

definite equatorial line, so to speak, from which to reckon in either direction. Hence, in tracing the homologies in view, only parts posterior to the mandibles, in one section of the Articulata, can correspond to parts so situated in another section. On this account, the upper lip need not be brought into our comparison, even were it a transformed pair of appendages; and for the same reason also, we may doubt strongly its having this supposed relation, as it exists also in Crustacea anterior to the mandibles, and notwithstanding the various transformations which the other parts undergo, it retains quite uniformly the same general character through all the grades of species.

There is also in Insects or Arachnida a languette, adjoining the lower lip, which it has been suggested may be analogous to another pair of maxillæ. It seems more probably to be an appendage of the lip, if not of the fleshy parts below, and has been so considered by different entomologists. The lower lip itself is evidently a true pair of maxillæ, as the attached palpi present in Insects show. Yet it does not follow that the lower lip in Crustacea has the same relations, although having the same name. We have given reasons for rejecting this conclusion with regard to Crustacea in another place, where we sustain the common view, that it is a mere fold of the skin. Another strong reason for this opinion is found in *Limulus*, in which the lower lip, instead of following, as usual, the mandibular legs, is situated posterior to the fifth pair of legs, the basal joint of all these legs occupying the mouth opening. The lip, therefore, takes its position from the character of the mouth, and is not fixed in position like a pair of normal appendages.

These remarks have been thought necessary to remove objections that might come up, to the view we would present. The facts thus lead us to conclude that the normal parts essential to the mouth of Arachnida are but three pairs—a pair of mandibles and two pairs of maxillæ; and this conclusion is essentially the same that is presented by Latreille.\* The number of organs in Arachnida, counting from the mandibles, will hence be fourteen, the same number as in the Pycnogonoids, and the two groups will be parallel, as follows:—

\* Cuv., Règne Animal, notes to General Remarks on Insects and Crustacea, and Arachnida.