ARRIVAL OF DR. NANSEN.

Dr. Fridtjof Nansen, the Norwegian explorer, arrived in New York October 23, on the Lucania, and was met at Quarantine by the steamer Favorite, with the Nansen committee, composed of Scandinavians who live in New York, and members of the press. The distinguished explorer left the Lucania and came up to the city in the Favorite. Mr. Carl G. M. Woxen, consul for Norway and Sweden, made a speech in Norwegian welcoming the explorer to America, to which Dr. Nansen responded in the same tongue. Prof. Libbey, of Princeton, delivered a brief welcoming address and Dr. Nansen replied in English, which he spoke with apparent ease. A choral society sang Norwegian patriotic songs. The visitor was escorted to the Hotel Savoy, where he will stop during his visit to New York.

It is natural that Dr. Nansen should have been questioned as to whether Andrée was lost. The doctor said he did not think Andrée was lost, it being too early to assume this, as yet. As to his own plans, Dr. Nansen said he had none bearing on Arctic exploration. He said he had no idea of leading another expedition in search of the North Pole.

He said he did not expect to undertake the fixing of the northern boundary of Greenland, though his former captain, Sverdrup, was about to head an expedition for that purpose.

There was an enthusiastic reception for Dr. Nansen in the evening at Chickering Hall, given by the American Geographical Society. The hall was filled with people who rose to their feet and applauded the explorer as he came upon the platform. Lieut. Peary was present, as were also Sergt. Long, of the Greely expedition, and Capt. Brainerd. Dr. Nansen was introduced by Ex-Judge Daly, who then presented to him the Cullum Geographical Medal, which bore the inscription, "Awarded to Fridtjof Nansen for his voyage in the Fram and sledge journey on the ice floes to 86° 14′ north, 1893–1896." After Judge Daly's presentation speech, Dr. Nansen said he specially appreciated it, "because it is given me by a nation which has had so many great explorers." He concluded by professing his admiration for Lieut. Peary, and hoped he would reach the pole on his next expedition. Lieut. Peary and Capt. Brainerd also made brief addresses. Capt. Brainerd said: "The United States held the record for the furthest north for fourteen years. When I learned of Nansen carrying the Norwegian flag beyond the point reached by the stars and stripes it was something of a shock to me, but I was consoled by the thought that it was most fitting that the Norwegians,

DR. NANSEN'S TRIP TO AMERICA.

the descendants of the old Vikings, should hold the record."

On October 26 Dr. Nansen was a guest at a reception given at the Arlington Hotel, Washington, by the National Geographical Society. A large number of scientific men were present, including Gen. Greely and Commodore Melville. President McKinley received Dr. Nansen in the Blue Room of the White House on the same day. Our engraving represents Dr. Nansen as he appeared in London during his lecturing tour last winter.

Mercier's Process for Eliminating Hyposulphites.

Photographic negatives or prints, says M. Mercier, are usually subjected to a final treatment by a solution of hyposulphite of soda in order to dissolve the argentic salts, which treatment is termed the fixing, after which they are washed for some time in order to eliminate the hyposulphites. Such washing often consumes a considerable time, especially when the treatment with hyposulphite of soda has been incomplete, as the negatives and prints retain in such cases an argentic hyposulphite which is insoluble in water and withstands the action of ordinary washings.

My invention relates to means for avoiding these long and tedious washings by the use of solutions prepared with the aid of iodine or iodides, bromine or bromides, in the following manner, that is to say:

1. I may dissolve in water alkaline iodide such as iodide of potassium or iodide of sodium. I have discovered that alkaline iodides decompose argentic hyposulphites contained in the negatives or prints as they are withdrawn from the fixing bath, while thus facilitating the washing of the negatives and prints to a far higher degree than alkaline chlorides, such as common salt, which had been heretofore recommended as a dialytic eliminator of hyposulphites.

2. Instead of using alkaline iodides alone, I may use conjointly with them salts having an alkaline reaction, such as carbonate of soda, sulphite of soda, sodic phosphates and the like, or an alkali such as potash soda or ammonia. I have discovered that the elimination of the hyposulphites is thus more rapid than with the iodides alone. I often add to the above compounds a small quantity of common salt, which, however, is not indispensable. As a practical illustration of the above indications, I may use a solution containing about four grammes of iodide of potassium in one liter of water, or I may use the following:

Iodide of potassium	4 grammes.
Carbonate of soda	1 "
Common salt	30 "
Water	1 liter.

I may substitute for the above alkaline iodides alkaline bromides, but in such cases the elimination of the hyposulphites proceeds more slowly.

Instead of using alkaline iodides or bromides in the solutions above named, I may prepare them directly with bromide or iodine, which method was the first employed by me, the former process having been discovered subsequently after further experiments.

To prepare the latter solutions, I dissolve iodine or bromine in a suitable quantity of water with an alkaline salt, and by perference carbonate of soda. I may use by way of example the following formula:

Powdered iodine	3 grammes.
Carbonate of soda	30 "
Water	1 liter.

To facilitate the solution of the three grammes of iodine, I dissolve them previously in forty grains of alcohol or thereabout.

I thus obtain a yellow solution which cannot be used forthwith, for it would corrode the photographic image; it is therefore necessary to wait until it becomes spontaneously discolored, which requires from one to two days or longer, or it may be discolored by heating it for a few minutes, or by adding thereto a small quantity of ammonia; when the solution is discolored and cool, it can be utilized forthwith.

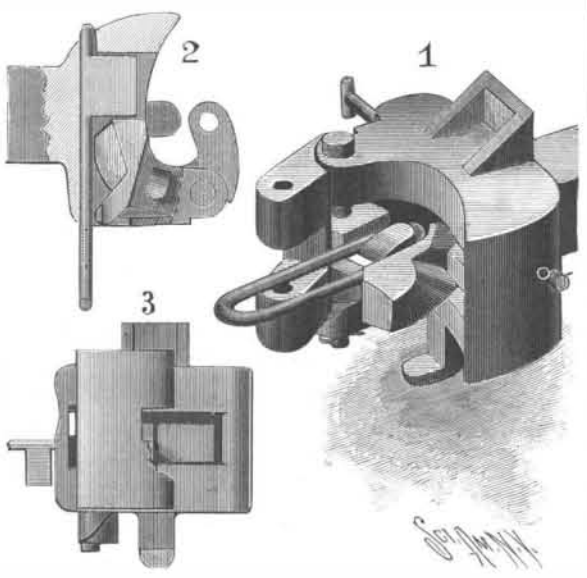
Colorless solutions of the kind above described may be obtained by adding a small quantity of sulphite of soda or by using the latter alone in lieu of the carbonate of soda, but it is preferable to use the carbonate alone, in order to prevent the introduction of sulphurous compounds in the eliminating means.

To use my solutions, the photographic negatives or prints impregnated with the hyposulphite of the fixing bath are slightly washed with water to remove the largest portion of its hyposulphites; they are then immersed in one of my solutions for a short time, varying from five minutes to one or two hours, according to requirements. The negatives or prints may be passed through several similar baths if required, the operation being completed by washing them for a few minutes in clean water.

The efficacy of my process can be readily demonstrated, particularly as regards negatives or prints which have not been left long enough in the fixing bath and are still impregnated with argentic hyposulphite, which is insoluble in water, and it is easy to ascertain when the negative or print contains no more hyposulphite by lightly touching a point of the white parts of the prints with a brush previously dipped in a ten per cent solution or thereabout of nitrate of silver, when if there be any hyposulphite left, there is formed a yellow spot at the said point.—The British Journal of Photography.

AN IMPROVED CAR COUPLING.

The accompanying illustration represents a car coupling possessing some novel features designed to afford increased efficiency in railway service, the coupling setting itself automatically ready for coupling when locked up to disconnect it from another coupling, and it being impossible for it to become uncoupled of itself, as it requires two movements to uncouple it. The invention forms the subject of a patent issued to Thomas H. Smith, of Bowie, Texas, and improvements for which application is pending. Fig. 2 is a partly sectional plan view of the coupling and Fig. 3 a front end elevation, Fig. 1 representing a coupling of this type adapted for coupling with cars provided with the old style of link and pin coupling. The drawhead is recessed from the front and has ears at one side, the tailpiece of a pivoted knuckle block swinging into the recess, and there being on the lower ear a depending lug having an incline forward of the knuckle pivot. The knuckle block also has a depending incline on the lower side of the coupling limb, adapted to traverse the incline on the drawhead and cause the knuckle block to swing open by its gravity. A transverse tripping shaft extends through an aperture in the side wall of the drawhead recess, a gravity block projecting forwardly from the tripping arm being adapted to lock the knuckle block when closed and to release it when the tripping shaft is lifted, a limb on the tailpiece being concaved on the top edge to receive the tripping shaft when the latter is raised and moved forward. The device couples closely to link and pin coupling or to the "Miller" coupling, the



SMITH'S CAR COUPLING.

link being placed vertically behind and brought down over a boss, making a close and safe coupling. It will not override or permit the coupling to fall to the track when torn from the draught timbers. The knuckle is opened ready for coupling by movement of lever, and it will couple with all vertical planes automatically. The device consists of but three parts, which may be cast into form and used as shaped in the mould, the facility of manufacturing rendering the coupling inexpensive and well adapted for general use.

Sugar and Muscular Exertion.

It is a fact well known to Alpine tourists that on difficult climbing excursions an increased desire is felt for the consumption of sweets and sweetened foods, and many who never touch such things at home devour large quantities of them on these tours. It is also frequently remarked how eagerly the guides appropriate any sugar that may be left over and consume it en route. At the instigation of the Prussian War Office, investigations have recently been made by means of a special apparatus into the question whether the consumption of small quantities of sugar rendered the tired muscles capable of renewed exertion. In order to obtain a practical result, the person who was made the subject of the experiment was kept totally ignorant of the object of the experimenters. On one day a sweet liquid was administered containing thirty grammes of sugar, on the next day a similar liquid containing a sufficient amount of saccharin to render it indistinguishable from the other as regarded taste. When a very large amount of muscular work had been performed, it was found that a greater quantity of work could be got through on the days when the sugar was given than on the days when saccharin was given. The system had become very poor in sugar, in consequence of the severe muscular effort which had previously been gone through, and hence the administration of a comparatively small quantity of sugar had the effect of producing an increased capability for work.—English Mechanic.

Science Notes.

Prof. Otis T. Mason, the ethnologist of the United States National Museum, has been honored with LL.D. by the Columbian University.

In January last, at Hanover, after a period of cold weather, there fell on the rising temperature a snow in the form of compact balls, says Science. Many of these balls were simple and completely transparent, and consisted of single, simple, spherical crystals. These are described by F. Rinne in the Jahrbuch für Mineralogie. Apparently they were crystallized rain drops, but all efforts to make them artificially were without result. They resembled the chondrites of many meteorites, and these also Dr. Rinne finds it impossible to form artificially.

It is universally admitted that one of the most important outdoor occupations in its relation to public safety and to eyesight is that of the railway service. In England the same importance in securing accuracy in this field by scientific tests is given to those employed in the mercantile marine service. In a recent parliamentary report on tests for color ignorance and form vision it was stated that in 1896 5,051 persons were examined in form vision and thirty-four failed, 5,017 were examined in color vision and fifty-one failed. Of officers already in possession of certificates, who were examined in 1896, twelve failed to pass sight tests, one master, five mates, and two second mates failed in color vision and one mate and three second mates failed in form vision.

Gen. W. W. Duffield has resigned as superintendent of the Coast and Geodetic Survey and will be succeeded by Henry S. Pritchett, Professor of Physics and Astronomy in Washington University, St. Louis, Mo. Prof. Pritchett's support came almost exclusively from his scientific colleagues, and the application on his behalf was filed in the Treasury Department without his knowledge. He was five years in the Naval Observatory and for fifteen years has been connected with the Washington University. He is only forty years old and is the youngest man ever appointed to the head of the survey. He has been connected with the work of the Coast Survey and spent a year in Japan and China conducting experiments for determining the figure of the earth. Prof. Pritchett speaks French and German and has received a number of scientific degrees from American institutions and holds the degree of doctor of philosophy from the University of Munich.

Madder root, when freshly dug up, contains about eighty per cent of moisture, but after drying for sale this is reduced to about fifteen or twenty per cent. All samples contain a large proportion of extractive substances, consisting mainly of sugary and gummy matters, starch, pectic acid, etc. As a means of generating fermentation in the indigo vat, the value of the madder is almost entirely due to these extractive matters. In madder, says Mr. W. H. Gardner, in The Textile Recorder, the coloring principle is a glucoside, rubian, which has the composition $C_{26}H_{32}O_{16}$. It was first isolated by Schunck, who prepared it thus: Fresh madder root is extracted with boiling distilled water and the filtered solution treated with animal charcoal, which absorbs the rubian and chlorogenin. The charcoal is then collected on a filter, and washed with cold water to dissolve the chlorogenin, after which the rubian is dissolved by treating the charcoal with successive portions of alcohol, obtained by evaporation of the solvent. When thus prepared it forms a dry, brittle, amorphous mass of a gummy nature. It is soluble in hot water or alcohol, but insoluble in ether, and is not precipitated from solution by metallic salts.

It is interesting to learn that a descriptive account of Sig. Marconi's "telegrafo senza fili" has been published in an official paper issued by the Italian government. The author is Prof. Angelo Banti. In the experiments at Spezia it appears that good telegrams and clear signals were got through at a distance of twelve miles. The means adopted were, it is stated, the securing to the mast of the ship, ninety feet high, a vertical copper wire, ten millimeters in section, well covered with guttapercha. One end was attached to the receiver on board, the other end was free. Another mast of like height was erected ashore, and the transmitter was attached to its vertical wire. Another mast and transmitter were also placed in the arsenal. The ships employed were two ironclad war vessels, and these were engaged for a fortnight in taking observations. In these experiments it was demonstrated that the instruments could be securely placed deep down in the hull, messages being perfectly intelligible by the receiving instrument in a cabin eight feet under water, notwithstanding its surroundings of massive iron. The vertical wire has been shown to have greater efficiency than the horizontal wire. We also learn that the invention is essentially a practical one, and the visionary notions of blowing up powder magazines and synchronizing watches are wild dreams. Many suggestions, too, of previous efforts in wireless telegraphy have been current, but from all these Sig. Marconi's invention is distinctly separated.