

Among Mollusks, parasites are very few, if any can properly be called true parasites, as the males of some Cephalopods living upon their own females;¹ as the Gasteropods growing buried in Corals,² and the Lithodomus and a variety of Arcas found in Corals. Among Radiata there are no parasites, properly speaking; some of them only attaching themselves by preference to certain plants, while the young of others remain connected with their parent, as in all Corals, and even among Crinoids, as in the Comatula of Charleston.

In all these different cases, the chances that physical agents may have a share in producing such animals are still less than in the cases of independent animals, for here we have superadded to the very existence of these beings all the complicated circumstances of their peculiar mode of existence and their various connections with other animals. Now, if it can already be shown from the mere connections of independent animals, that external circumstances cannot be the cause of their existence, how much less could such an origin be ascribed to parasites! It is true, they have been supposed to originate in the body of the animals upon which they live. What then of those who enter the body of other animals at a somewhat advanced stage of growth, as the Gordius? Is it a freak of his? Or, what of those which only live upon other animals, such as lice; are they the product of the skin? Or, what of those which have to pass from the body of a lower into that of a higher animal, to undergo their final metamorphosis and in which this succession is normal? Was such an arrangement devised by the first animal, or imposed upon the first by the second, or devised by physical agents for the two? Or, what of those in which the females only are parasites? Had the two sexes a different origin? Did perhaps the males and females originate in different ways?

I am at a loss to conceive how the origin of parasites can be ascribed to physical causes, unless, indeed, animals themselves be considered as physical causes, with reference to the parasites they nourish; and if so, why can they not get rid of them, as well as produce them, for it cannot be supposed, that all this is not done consciously, when parasites bear such close structural relations to the various types to which they belong?

The existence of parasitic animals belonging to so many different types of the animal as well as the vegetable kingdom, is a fact of deep meaning, which Man himself cannot too earnestly consider, and, while he may marvel at the fact, take it as a warning for himself, with reference to his boasted and yet legitimate inde-

¹ See above, p. 74, note 1, KÜLLIKER, MÜLLER, VERANY and VOGT, etc.

² RÜPPELL, (ED.) Mémoire sur le Magilus antiquus, Trans. Soc. Strassb., 1832, I., fig.