

rostrate, the wings narrow, and the legs and body slender, as in the *Tipulæ*.⁶

b. Amplipenniforms.—The Amplipenniform Neuropters are related to the Amplipens in having the wings amplificate; but, as follows naturally from the fact of the inferior grade of Neuropters, these wings resemble rather the narrower forms of the inferior Lepidopters, or those of the Homopters and Trichopters, than the wide forms of the typical species—they being long-amplificate and at the same time only sparingly broad-amplificate. In some species they are partly colored, another Lepidopteroid character. They diverge most widely from those of the Lepidoptera in being reticulate, which is a special *Neuropterous* characteristic, although not without exceptions. The posterior pair is sometimes a little broader than the anterior. The species are either perterrestrial or semiaquatic, and either permaturative or prematurative.

⁶ A. S. Packard, Jr., in his memoir already mentioned remarks as follows on the Termites, and the Panorpids.

“The *Formicidæ* among Hymenoptera have in the Neuroptera their well-known analogues, the *Termites* or White Ants. Like the true ants, these interesting insects rear nests of sand or clay, or the colonies are concealed beneath various objects, or in decayed trees and roots. There are also a differentiation of the individual, a partition of labor, and wonderful instincts, as in ants. Those characters which place the *Termitidæ* the highest in their suborder are just those which make them so much like Hymenoptera. Thus, in the small occiput, the large epicranium which occupies the largest part of the head, and in the general arrangement of the small mouth-parts, this family differs widely from other Neuroptera. Though the prothorax is large, yet the middle region of the body is massed together more than usual. Like the ants, the costal nervures of the wings are well-developed, while those occupying the hinder portions of the wings are obsolete. Indeed, both the true and white ants do not fly much, and that for the most part when swarming.”—p. 601.

“The family *Panorpidæ* assumes dipterous shapes. *Bittacus* has its analogue in the fly *Bittacomorpha*. The resemblance of the female *Panorpa* to *Tipula* is very striking. In both the mouth parts are greatly elongated, and the head much produced in that direction, leaving a very short vertex; and the antennæ are much the same in size and shape. *Panorpa* is remarkable for the short, ovate, compressed thorax, owing to the reduced size of the prothorax, and the compactly massed notal and side pieces, wherein it simulates *Tipula*; but the resemblance is still greater in the elongated episterna and coxæ, and the long slender legs. If we go more carefully into a comparison of the notum of both insects, we shall find the large mesoscutum, the short scutellum, and the longer-than-broad horse-shoe-shaped scutum of the metathorax of *Panorpa* closely resembling those pieces in *Tipula*. There is the same form of the first pair of wings. In both the straight costa bends gradually around at the apex, as the inner edge curves up just as rapidly to meet the costa at the apex which is situated in the middle line of the wing. Also in the disposition of the main nervures, their relative distances apart, and their termination, even to the formation of the pterostigma and the branches that lead to and from it, the analogy is still maintained. At the base of the wing, and towards the outer margin of *Tipula*, there are a few cross recurrent nervules, and irregularities in the branching of the principal nervures that remind us of the system of net-veins that cross the wings of *Panorpa*. The abdomen in the two genera is dilated at its base and appressed to the thorax; and in its long cylindrical form it bears a similar proportion to the head and thorax, while the swelled extremity and genital pieces in the females of both genera are strictly analogous. Both genera agree, according to the representations of authors, in supporting themselves on their long legs, while introducing their slender and pointed abdomen into the earth, when about to deposit their eggs.” pp. 594, 595.