SECTION IV.

UNITY OF PLAN IN OTHERWISE HIGHLY DIVERSIFIED TYPES.

Nothing is more striking throughout the animal and vegetable kingdoms than the unity of plan in the structure of the most diversified types. From pole to pole, in every longitude, mammalia, birds, reptiles, and fishes, exhibit one and the same plan of structure,[1] involving abstract conceptions of the highest order, far transcending the broadest generalizations of man, for it is only after the most laborious investigations man has arrived at an imperfect understanding of this plan. Other plans, equally wonderful, may be traced in Articulata, in Mollusks, in Radiata,[2] and in the various types of plants,[3] and yet this logical connection, these beautiful harmonies, this infinite diversity in unity are represented by some as the result of forces exhibiting no trace of intelligence, no power of thinking, no faculty of combination, no knowledge of time and space. If there is any thing which places man above all other beings in nature, it is precisely the circumstance that he possesses those noble attributes without which, in their most exalted excellence and perfection, not one of these

[1] With reference to this point, consult: OKEN, (Lor.,) Ueber die Bedeutung der Schädel-Knochen, Frankfort, 1807, 4to. (pamphlet.) — SPIX, (J. B.) Cephalogenesis, sive capitis ossei structura, formatio et significatio, Monachii, 1815, fol. — GEOFFROY ST. HILAIRE, (ET.,) Philosophie anatomique, Paris, 1818–1823, 2 vols. 8vo., and several papers in the Annal. des sc. nat., Annal. and Mém. du Muséum, etc. — CARUS, (C. G.,) Von den Ur-Theilen des Knochen- und Schalengerüstes, Leipzig, 1828, fol. — OWEN, (R.) On the Archetype and Homologies of the Vertebrate Skeleton, London, 1848, 8vo.

[2] OKEN, (LOR.,) Lehrbuch der Naturphilosophie, Jena, 1809–11, 3 vols. 8vo.; Engl. Elements of Physio-philosophy, Ray Society, London, 1847, 8vo. — CUVIER, (G.,) Sur un nouveau rapprochement à établir entre les classes qui composent le Règne Animal, Annales du Muséum, vol. xix., 1812. — SAVIGNY, (J. C.,) Mémoires sur les animaux sans vertèbres, Paris, 1816, 8vo. — BAER, (C. E. v.,) Ueber Entwickelungsgeschichte der Thiere, Königsberg, 1828, 4to. — LEUCKARDT, (R.,) Ueber die Morphologie und die Verwandtschaftsverhältnisse der wirbellosen Thiere, Braunschweig, 1848, 8vo. — AGASSIZ, (L.,) Twelve Lectures on Comparative Embryology, Boston, 1849, 8vo. — On Animal Morphology, Proc. Amer. Assoc. for the Adv. of Science, Boston, 1850, 8vo., p. 411. I would call particular attention to this paper, which has immediate reference to the subject of this chapter. — CARUS, (V.,) System der thierischen Morphologie, Leipzig, 1853, 1 vol. 8vo.

[3] GÖTHE, (J. W.,) Zur Naturwissenschaft überhaupt, besonders zur Morphologie, Stuttgardt, 1817–24, 2 vols. 8vo.; French, Oeuvres d'histoire naturelle, comprenant divers mémoires d'Anatomie comparée, de Botanique et de Géologie, traduits et annotés par Ch. Fr. Martins, Paris, 1837, 8vo.: atlas in fol. — DECANDOLLE, (A. P.,) Organographie végétale, Paris, 1827, 2 vols. 8vo. — BRAUN, (AL.,) Vergleichende Untersuchung über die Ordnung der Schuppen an den Tannenzapfen, als Einleitung zur Untersuchung der Blattstellung überhaupt, Act. Nov. Ac. Nat. Curios., vol. xv., 1829. — Das Individuum der Pflanze, Akad. d. Wiss., Berlin, 1853, 4to.