also allows one to quickly view detail on a surface one is grinding down in order to reveal internal structure.

The paleobotanist is well aware that soft parts may be preserved in fossil forms, for he not only recognises different tissues but sometimes individual cells. For him there is a true paleohistology. The paleozoologist, on the other hand, has hitherto been skeptical as to preservation of soft parts in fossil forms. The marvellous finds of Wolcott, his beautifully preserved annelida and delicate medusa-like holthurians—his reproductions of inner organs and discovery of fossil crustacean livers which still show their characteristic microscopic structure on cross section—these things now compel the paleozoologist to also become a believer. Traces of such soft parts should then be looked for, and the gum mounting is peculiarly adapted to reveal them. By this process the author has been enabled (1913 (*b*) plate IX, fig. 1) to show the remains of muscle fibres still adhering to a well-defined muscle field lying between the right hand fifth and sixth marginals of an arm of *Protopaloeaster narrawayi*.

METHOD.

Portions of the crude gum are selected for their clearness and lack of colour, and dissolved in benzol, to form a liquid that will filter easily. The stock solution should be kept in a glass-stoppered bottle, and a very fine bit of wire, or an insect pin, kept between the stopper and neck of bottle. Portions for use should be allowed to evaporate to such a consistency that the fluid will slowly drop from a glass rod. A regular dropping bottle will be found to be a convenient receptacle for the thicker gum.

The specimen to be treated may be attached to a glass slide by means of a few pellets of beeswax. Care should be taken to have the specimen so oriented that when placed on the stage of the microscope it will receive light at the angle which will best emphasize the features to be observed.

A cover glass of appropriate size and shape is then selected and cleaned, the specimen freed from dust, and a drop of benzol placed on it to free the pores or crevices from air. A few drops of gum solution are now added, and a drop also placed on the cover glass, which is then inverted and placed on the specimen. Additional gum may be easily run under the cover glass, and if bubbles are present a slightly inclined position will allow them to pass to one side and escape. Twenty-four hours or more is usually required to so fix the cover glass that it will not creep when placed on a vertical stage.

In case the specimen has a small or convex surface, the cover glass is first placed on a smaller support, such as the screw