as 1200 c.c. of sea-water. It made 700 to 800 revolutions per minute, and after eight minutes the plants were all collected at the bottom of the glasses. Our next proceeding was to pour away the clear water, and after rinsing the deposit, to put it in a smaller glass with a tapering bottom, where it was subjected to the action of a small hand-centrifuge. In this way we collected all the contents of, say, 300 c.c. of sea-water in one drop, which we examined in a counting chamber beneath the microscope, and noted carefully each single organism. As a rule we had to centrifuge the whole 300 c.c., but, if the plankton was very abundant, 150 c.c. or even 100 c.c. might suffice. Examination with the microscope is always more difficult when the organisms in the counting chamber lie close together.

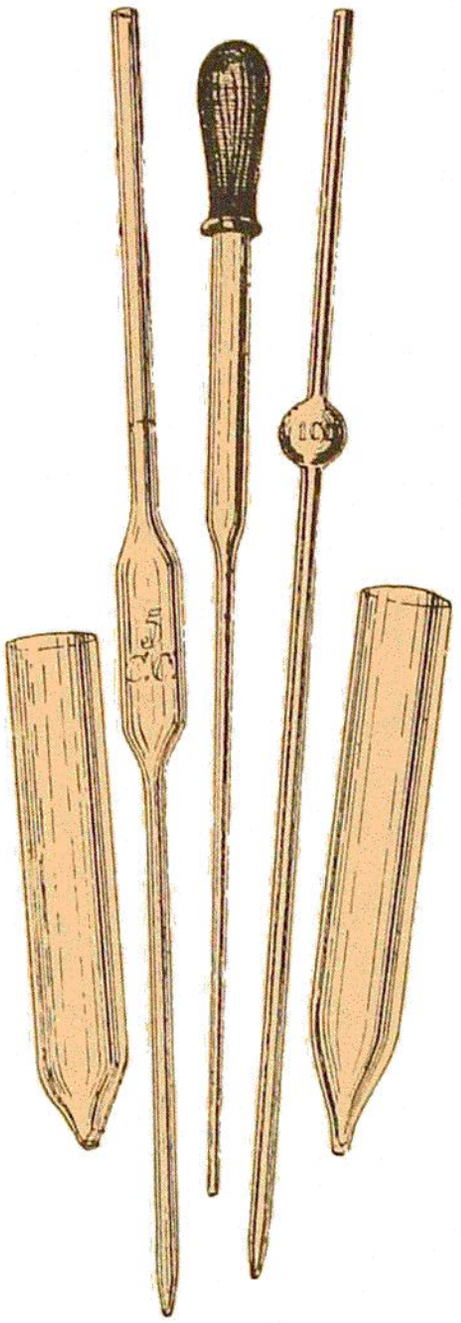

FIG. 251. — CENTRIFUGE GLASSES AND PIPETTES FOR USE WITH LOHMANN'S HAND-CENTRIFUGE.

Smallest organisms the most abundant in the open sea.

These investigations were carried out all the way from the Canaries to Newfoundland, and thence to the Irish coast banks, and resulted in our discovering that the smallest organisms which pass right through the silk nets are far more abundant than the others in the open sea, while the larger diatoms and peridineæ would appear to be so scanty that the total of all their species together only amounts to about ten per litre. Despite this fact, however, we found in the samples taken with our nets that there were at least fifty species of these larger forms at every station, so that as far as species go the flora is exceedingly rich.

Amount of plant life at different depths.

We were also able in this way to determine the occurrence of algæ at different depths. Samples from the surface, and from 20, 50, 75, and 100 metres were taken regularly, and we also examined samples now and then from still greater depths. We found, invariably, however, that the plant life