

the course of its farther distribution, both to the muscular and the sentient organs of the body. Each of these spinal nerves also sends branches to the ganglia of the sympathetic nerve, which, as was formerly described, passes down on each side, parallel and near to the spine.

Enlargements of the spinal marrow are observed in those parts, (w and L, Fig. 449,) which supply the nerves of the extremities, the increase of diameter being proportional to the size of the limbs requiring these nerves. In Serpents, which are wholly destitute of limbs, the spinal marrow is not enlarged in any part, but is a cylindrical column of uniform diameter. In Fishes, these enlargements appear to have a relation to the size of the organs of motion or sensation, and correspond to them in their situation. Thus in the *Trigla lyra*, (the Red or Piper Gurnard,) and the *Trigla Gurnardus* (the Gray Gurnard,) there are, at the commencement of the spinal marrow, numerous enlargements, presenting a double row of tubercles, (as seen in the space between m and s, Fig. 451.) The nerves from these tubercles supply the detached rays, or feelers, anterior to the pectoral fin. Fishes which possess electrical organs have a considerable dilatation of the spinal marrow, answering to the large nerves which are distributed to those organs. Birds which fly but imperfectly as the *Gallinaceous* tribe and the *Scansores*, have the posterior enlargement much greater than the anterior; a disproportion which is particularly remarkable in the *Ostrich*. On the contrary, the anterior enlargement is much more considerable than the posterior in birds which have great power of flight. In the Dove, of which the brain and whole extent of the spinal marrow are shown in Fig. 449, the enlargements (w and L) corresponding to the wings and legs respectively, and nearly of equal size. In Quadrupeds, we likewise find the relative size of these enlargements corresponding to that of fore and hind extremities. When the latter are absent, as in the *Cetacea*, the posterior dilatation does not exist.

The brain (B) may be regarded as an expansion of the anterior or upper end of the spinal marrow; and its magnitude,