

The first two authors have limited themselves to a description of the ganglia, without noticing the various nerves which proceed from them; the last has given no figure. Cuvier recognised the four pairs of ganglia which make up the central nervous system of *Pneumonoderma*; but nothing further is to be learned from his description and figure. Van Beneden has given a better figure of the central nervous system, without, however, distinguishing the cerebro-pleural and cerebro-pedal connectives, which he regards as forming only a single trunk. Gegenbaur confines himself to a very brief description, in the course of which he remarks that the acetabuliferous appendages are innervated by the pedal ganglia! Lastly, the description of Souleyet is much more exact, and my own researches on the nervous system of *Pneumonoderma* have shown that his figures are exceedingly accurate.

On the other hand, the comparative examination which I have made of the genera *Dexiobranchæa*, *Spongiobranchæa*, and *Pneumonoderma* has demonstrated that the central nervous system is essentially similar in composition in these three genera; so much so, indeed, that to describe one of them is to describe all.

The cephalic portion of the *Pneumonodermatidæ* being somewhat elongated (see Pl. V. fig. 1), as also the anterior part of the digestive tract, the central nervous system is situated relatively farther back than in the other *Gymnosomata*. As in all these it is composed of eight ganglia (Pl. V. fig. 1) disposed in pairs. For information regarding the form and relative dimensions of these ganglia I may refer to the figures, from which it may be obtained more readily than from even a long description.

Three of the pairs of connectives—cerebro-pleural (Pl. V. fig. 1, *e*), cerebro-pedal (*f*), and pleuro-visceral (*g*) are here rather long, in such a manner that the four pairs of ganglia are less concentrated than in other families. It is in *Dexiobranchæa* that the connectives (especially the cerebro-pleural and cerebro-pedal) are the longest, and that the concentration of the ganglia is least marked; this agrees well with the other archaic characters of this genus.

I. The cerebral ganglia (Pl. V. fig. 1, *a*) are slightly elongated transversely, and almost in apposition. In *Spongiobranchæa* there is a small cerebral commissure, more appreciable than in *Pneumonoderma*.

From each cerebral ganglion issue three connectives—cerebro-pleural (Pl. IV. fig. 9, *f*), cerebro-pedal (*g*), and cerebro-buccal (*i*), the first being the strongest. The last is the most slender, and arises from the œsophageal face of the ganglion (see Pl. IV. fig. 9, *i*, and Pl. V. fig. 3, *j*), whilst the cerebro-pleural and cerebro-pedal connectives issue from the lateral surface, one behind the other, the latter being the anterior.

The anterior part of each cerebral ganglion gives rise to three nerves, or more correctly to two, for the two lateral nerves (Pl. V. fig. 1, *j* and *k*) arise by a common trunk.

1. The median nerve (*l*) passes to the proboscis, the buccal opening, and the lips.