

to a higher order of endowments, is placed in subordination to a class of functions, of which there exists no trace in vegetables, namely, those of the nervous system. By attentively watching the earliest dawn of organic formation, in the transparent gelatinous molecule, for example, which, with its three investing pellicles, constitutes the embryo of a bird, (for the eggs of this class of animals best admit of our following this interesting series of changes,) the first opaque object discoverable by the eye is a small dark line, called the primitive trace, formed on the surface of the outermost pellicle. Two ridges then arise, one on each side of this dark line;* and by the union of their edges, they soon form a canal, containing a deposit of semi-fluid matter, which, on acquiring greater consistence and opacity, discloses two slender and delicate threads, placed side by side, and parallel to one another, but separated by a certain space. These are the rudiments of the spinal cord, or the central organ of nervous power, on the endowments of which the whole character of the being to be formed depends. We may next discern a number of parallel equidistant dots, arranged in two rows, one on the outer side of each of the filaments already noticed: these are the rudiments of the vertebræ, parts which will afterwards be wanted for giving protection to the spinal marrow, and which soon form, for this purpose, a series of rings embracing that organ.†

The appearance of the elementary filaments of the spinal cord is soon followed by the development of its upper or anterior extremity, from which there arise three vesicles, each forming white tubercles; these are the foundations of the future brain. The tubercles are first arranged in pairs and in a longitudinal series, like those we have seen constituting the permanent form of the brain in the inferior fishes:

* The *plicæ primitivæ* of Pander; the *laminæ dorsales* of Baer. See a paper on embryology by Dr. Allan Thomson, in the Edin. New Phil. Journal for 1830 and 1831.

† These rings have, by speculative physiologists, been supposed to be analogous to those which form the skeleton of the Annelida.