Chinese Cheap Labor.

American medical missionaries are now very popular in China. They are everywhere welcomed, more especially because they offer both medical advice and medicine gratis, prefaced with religious exercises. The Chinese appear to appreciate this kind of practical religion. In a recent letter to the *Missionary Herald*, Dr. Chapin tells of his missionary successes in the vicinity of Pang Chuang, and says:

"On this trip I learned for the first time that there are in this part of China a number of 'counterfeit' foreigners. I was myself taken to be one of that class, because of an ability to make myself understood in Chinese. It seems that one or more enterprising Celestials have gone into the work of dispensing medicines after the manner of the American physician. Usually two or three men go together. One of these dresses in foreign costume and talks a gibberish which is not understood by the natives, and so passes for a foreign language. In imitation of American physicians, all medicine is given away, but, unlike that fraternity, the bogus representative of America is quite willing to receive contributions of grain to feed the animal which helps convey him from village to village. In consequence grain pours in upon him by the quantity. This is disposed of by a confederate at the nearest fair, and then Ah Sin departs for 'fresh fields and pastures new.'"

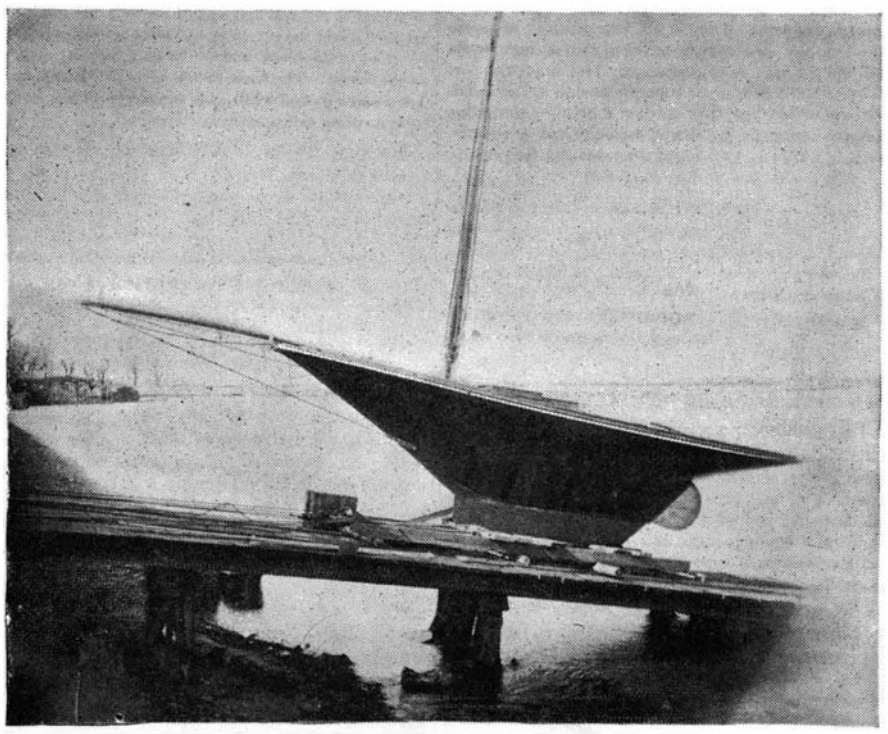
The High Atmosphere.

Beyond 29,000 feet above sea level, the height reached by Glaisher, in 1862, man has never been able to navigate the air. Various problems concerning the region farther away—such as the temperature, the pressure, the quantity of moisture, the composition of the air, etc.—have attracted the attention of physicists, and have at last led to the experiments of M. Hermite, who, during the last few months, has been sending up pilot balloons, carrying registering apparatus. These balloons are very light, with a capacity of about 100 to 200 cubic feet. Falling at distances from Paris ranging up to 200 miles, the balloons have nearly all been returned by their finders, as requested on a card attached to each, and one has brought down records from a height of 30,000 feet. The instruments used are very light and simple. With larger balloons and systematic exploration, it is hoped that the secrets of the air up to at least 40,000 feet may be made as familiar to us as those of the deepest and darkest depths of the sea are gradually becoming.

THE FIN CUTTER LENI LENEPE.

The changes and improvements which the ingenuity of modern man is constantly producing are well illustrated in the new type of sailing boats which are now rapidly coming into use. We here give a photographic portrait of the Leni Lenepe, a fin cutter, built by Clay & Torbensen, of Gloucester City, N. J., who rank among our most progressive and scientific architects, not only in the line of sailing yachts, but steam and sail craft of every description. Compared with the clumsy, round-bottomed boats of our forefathers, the new style of sailing craft here shown presents an odd and strange appearance.

The Leni Lenepe, probably, in point of construction, is the lightest fin keel cutter ever built in this country and is also one of the fastest of her class. Dimensions are 29 feet on deck and 16 feet 10 inches on L. W. L., extreme beam 6 feet 4 inches. The boat is a marvel of lightness and strength; planking is of ⅝ inch white cedar, ribs of white oak, straight grained and steam bent, 1¼ inch by 1½ inch, spaced 10 inches on centers; floor timbers are of iron, keel and deadwoods of white oak. Fin keel weighs 2,000 pounds and is bolted through keel with composition bolts. All rivets and fastenings are of brass and copper, and the method of planking is such that no calking is required; no seams are visible. The hull is finished as smooth as glass. Hull, spars and rigging weigh only 1,750 pounds. We are informed this yacht has outsailed and outpointed all boats of her class with which she has competed.



THE FIN CUTTER LENI LENEPE.

Foreign Honors to an American Architect.

Architect Richard M. Hunt, of this city, has just received at the Royal Institute of British Architects, the Queen's gold medal. Mr. Hunt is the first American on whom this honor has been bestowed. It is understood that Mr. Hunt received the medal on account of his excellent work at the Chicago Fair. Mr. Hunt has spent considerable time abroad, and much of the refined taste exhibited in his various works can be attributed to his cosmopolitan experiences.

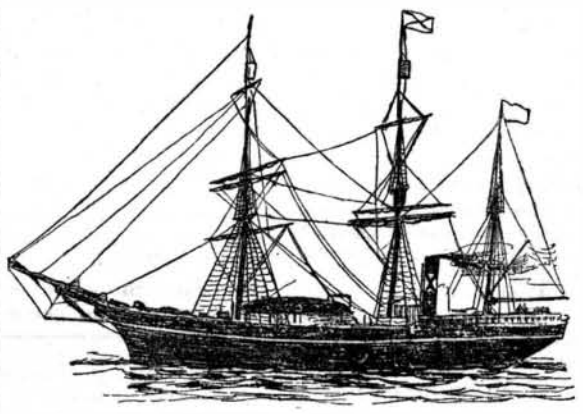
THE PEARY ARCTIC EXPEDITION.

The first chapter in the history of Lieut. Peary's new Arctic expedition was opened on the 2d of July, when the ship that is to bear him and his party to the polar regions took her departure from New York. The vessel, known as the Falcon, is a strongly built sealing steamer, belonging to St. Johns, N. F., and has been specially chartered for this service.

We give a small portrait of the ship.

The Falcon will touch at Boston, Portland—which is Lieut. Peary's old home—and at St. Johns, Newfoundland, where the crew of the vessel belongs. From St. Johns the vessel will sail direct to the Arctic seas, making the first landing at Inglefield Gulf, where Lieut. Peary will establish his station.

The Falcon is bark rigged, 162 feet long, 26 feet beam, draws 17 feet, is 311 tons burden, and has twin screws. She is strong and capable of ramming the ice. On deck she carries a steam launch and whale boats.



PEARY'S SHIP, THE FALCON.

Besides Esquimaux dogs, eight Rocky Mountain burros are carried. Lieut. Peary will teach the burros to walk on snow shoes, and they will be taken on the inland trip to carry the provisions; when their load is used up, they will be killed for food for the dogs. A cote of carrier pigeons is also taken along. Among the curiosities we saw in the cabin was Lieut. Peary's sleeping bag, which is made of the winter coat of the reindeer. The weight is 10¼ pounds, hair side inward. Lieut. Peary says he has slept in these bags in perfect comfort when the thermometer registered the very low temperature of 45° below zero F. Packed away in the hold along with the three years' provisions is the house which will be erected in Greenland and which will shelter the party for two winters. The following particulars in regard to the house were furnished the SCIENTIFIC AMERICAN by Lieut. Peary. The house will be 33 ×14 feet on the ground plan, and 7½ feet high, and will be divided into compartments. The walls of the house are divided as follows: First, an inner lining of red felt, then an air space of one inch; a sheathing of matched boards comes next, then an air space of one foot, then a layer of tarred paper; another sheathing of matched boards is followed by a layer of tarred paper; a four foot corridor comes next, and the boxes of supplies form the outer wall. The house will be heated by steam and lighted by electricity. The launch engine and boiler will be taken out of the boat when navigation closes, and will furnish steam for heating and for running the dynamo. Coal oil will be burned. Lieut. Peary's house certainly has all the modern improvements.

The Falcon will be sent back after landing the cargo and is under contract to return in the summer of 1895.

The expedition will now consist of fourteen members The list is: Lieut. and Mrs. Peary, Mrs. Cross, of Brooklyn (Mrs. Peary's maid); S. G. Entrikin, West Chester, Penn.; James W. Davidson, Austin, Minn.; E. R. Baldwin, Oswego, Kan., meteorologist; Dr. E. Vincent, F. W. Stokes, Philadelphia, artist; W. J. Swain, Indianapolis, stenographer; Hugh Lee, Meriden, Conn.; G. H. Carr, Chicago; Evraud Astrup, the Norwegian geologist; George Clarke, Brookline, Mass.; and Matthew Hanson, a colored valet.

On the east side of Inglefield Gulf, Greenland, in about latitude 78° 45′ north, 35 miles somewhat north of east of Redcliffe, Lieut. Peary has selected the site of what may be termed the headquarters of his Arctic expedition. It is 400 miles north of the most northern station now occupied in Greenland. There will be reconstructed the winter house above described, and thence Lieut. Peary will make exploring advances, and perhaps approach the north pole.

Ivorytypes.

BY GEO. G. ROCKWOOD.

Recently, in overhauling my establishment, I unearthed some ivorytypes which were made fully twenty or twenty-five years ago. They were in such a fine state of preservation, and make such beautiful and permanent pictures, I am about to revive them.

As many of the fraternity don't know how to make these pictures, I send you a description of the methods used. I think they will be a good thing to reintroduce. Many fine styles of pictures have had their "day," and have been dropped for some novelty—often, I think, unwisely. The ivorytype is one of the illustrations of this tendency. It is no step backward to make them.

Process.—First.—Make a print on plain paper, strong and brilliant; now edge a common clean glass to the width of a quarter of an inch with glue or starch; dampen your print a little and put it on the glass, picture side up. When dry, the print will be stretched nicely on the sheet of glass. The glass should be a little larger than the desired picture, for the reason that when colored and completed it is cut off from the glass. Having your print in this condition, stretched on the glass, it is to be very brilliantly colored in water colors. Altogether the picture presents a dark, strong, brilliant effect. Lay this, glass and picture, upon a flat slab of soapstone—of course, the picture side up—and gradually heat the soapstone on a gas or oil stove until the plate is hot enough to melt wax. Now break a cake of white wax (not paraffine) in two, and rub the surface of the picture with the wax, which gradually melts and saturates the picture. Your picture at this stage looks very much like a "gone goose." Now cut it very carefully at the edge with a sharp knife and lift the picture off from the glass; you will then have a translucent picture. Now heat a sheet of white *plate* glass in the same manner as you did the other, and when hot lay your wax, *face down*, upon the glass; it will soon melt and adhere to the glass. With a piece of wax (the sharp edge of the wax used as a squeegee) rub out the air bubbles. So soon as this is done, pick up your glass and let it cool. Now put drops of wax around on the picture to keep the cardboard from absolute contact with it, and put a piece of cardboard behind it, and you have the prettiest picture on earth.—*Anthony's Photo. Bulletin.*

Malaria.

Dr. H. M. Clark has printed a memoir of his experience with malaria during a residence of nine years in India. How formidable a barrier to civilization malaria is may be inferred from the fact that to this disease alone is attributable not less than half the deaths throughout the world. It is not confined to rich, low-lying soils, but is found even in sandy deserts devoid of any vegetation. Once it finds a lodgment in the system, it cannot be wholly eradicated, and it is beyond the reach of acclimatization. Only two races are proof against it, the negroes of the grain coast of Western Africa and the Taurus of Northern India. Modern medicine and sanitation are equally powerless in dealing with it.

In some places in India, where the cities and towns are built in defiance of all the rules of health, malaria never is known. As preventives, the doctor suggests the turning of swamp lands into lakes, and the planting of such trees as will retain water and shade the soil. For such purposes the eucalyptus is, therefore, useless; but the plantain and banana should answer well.

THE excavation at Hell Gate reef was attended by 21,000 soundings and 8,000 borings.