but, besides this, well-developed mandibles, and these serve in many species for the high purposes of making nests, taking prey, transporting young and food: the jaws are therefore *perfunctionate* in th se species to a degree comparable with that of the jaws of a Carnivore among Mammals. The higher kinds also supply the young with food, either by storing it or by direct feeding—a quality approximating to that of the Altrices (Nursers) or highest subdvision of Birds. The food is either vegetable or articulate-animal, not vertebrate-animal; the animal food being thus the same in kind with the material to be made of it, just as, among *Mammals*, the highest of Carnivorous species live on the flesh of Mammals, and only the lower on fish and insects. Individuals of many of the higher species live in communities for mutual work and with sometimes a special division of the work among them. The wings are fitted eminently for the legitimate purpose of flying, and are typical in size, texture and power. The species are all perterrestrial.[4]

The above characteristics show that the tribe of Hymenopters takes the lead among Insects, and therefore stands at the head in the subkingdom of Articulates.

Note on Size under the Insect-type.—If, then, Hymenopters stand *first* among Insects, we may learn from the higher of the species the *normal size* of the Insect-type under its best condition as to structure, form and functions. This *archetypic* size is between 8 and 12 lines (or twelfths of an inch) in length and 2½ and 3 in breadth:—taking the Wasps as the superior type, 11 lines by 2½ to 3; taking the Hive-bee, 8 by 2½. Such being the size connected with the most highly cephalized condition of Insect-life, (1) any larger size of structure among inferior tribes of Insects is an exhibition of *amplification*, that is, of a more diffused condition of the systemic force—which force never exceeds that of the archetype, and may be less to any degree; (2) the more inferior the group in which large forms occur, the greater the amount of

formis, anthraciformis, muscæformis, &c. In the Diptera we find *Bombylius*, resembling, as its name implies, *Bombus;* and also *Laphria*, which so closely apes the humble-bee in its form, coloration, size and flight, even to the buzz, which is, if anything, still louder. Also there is the strongest resemblance in some *Syrphi* to *Vespa*, and especially to different species of *Crabro*. But while the Lepidoptera and Diptera resemble the Hymenoptera, we cannot say that Hymenoptera ever *assume* the form of any flies and moths. They seem isolated; and resemble only themselves. In the case of the *Laphria*, the plump, bee-like form, and the dense yellow and black hirsuties, which cause them to be mistaken for humble-bees by persons unacquainted with their structural differences, are just those features that are exceptional in the Diptera, and are normal in the Hymenoptera. The fly to get them has to pass over one sub-order to obtain a bizarre form which is a prevalent and common family attribute of the Apidæ."

Addition to Note, while in the press.—These, and other observations beyond, for which I am indebted to Mr. Packard, are so apposite to my subject as to appear as if prepared for the use here made of them. In fact, however, my paper with its notes was written without any acquaintance with the author beyond what I had derived from his valuable paper, and also without his knowledge.

[4] Some Hymenopters can swim with their wings or legs; but none are *semiaquatic*.