belongs, and they find it to burn better and to be generally superior to the common oil.

Professor Whitney thought it likely that these oils were of animal origin, as no vegetable had been discov- in the Hudson river formation, from which also oils had been obtained.

Remarkable Spring.—Professor John Le Conte read a paper on the phenomena of the Silver Spring, in Marion county, Florida. This spring rises in a basin 30 feet deep, and pours out a stream large enough for steamers to ascend. Other basins along the stream showed nearly the same depth to the limestone crevices from which new springs boiled up. The marvelous property of the spring is the transparency of the water. It seemed on looking down, as though the plumb bob could be seen just as distinctly under 36 feet of water as it could be through as many feet of air. Experiments on reading cards fastened to bricks, proved that printing could be read at as great a distance under the water as in the air. The vertical depth of the water seems to the eye very much exaggerated, especially under the boat, so that without measurement, the bottom appears continually to recede under you as you float, and to appear under your boat about 50 feet deep, and to rise around on every side. The spring is very steadfast in its flow, and receives no surface water.

Gold of Georgia.—Mr. Wm. P. Blake read a paper on the "Distribution of Gold in Veins," and illustrated it by some beautiful specimens of gold from the Field's Gold Vein iu the bed of the Chestatee river, Georgia. From this vein $10,000 worth of gold was taken out of a pit ten feet deep, and one bushel of the rock yielded 3,000 pennyweights. He also exhibited some very large nuggets of gold from the mines of the Nacoochee Hydraulic Company, weighing respectively 387, 115, and 59 pennyweights, comparing favorably with the nuggets of California and Australia in size and richness. The 387 pennyweight mass is the largest yet found in Georgia. These and a much larger weight of smaller masses were washed out by the hydraulic process from the top of a ridge above the river; they being in what the miners call a hill deposit.

Zoological Museums.—Professor Agassiz spoke on the arrangement of the Zoological Museum at Cambridge. He said that this subject seemed hardly worthy the attention of a society like this, and yet museums were a condition of the progress of the learning and art in every country, and their arrangement expressed the progress made. He had, therefore, thought it worthy of presentatation. He had felt in this arrangement that every progress made in his devices coincided with the progress he made in his insight of his own subjects of inquiry. Professor Agassiz recounted the steps by which $225,000 had been secured for the foundation of a Museum of Comparative Zoology in Cambridge. Upon this basis he had drawn a plan capable of indefinite extension—a plan which, if carried out, would be inferior to none in the world. The structure already erected would be only one-tenth large enough to cover this. He had made it include zoological life in all its periods. A plan was required which would not require remodeling as it grew.

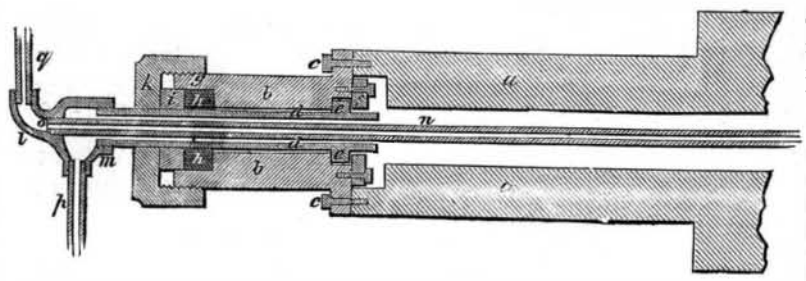
The Labrador Expedition.—The Great Eclipse.—Professor Stephen Alexander, of Princeton, chief of the Labrador expedition, returned with his party in the United States schooner *Bibb*, just in time to give the scientific association an account of the voyage and observations of the eclipse, in substance as follows:—"You are well aware that the observations of the total eclipse of 1860, at a point near the coast of Labrador, was undertaken under the patronage of the coast survey. I was the humble agent of carrying out the ideas of the superintendent—that is my associates and myself; for though the expedition had an ostensible head, that did not imply superiority on the part of any. We were to place ourselves as near as possible to the line of the central eclipse; and this morning I am to state to you as briefly as possible how we selected our station, and what we saw when we got there. Never in my wildest dreams have I seen such scenes of grandeur as we saw when nearing our destination. For the last fifty miles an anbroken chain of mountains seemingly formed of cast iron, rose beyond the limits of arborescent vegetation, patches of snow still lingering on their eastern side. We penetrated a little inlet, and found, after a while, a set of terraces, upon which we finally placed ourselves. When the day of the eclipse arrived, a great part of the heavens was overcast, and yet much that was interesting and a great deal that was valuable, were all gathered. We had arranged ourselves and distributed our labors; we discussed every method, we ascertained who should take this and who should take that. We were ranged together so as to communicate easily with all, the photographer at my side. We waited until the critical time; nobody spoke until everything had been observed. When I was perfectly sure of the minute of contact, I called for it; then the photographer let fly the spring of his instrument, and caught the little curve, and showed the ragged edge of the moon in his picture. Another phenomenon is a belt of light, which appears outside of the moon on the sun, showing that the rest of the sun is certainly brighter along by the edge of the moon. We studied that with different colored glasses, some colors showing it more strongly than others, and as usual, the faithful photographer caught it. And another curious phenomenon was seen by only one of our party. On this side of the moon close to the edge of the sun was a bluish light. The eye saw it, was satisfied it was there, reported it specially, and then we opened the photographic plate, and then that phenomenon, supposed to be an optical illusion, the photograph remembered it and put it down. As the eclipse advanced, nothing could be more beautiful, just because the clouds were there, and we did not need a screen glass. And through that little film of cloud the beautiful and lessening crescent could be looked at by the bare eye; and as it narrowed and narrowed, it became a bit of ragged silver wire. Those who looked without the dark glass saw the ragged edge, and it seemed to them that the glorious luminary was sinking away until it was lost; it looked like some intensely brilliant incandescent metal, exposed to intense heat, and dropping away until it was gone. Then, what would we have given for no clouds! But then was the most cloudy season of all; nine-tenths of the sky was covered. Just before that gloomy twilight came, one of the officers of the ship, whose part in the division it was to watch if he could see the shadow, looked around on the savage mountain, and on came the great black shadow, like some fearful cloud. He saw it approach. Three minutes passed, and he saw it fly. When the shadow come over us, oh! what a beautiful display of colors we had! Just as the eclipse was fairly total, our Canadian friend, Lieutenant Ashe, caught a view of the long, white blade of light, quivering through where the the sun had gone out, and he caught the first blush of that corona, which we would have given much to have seen throughout. But just because it was cloudy, perhaps that observation is valuable. It may be well for science that the shade was there. But we did not lose the corona quite; for I arranged through the assistance of Mr. Venable, some things to be looked after by the seamen themselves. They were instructed what to look for, and I received from an intelligent quartermaster whom I closely cross-questioned afterward, a distinct account of how he and some sailors saw the corona along the black moon, and how it looked, and how it trembled, These are among the more interesting phenomena that we saw."

THE LAST OF THE ATLANTIC CABLE.

The fate of the 2,000 miles of cable which were laid between Newfoundland and Ireland is decided. Capt. Kell and Mr. Varley, who went out from England to endeavor to raise the American end of it, report that, "although they have, on many occasions, been able to raise the bight, and so get on board at different times pieces of cable, in all amounting to about 7 miles, they have invariably found it broken again a few miles off." Attempts were made at various points, but all were unsuccessful; the rope, in almost every instance, giving way. It was, therefore, found necessary to abandon it. The outside iron wires were almost entirely destroyed with rust. The gutta-percha and copper wire are, however, in as good condition as when laid down. Those portions of the cable recovered at Break Heart Point, that were wrapped with tarred yarn, were sound; the tar and hemp having preserved the iron wires bright and free from rust.

IMPROVED STUFFING-BOX.

In the manufacture of paper, india-rubber, &c., hot iron rolls are required, and it is the usual practice to make them hollow, and heat them by passing steam into them through the axle. This, of course, makes it necessary to pack the journal-box steam tight, and the invention which we here illustrate is an improved plan of stuffing-box for effecting this packing.



CAMPBELL'S PATENT STUFFING-BOX.

a represents the end of the (journal of the) roller to be heated while it is revolving in its bearings; *b* is the stuffing-box, which is fastened steam tight on the end of the roll, *a*, in any suitable manner, so as to revolve with it; in this instance the stuffing-box is bolted to the end of the roll, *a*, at *c* and *c*; *d* is a piece of ordinary steam pipe, or tube, which is turned off in a lathe, so as to be round and smooth. At *e* is represented a collar firmly fastened on this piece of steam pipe, by shrinking it on at a white heat. This collar, *e*, is likewise turned off, round and smooth. A recess is made in the stuffing-box, *b*, in which the collar, *e*, fits, so as to permit the roll, *a*, freely to revolve around it. The flange or ring, *f*, is bolted on the end of the stuffing-box, *b*, as shown, and forms, with the recess in said stuffing-box, a chamber to enclose the collar, *e*. The collar, *e*, serves to prevent end motion of pipe, *d*, since the latter is confined by means of ring, *f*, against the collar, *e*. The ring, *f*, is received in a recess provided for it in the end of roll, *a*. At the front end of stuffiing-box, *b*, is a chamber, *g*, to receive the packing, *h*, and metal follower, *i*. The nut, or thimble, *k*, screws upon the end of the stuffing-box, *b*, and serves to compress the packing, *h*, against the bottom of chamber, *g*, thus expanding the packing, so as to make a steam-tight joint with the inside of said chamber and the outside of pipe, *d*; *l* is an elbow into which the pipe, *d*, is screwed at *m*. This elbow has likewise a pipe, *n*, screwed into its inner side at *o*, which is of small diameter, and passes loosely through the pipe, *d*, into the hollow portions of the roll, *a*, in such a manner as to leave a clear space through which the water of condensation can escape through the discharge pipe, *p*. Inserted in the elbow, *l*, is also the pipe, *g*, through which the steam is led from the boiler. The pipes, *p* and *g*, being rigidly connected with the pipes in the building, the pipe *d*, is prevented from revolving with the roll, *a*. The revolving roll, *a*, can be cooled as well as heated by this arrangement, by simply introducing cold water instead of steam.

The inventor says:—"Heretofore all stuffing-boxes applied to the rollers used in the manufacture of gutta-percha, paper, &c., in which steam or cold water is introduced while the rolls revolve, were of much larger diameter on the friction surface than my pipe, *d*, while the packing employed with such stuffing-boxes had a much more extended surface subjected to friction. Besides this saving of friction, my stuffing-box has also the advantage of cheapness, compared with those heretofore used."

The patent for this invention was granted June 12, 1860, and further information in relation to it may be obtained by addressing the inventor, Hugh Campbell, at Newtown, Conn.

At the depth of 2,480 yards water will boil; lead melts at the depth of 8,400 yards. There is red heat at the depth of seven miles; and if we adopt the temperatures as calculated from Morveau's corrected scale of Wedgwood's pyrometer, we find that the earth is fluid at the depth of 100 miles.

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