

and Bees. Different kinds of Ants live together, if not as parasites one upon another, at least in a kind of servitude. Other Insects live upon the bodies of warm blooded animals, such as the Fleas and Lice, and of these the number is legion. Some Hydrachnas are parasitic upon aquatic Mollusks.¹

Among Crustacea, there are Crabs constantly living in the shell of Mollusks, such as the Pinnotheres of the Oyster and Mussel. I have found other species upon Sea-Urchins, (Pinnotheres Melittæ, a new species, upon Melitta quinquefora). The Paguri take the shells of Mollusks to protect themselves; while a vast number of Amphipods live upon Fishes, attached to their gills, upon their tongue, or upon their skin, or upon Starfishes.² The Cyamus Ceti lives upon the Whale. Some Cirripeds are parasites upon the Whales, others upon Corals. In the family of Lernæans, the females are mostly parasites upon the gills or fins or upon the body of Fishes, while the males are free.

Among Worms this mode of existence is still more frequent, and while some dwell only among Corals, entire families of others consist only of genuine parasites; but here again we find the most diversified relations; for, while some are constantly parasitic, others depend only for a certain period of their life upon other animals for their existence. The young Gordius is a free animal; it then creeps into the body of Insects, and leaves them again to propagate; the young Distoma lives free in the water as Cercaria, and spends the remainder of its life in other animals; the Tænia, on the contrary, is a parasite through life, and only its eggs pass from one animal into the other. But what is most extraordinary in this, as in many other intestinal Worms, is the fact, that while they undergo their first transformations in some kind of animals, they do not reach their complete development until they pass into the body of another higher type, being swallowed up by this while in the body of their first host. Such is the case with many Filaria, the Tænia and Bothrocephali. These at first inhabit lower Fishes, and these Fishes being swallowed by Sharks or Water Birds, or Mice with their Worms being eaten up by Cats, the parasites living in them undergo their final transformation in the latter. Many Worms undertake extensive migrations through the bodies of other animals, before they reach the proper place for their final development.³

¹ NITZSCH, (CHR. L.) Darstellung der Familien und Gattungen der Thierinsekten, Halle, 1818, 8vo. — HAYDEN, (C. V.) Versuch einer systematischen Eintheilung der Acariden, Isis, 1826, p. 608. — RATZENBURG, (J. S. C.) Die Ichneumoniden der Forstinsekten, Berlin, 1844-52, 3 vols. 4to. fig. — CLARK, (BR.) Observations on the Genus Oestrus, Trans. Lin. Soc., III., p. 289, fig. — KOCH, (C. L.)

Die Pflanzen-Läuse, Aphiden, Nürnberg, 1846, 8vo. fig. — DUGÈS, (ANT.) Recherches sur l'ordre des Acariens, Ann. Sc. Nat., 2de sér., 1834, I., p. 5, II., p. 18, fig.

² I have found a new genus of this family upon Asterius Helianthoides.

³ See above, p. 76, note 1; SIEBOLD, Wanderung, etc., p. 77, note 1; STEENSTRUP, etc.