

FURTHER ON THE DIPTERA CONSIDERED AS THE
HIGHEST INSECTS.

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In my article in *CANADIAN ENTOMOLOGIST*, 1893, pp. 7-8, as also in my previous note in *Science*, Vol. XIX., 1882, p. 320, I stated that Hyatt and Arms were the first to point out that the Diptera were the most highly specialized insects, and consequently to be considered the highest in rank. It should be noted, however, that the same idea was advanced at the same time by the renowned insect anatomist, Mr. B. T. Lowne, well known for his work on the anatomy, etc., of the blow-fly. In part I. of this work, Oct., 1890, p. 25, Lowne says:—"The blow-flies belong to the family *Muscidae*, one of the most highly specialized groups of the Diptera, the most highly specialized order of the class Insecta."

On pp 26-7, he further says:—"Just as all discussion would be futile as to whether a bird or a mammal is the higher type, so it is useless to consider whether the Diptera or the Hymenoptera have the higher organization; but there can be no question as to which of these orders departs most from the more generalized form. The Diptera are far more remarkable in their developmental history, and in the modification of structure which they present in the adult or imago form. In this relation the strong tendency of many to produce their young alive, and the fact that some have a capacious matrix, or uterus, in which the larvæ are hatched, or even attain the pupa form, before birth, is not without interest, presenting as it does some analogy with the viviparous character of the mammalia amongst vertebrates—whilst the nest-building instincts are more manifest in Hymenoptera and in birds. [This is an important analogy, and well pointed out.—C. H. T. T.] It is true that the flies, and more especially the heavy forms, with a comparatively tardy flight, like the blow-fly, have been regarded as 'stupid'—Sprengel called them 'die dummen Fliegen'—and do not excite our sympathy and curiosity to the same extent as the social Hymenoptera; but it is impossible to judge of the intellectual functions of an insect. The manner in which the blow-flies and their near allies, the house-flies, have made themselves at home