

Order 6. ORTHOPTERA. (Greek: *Orthos* straight, and *Pteron* a wing.) Includes

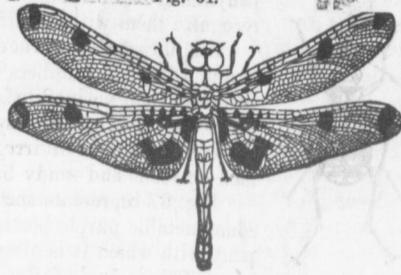
Fig. 63.



Grasshoppers, Locusts, Crickets, Cockroaches, &c. Four wings, the anterior pair of which are somewhat thickened to protect the broad net-veined hinder pair, which fold up like a fan upon the abdomen, in long straight folds. The hind legs are large and thick, and adapted for leaping. Mouth furnished with strong jaws for biting and masticating.

Order 7. NEUROPTERA. (Greek: *Neuron* a nerve, and *Pteron* a wing.) Includes Dragon-flies (Fig. 64), May-flies, Caddis-flies, Termites, Lace-

Fig. 64.



winged flies, etc., Four thin, glassy wings, very finely reticulated, or covered with a fine network of veins or nerves. The mouth is usually furnished with biting jaws.

1. TIGER BEETLES (*Cicindelidae*).

Having now enumerated the various Orders into which Insects are divided, and their chief characteristics, it remains for us to select one for our consideration here, in respect to those of its members who may be deemed directly or indirectly beneficial to mankind. We have decided upon beginning with the Beetles (*Coleoptera*), partly because they are very favourite objects of study with Entomologists, and partly because they present strongly marked peculiarities both in structure and habits, and are very abundantly distributed everywhere. The first family of Beetles is the *Cicindelidae*, of which we have only one genus, *Cicindela*, in Canada. This name, derived from the Latin, signifies a Glow-worm or bright shining insect, and is applied to them on account of their bright metallic colours, which sparkle in the sunshine. In English they are commonly called Tiger-beetles from their fierce disposition and habit of leaping upon their prey. They feed entirely upon other insects, both in the larval or grub state, and when they attain to the winged or beetle condition. Their favourite haunts are warm sunny banks, sandy roads, railway tracks, or other spots exposed to the full glare of the sun, and free from vegetation, which would impede their movements. Some species, however, frequent grassy places on the borders of woods and among scattered trees. At the approach of the passer-by they suddenly take wing, and fly with great rapidity for a few yards before him, alighting again as suddenly as they rose, but always with their heads turned in the direction of the approaching danger. The same individual may be started up again and again, but after a few alarms, when he begins to find himself the object of a particular pursuit, he craftily eludes further persecution by making a long and circuitous flight back to his former station. By carefully marking where he goes, and going quietly back, we have often succeeded in finding the desired specimen careless and off his guard, and captured him even without the aid of a net. In cloudy or stormy weather they hide themselves in some convenient retreat, but they soon re-appear with the returning sunshine.

The eggs are laid in the earth, where the grubs that are hatched from them also spend their lives. These grubs or larvæ are very curious creatures, and well repay a little observation. It would be difficult to describe their form so as to render them easily recognizable to the reader, but the accompanying cut (Fig. 65.) will afford a sufficiently good idea of their appearance.

Fig. 65.



It will be seen that they have a pair of tremendous, curved jaws, three pairs of legs, and a pair of very curious recurved hooks or spines on the eighth segment towards the tail. They are of a yellowish white colour with a brownish horny head. They live in deep round holes, about the diameter of a lead pencil, the orifice which they usually close with their heads. No sooner does any unsuspecting insect approach sufficiently near than it is seized by a sudden effort, and carried off to the bottom of the hole, there to be devoured at leisure. The larva lives in this manner throughout the summer, and