Oceania, and, incidentally, by Bunting, in *Hydractinia*. The most nearly comparable observations, so far as I have been able to discover, are those recently reported by Andrews in *Hydra*.

This work was begun at the Marine Biological Laboratory in 1897, continued during 1898, and is still in progress. It is hoped that a fuller account, with definite illustrations, may soon appear.

Grafting Experiments upon Hydromedusæ. CHAS. W. HARGITT.

IN course of previous work upon regeneration among the Hydromedusæ, the problem of grafting was forcibly impressed upon me, and during the summer of 1898, at the Marine Biological Laboratory, was undertaken and followed up during nearly two months, and with results as briefly outlined below.

It was undertaken to show the practicability of uniting sections of different individuals, different species and even genera.

The first work undertaken was upon Hydroids, chiefly Tubularians, *e. g.*, species of *Eudendrium*, *Pennaria*, *Parypha*, *Clava*, with only one series of experiments upon a Campanularian. The latter was for some reason almost wholly negative in results. In all the former the results were unusually successful, no less than 10% responding within the limits indicated. To merely summarize:

1. No difficulty was found in securing perfect union between segments of the same species in from twelve to twenty-four hours. A delicate sheath of perisarc overlapping the proximal ends was first secreted, and this was followed by organic union of the cœnosarc of the hydroid. The grafting was equally successful whether made by oral, aboral or alternating contact of the segments. Abundant heteromorphism was secured along with the other results. 2. It was equally easy to secure union of male and female specimens of the same species. 3. If the distinctness of Agassiz's species of *Eudendrium dispar* and *ramosum* is to be maintained—a fact which has seemed to me doubtful—then there was secured a ready grafting of different species. 4. In no case was I able to secure successful grafting between different genera. This was tried repeatedly with several, but in each case with negative results.

The second problem undertaken was upon the medusæ. The most accessible form was *Gonionemus vertens*, and the results obtained were on this form alone. Grafting was made possible only by the expedient of paralyzing the specimens by emargination of the entire bell, thus removing the coördinating centers. This done, there was no more difficulty in securing perfect union of different portions of the body than with the hydroid forms. It mattered little from what portion of the body taken, or in what relation placed, perfect union was usually secured in from 24 to 48 hours. Two medusæ grafted orally recovered nervous activity, and even exhibited a definite coördination, the double medusa acting as one.

The Life-History of Dicyema. WILLIAM MORTON WHEELER.

A STUDY of the Dicyemidæ (*Dicyema coluber*, n. sp.; *Dicyemennea Whitmanii*, n. sp., and *Dicyemodeca sceptrum*, n. gen. et n. sp.), parasitic in the kidneys of the West Coast *Octopus* (*O. punctatus*), was undertaken with a view to answering the following questions concerning the life-history of these animals: 1. What are the relations of the nematogenic and rhombogenic individuals to each other? 2. What is the meaning of the so-called infusoriform embryo? 3. What is the meaning of the infusorigen? An examination of the parasites of one hundred *Octopus* of different ages led to the conclusion that the Dicyemidæ first reproduce as nematogens for several generations, but that