

In this division of the animal kingdom, the primary nervous cords always pass along the middle of the lower surface of the body, this being the situation which, in the absence of a vertebral bony column, affords them the best protection. They may be considered as analogous to the spinal marrow, and as serving to unite the series of ganglia, through which they pass, into one connected system. On arriving at the œsophagus, they form round it a circle, or collar, studded with ganglia, of which the uppermost, or that nearest the head, is generally of greater size than the rest, and is termed the *œsophageal*, *cephalic*, or *cerebral* ganglion, being usually regarded as analogous to the brain of larger animals. Perhaps a more correct view of its functions would be conveyed by calling it the principal brain, and considering the other ganglia as subordinate brains. This large ganglion, which supplies an abundance of nervous filaments to every part of the head, seems to be the chief organ of the higher senses of vision, of hearing, of taste, and of smell, and to be instrumental in combining their impressions, so as to constitute an individual percipient animal, endowed with those active powers which are suited to its rank in the scale of being.

Such is the general form of the nervous system in all the *Annelida*; but in the higher orders of *Articulata* we find it exhibiting various degrees of concentration. The progress of this concentration is most distinctly traced in the *Crustacea*.* One of the simplest forms of these organs occurs in a little animal of this class, which is often found in immense numbers, spread over tracts of sand on the sea shore, and which is called the *Talitrus locusta*, or Sandhopper, (Fig. 43S.) The central parts of its nervous system are seen in Fig. 439, which represents the abdominal side of this animal laid open, and magnified to twice the natural size. The two primary nervous

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* See the account of the researches of Victor Audouin, and H. M. Edwards, on this subject, given in the *Ann. des Sc. Nat.* xix. 181.