bubbles. The formation of the caps that finished off the completed, or dead, columns is, perhaps, to be explained in this way: When the column rose to a point where the wind reached it above the lee of the dam, the spray from the bursting bubbles would lodge chiefly on the leeward, or downstream, side of the orifice and in freezing would build up that side faster than the upstream side. The top would thus curve over upstream, the freezing spray building not only upwards but back against the wind, just as the hoar-frost or frozen mist of mountain-tops builds against a high wind. This would, of course, close the orifice in time and put a stop to the growth of the column.

It is not entirely clear how the bubbles rise to so considerable a height in the tubes—whether they are forced up by the rush of water over the dam and under the hood of ice, or whether it is because the air they contain is heated by the water to a higher temperature than the surrounding air. On this point, as on the whole subject, we should be very glad to get the opinions and observations of any one else who has seen this formation. Inquiry among friends has failed as yet to bring to light any similar observations on the part of others, and we find no mention of this phenomenon in the fourteen volumes of Thoreau's "Journal," observant as he was of the forms taken by ice, snow and frost along the Concord River and its tributaries. This has made our observation seem worth recording, though we can not doubt that under similar circumstances it might be repeated any cold winter.

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CELLULOID LANTERN SLIDES

To the Editor of Science: In a recent letter to Science regarding celluloid lantern slides, Mr. A. W. Gray states that "tracing cloth and waxed paper are usable; although their limited transparency produces a rather dark field, and the texture of the material shows plainly." The writer experimented some time ago with substitutes for glass lantern slides, giving special attention to slides which could be prepared quickly for temporary use.

I found that a satisfactory slide could be made by drawing figures or diagrams on thin white paper with india or colored ink. After the ink had become thoroughly dry both sides of the paper were brushed over with a light-colored penetrating oil. The thin glazed white paper used for duplicating typewritten letters serves admirably for the paper and a light neatsfoot makes a satisfactory oil. These paper slides may be inserted in cardboard holders and with suitable projecting apparatus the results are all that could be desired.

The effect of the oil is to increase greatly the transparency of the paper and when new the texture of the paper is quite imperceptible. Figures of lesser sharpness can be made with a fountain pen or even with a pencil. Diagrams and pictures of appropriate size may be cut from magazines or bulletins and treated with oil as outlined above. These are more satisfactory, of course, if no printing appears on the back, but for temporary use the printing in many cases will not destroy the usefulness of a diagram.

I have also made good slides in the same manner by treating $3\frac{1}{4} \times 4\frac{1}{4}$ photographic prints with oil. The projected pictures, while less bright than those procured with glass plates, present a softer effect and are especially interesting in the case of portraits. Since the usual photographic paper is quite heavy the lantern must be placed nearer the screen but if thinner paper could be obtained the results would be quite satisfactory if the usual distance were maintained.

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HOLDING LARGE SPECIMENS FOR DISSECTION

In the zoological laboratory there are many things which are valuable aids in time and convenience. In dissecting large specimens it is often necessary to have some method of holding parts of the anatomy away so as to allow freer rein to one's actions, or of holding the specimens open firmly. This may be done by using trays of galvanized iron with four or more loops of metal soldered on the sides to which ordinary heavy rubber bands are attached. To these rubber bands are tied small fishhooks which have had their barbs filed off. These hooks are to be fastened to any part of the anatomy so as to hold the specimen firmly, or to pull certain parts to the desired position. If a plain tray without the side loops is used, the rubber bands may be fastened to the ends of strong strips of cloth. The cloth is placed under the tray, one piece at the top and the other at the bottom, and if the strips are of the proper length, the rubber bands and hooks will be in relatively the same position as when they are fastened to rings along the edge of the pans. Removing the barb allows the hook to be withdrawn at any time without injuring the specimen. Care should be used not to stick the hooks in the hand, for owing to the strength of the rubber bands, the hook would make an ugly wound should it slip.

The advantages of this method are the saving of time and the lack of trouble, for we have a self-adjusting holder, as the rubber band allows for any change to be made in the position of the specimen or any of its parts. As compared to the old methods, it neither incurs the expense and the time of adjusting, as is the case with chains and hooks, nor the unreliability and unsteadiness as in the case where string and bent pins are used for this purpose.

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SCIENTIFIC BOOKS

Papers from the Department of Marine Biology of the Carnegie Institution of Washington. Vol. 9, pp. iii + 362, 105 pls., 14 figs., 1918.

In this handsome and very important volume there is a great deal of information that is of the highest value to the biologist, geologist, paleontologist and oceanographer. In fact, there is so much of value that this notice can mention but a few of the results that are most interesting to the reviewer. There are eleven papers, of which the largest is by T. W. Vaughan on "Some Shoal- water Corals from Murray Island (Australia), Cocos-Keeling Islands, and Fanning Island" (185 pp. and 73 pls.). The other authors are Alfred G. Mayer, M. I. Goldman, Albert Mann, Joseph A. Cushman, M. A. Howe, R. B. Dole and A. A. Chambers, R. C. Wells and L. R. Cary.

The shoal-water corals of the Great Barrier Reef of Australia described by Vaughan in the systematic part of his paper, amount to 149 forms and 38 genera, 1 genus and 15 species being new. Certain species range from the east coast of Africa on the west to the Hawaiian and Fanning islands on the east. Great pains have been taken not only to determine the proper names, but to give ecologic conditions as well. The illustrations are the finest we have ever seen of the skeleton of corals, and as the photographs are not retouched, the heliotypes look as natural as the corals themselves. Many of Dana's types are figured.

The ecology of the Murray Island corals near the northern end of the Great Barrier Reef is described at length in the first paper by Mayer, which is a very important one.

More than forty species were studied, with a view to determine the factors of their distribution. These factors, in the order of their importance, are: temperature, silt, the effects of moving water, and the struggle for existence between the species. All corals appear to be wholly carnivorous. Whenever the water is agitated, cool and free from silt, the reef-flat is wide and covered with an abundance of living corals, but where the water is calm, hot and depositing silt faster than the corals can remove it from themselves, the reef-flat is narrow and the corals deficient. Much silt kills corals in about two days. In a square 50 feet on a side, there occurred two living corals from 375 to 425 feet from shore, while in the same area, at from 1,400 to 1,500 feet out from land, there were 1,833 heads. Four genera constitute 91 per cent. of the corals present.

In regard to annual rate of growth among the stony corals there are some interesting facts. Some of the identical coral heads of