts of Brooklyn, Maupertuis thought that Saturn's ring was a comet's tail entering the East River opposite the central part of New York city, and on its banks are many large manufacturing and commercial establishments, the capital invested in the various industries probably exceeding \$20,000,000. The trade in refined oils centering in that locality amounts to \$10,000,000 dollars annually. Slight amounts have been expended on widening and deepening the channel since 1880,