

SECTION VIII.

THE GRADATION OF STRUCTURE AMONG ANIMALS.

There is not only variety among animals and plants; they differ also as to their standing, their rank, their superiority or inferiority when compared to one another. But this rank is difficult to determine; for while, in some respects, all animals are equally perfect, as they perform completely the part assigned to them in the general economy of nature,¹ in other respects there are such striking differences between them, that their very agreement in certain features points at their superiority or inferiority in regard to others.

This being the case, the question first arises, Do all animals form one unbroken series from the lowest to the highest? Before the animal kingdom had been studied so closely as it has been of late, many able writers really believed that all animals formed but one simple continuous series, the gradation of which Bonnet has been particularly industrious in trying to ascertain.² At a later period, Lamarck³ has endeavored to show further, that in the complication of their structure, all the classes of the animal kingdom represent only successive degrees, and he is so thoroughly convinced that in his systematic arrangement classes constitute one gradual series, that he actually calls the classes "degrees of organization." DeBlainville⁴ has in the main followed in the steps of Lamarck, though he does not admit quite so simple a series, for he considers the Mollusks and Articulates as two diverging branches ascending from the Radiata, to converge again and unite in the Vertebrata. But since it is now known how the great branches of the animal kingdom may be circumscribed,⁵ notwithstanding a few doubtful points; since it is now known how

¹ EIRENBERG, (C. G.) Das Naturreich des Menschen, oder das Reich der willensfreien beseelten Naturkörper, in 29 Classen übersichtlich geordnet, Berlin, 1835, folio, (1 sheet).

² BONNET, (CH.) Considérations sur les corps organisés, Amsterdam, 1762, 2 vols. 8vo. — Contemplations de la Nature, Amsterdam, 1764-65, 2 vols. 8vo. — Palingénésie philosophique, Genève, 1769, 2 vols. 8vo.

³ LAMARCK, (J. B. DE.) Philosophie zoologique, Paris, 1809, 2 vols. 8vo.

⁴ BLAINVILLE, (H. D. DE.) De l'Organisation des Animaux, Paris, 1822, 1 vol. 8vo.

⁵ BLUMENBACH, (J. FR.) Handbuch der vergleichenden Anatomie, Göttingen, 1824, 1 vol. 8vo. — Engl. by W. LAWRENCE, London, 1827, 1 vol. 8vo. — CUVIER, (G.) Leçons d'Anatomie comparée, rec. et publ. par MM. Duméril et Duvernoy, Paris, 1800-1805, 5 vols. 8vo.; 2de édit., rev. par MM. F. G. Cuvier et Laurillard, Paris, 1836-39, 10 vols. 8vo. — CUVIER, (G.) Le Règne animal distribué d'après son organisation, Paris, 1817, 4 vols. 8vo.;