

the beacon light of hope to guide him,—the *mens conscia recti* to invigorate him. Although great additions have been made within the present century to the list of known parasites, it is still far from complete: vide *Rudolphi Synop. Ent.* The migratory habits of animal parasites are a source of much difficulty in tracing their history. In fact it is the greatest impediment in the way of investigation. The condition of their existence being so much specialized, so dissimilar and often so far asunder from one another. Innumerable abortive experiments require to be made before those conditions are all examined, and the entire history of the particular organism which is the subject of investigation ascertained. Impelled by instinct they traverse the organisms which they infest, or leave them for the outer world. They also are transferred passively from place to place, from organism to organism. For example the six-hooked embryo of the cestoid entozoa having been set free in the interior of the alimentary canal of various animals, migrates actively into a portal vessel, then passively floating in the circulating blood it lodges in some remote capillary and renews the active migration, passing into the interior of the tissues which its instinct leads it to select for its dwelling place, preceding its development into a cystic worm.

How many observations required to be made to determine this single fact? A six-hooked animal was seen in the intestine of a cystic worm in a distinct tissue, a strong imagination would hardly have suggested any relation between them.

A cercaria without sexual organs and two thirds tail, swims freely in the water among little mollusks like the paludina. In the interior of one of these mollusks is found a distoma with several organs, but without tail, and in no respect resembling the cercaria. It would not be expected that these two animals had any relation, yet the cercaria is developed into the distoma. In this connection, mention need but be made of Kuchenmeister who for four years was vainly on the look out for a tænia belonging to the cysticercus of the meal-worm; of Filippi, who opened hundreds of animals to trace the development of the eggs of distoma into cercaria. Simple in apparent structure though they be, rude and loathsome to the eye, not from any special deformity but from association, these entozoa afford a deep insight into the mysteries of vitality. The higher organisms that inhabit the outer world, are opaque, and consequently present insuperable obstacles to the ocular examinations of their vital functions, no light