

widely separated ventral nerve cords, without serial ganglia, and especially in the paired sympathetic nerves on the pharynx and oesophagus, the pharynx being markedly muscular. The simple eyes (one pair), the numerous paired segmental organs or nephridia, of which the outer and the internal vesicle are really coelomic, while the first pair become the large salivary glands, as in some Oligochaetes; the short stomodæum and proctodæum (or anterior and posterior sections of the alimentary canal), the hollow, sac-like limbs, and the soft, delicate integument, without a dense, hard exoskeleton and the presence of cilia are all worm features.\* But *Peripatus* is also a Tracheate, for like insects it breathes by tracheal tubes opening by external stigmata, its limbs show slight segmentation and some are modified as mouth-organs, it has antennæ, and the heart and the generative organs are coelomic, the ova and sperms being derived from the walls of the coelom. All these features are in contrast to the Annulates and connect *Peripatus* with the Tracheates, and therefore the Insects. "I believe it to be," said Moseley, "a nearly related representative of the ancestor of all air-breathing Arthropoda i.e., of all insects, spiders and myriapods. It is impossible here to consider the profoundly interesting nature of the body-chamber, which is a hæmocœl, and not a coelom or true body-cavity at all, certain portions of the true coelom alone persisting as in the segmental or nephridial spaces, and the generative glands. The study of *Peripatus* throws a flood of light upon the origin of many of the most important features in the Tracheates, it is indeed the Proto-tracheate and forms an entire class to itself, a class with one genus only. But on the other hand it is an Annulate and has features in common with Molluscs and Echinoderms. There is probably no more generalized type of animal living and it may be justifiably maintained that it is therefore the most interesting and possibly the most ancient of metazoan stem-forms. If *Peripatus* preceded the Annulates and Tracheates and was the ancestor of all the worms, insects, spiders and myriapods, why have we not some fossil remains in some of the early fossiliferous strata? *Peripatus* is such a frail, soft creature that excepting for the hard jaws with four sickle-shaped cutting blades; the chitinous jaw-levers or so-called buccal tracheal pits, first correctly described and interpreted by Dr. C. Gordon Hewitt; the minute ocelli or simple eyes, the chitinous claws, minute external spines and the tracheal tubes, no remains could be readily preserved

\*The two muscular layers, circular and longitudinal and unstriped, are worm features; the fibres of the jaw-muscles are, however, striped (see Dr. C. Gordon Hewitt "Buccal Pits of *Peripatus*" Proc. Manchester Lit. and Philos. Soc., Vol. 50, Oct. 21, 1905).