

primitive representatives of the Apterygota have, so that a study of the "Myriopoda" in question is fully as important for a phylogenetic study of insectan evolution, as that of the above-mentioned Crustacea.

Any attempt to derive winged insects from forms unlike the apterygotan type of insect is wholly unwarranted, to my mind, since the lowest winged insects, such as the ephemerids, Plecoptera, etc., are anatomically strikingly similar to such Apterygota as the Lepismids, etc., which in turn are connected by intermediate forms with the lowest Apterygota such as the Protera: and no one who has carefully examined the Protura could doubt that in them we have the most primitive known representatives of the insectan group; so that the recent attempts to derive winged insects directly from a trilobite type of arthropod (without reference to the Apterygota) are extremely "far fetched," to say the least, and even the weight of Handlirsch's authority as a paleontologist is insufficient to convince a skeptical morphologist, when the evidence of anatomy is directly against Handlirsch's assumption—although many recent writers who have not taken the trouble to investigate the merits of the case, have unhesitatingly accepted Handlirsch's astonishing proposal that winged insects are to be derived directly from a trilobite type of arthropod without reference to the Apterygota, and regardless of the facts indicated by a comparative anatomical and embryological study of apterygotan and pterygotan insects.

Even if one were to grant, for the sake of argument, that the anatomically and embryologically far more primitive Apterygota are not so near the ancestral type of insect as the Pterygota are, we would not be justified in assuming that the Pterygota are to be derived from a trilobitan type of arthropod, since, as I hope to bring out in a more detailed discussion of the question, the Trilobita are more closely related to the Merostomata than to any other arthropods (save perhaps the Apodidæ), and serve to connect the Apodidæ with the Merostomata in a line of development leading *away from* that of insects and *toward* the *arachnid* line of evolution, instead of the trilobites standing more nearly in the direct line of descent of the insectan type of arthropod. Insects