

sal is this association, not only at present but in all past geological ages, that I consider it as a sufficient reason to expect, that fishes will be found in those few fossiliferous beds of the Silurian System, in which thus far they have not yet been found.¹ Upon land, we find equally everywhere Vertebrata, Articulata, and Mollusks, but no Radiata, this whole branch being limited to the waters; but as far as terrestrial animals extend, we find representatives of the other three branches associated, as we find them all four in the sea. Classes have already a more limited range of distribution. Among Radiata, the Polypi, Acalephs, and Echinoderms² are not only all aquatic, they are all marine, with a single exception,³ the genus Hydra, which inhabits fresh waters. Among Mollusks,⁴ the Acephala are all aquatic, but partly marine and partly fluviatile, the Gasteropoda partly marine, partly fluviatile and partly terrestrial, while all Cephalopoda are marine. Among Articulata,⁵ the Worms are partly marine, partly fluviatile, and partly terrestrial, while many are internal

¹ See, above, Sect. 7.

² For the geographical distribution of Radiata, consult: DANA, (J. D.,) Zoophytes. United States Exploring Expedition, under the command of Ch. Wilkes, U. S. N., Philadelphia, 1846, 1 vol. 4to. Atlas fol.—MILNE-EDWARDS et HAIME, (JUL.,) Recherches sur les Polypiers, Ann. Sc. Nat. 3e sér. vol. 9-18, Paris, 1848-52, 8vo.—ESCHSCHOLTZ, (FR.,) System der Acalephen, Berlin, 1829, 4to. fig.—LESSON, (R. PR.,) Histoire naturelle des Zoophytes, Acalèphes, Paris, 1843, 1 vol. 8vo. fig.—KÖLLIKER, (A.,) Die Schwimmpolypen und Siphonophoren von Messina, Leipzig, 1853, 1 vol. fol. fig.—MÜLLER, (J.,) und TROSCHEL, (F. H.,) System der Asteriden, Braunschweig, 1842, 8vo. fig.—AGASSIZ, (L.,) Catalogue raisonné des familles, des genres et des espèces de la Classe des Echinodermes, Ann. des Sc. Nat. 3e sér. vol. 6-8, Paris, 1847, 8vo.

³ I need hardly say in this connection that the so-called fresh-water Polyps, Alcyonella, Plumatella, etc., are Bryozoa, and not true Polyps.

⁴ For the geographical distribution of Mollusks, consult: LAMARCK, (J. B. DE.,) Histoire naturelle des Animaux sans vertèbres, Paris, 1815-22, 7 vols. 8vo.; 2de édit. augmentée de notes par MM. DESHAYES and MILNE-EDWARDS, Paris, 1835-43, 10 vols. 8vo.—FERUSSAC, (J. B. L. DE.,) Histoire naturelle des Mollusques terrestres et fluviatiles. Paris, 1819 et suiv. 4to. fig. fol., continuée par DES-

HAYES.—FERUSSAC, (J. B. L. DE.,) et SANDER-RANG, (A.,) Histoire naturelle des Aplysiens, Paris, 1828, 4to. fig. fol.—FERUSSAC, (J. B. L. DE.,) et D'ORBIGNY, (A.,) Monographie des Céphalopodes cryptodibranches, Paris, 1834-43, fol.—MARTINI, (F. H. W.,) und CHEMNITZ, (J. H.,) Neues systematisches Conchylien-Kabinet, Nürnberg, 1769-95, 11 vols. 4to. fig.; new edit. and continuation by SCHÜBERT and A. WAGNER, completed by H. C. KÜSTER, Nürnberg, 11 vols. 4to. fig.—KIENER, (L. C.,) Spécies général et Iconographie des Coquilles vivantes, Paris, 1834, et suiv. 8vo. fig.—REEVE, (Lovell,) Conchologia Iconica; a Complete Repertory of Species of Shells, Pictorial and Descriptive, London, 1843, and foll., 4to. fig.—PFEIFFER, (L.,) Monographia Heliceorum viventium, Leipzig, 1847-48, 8vo.—PFEIFFER, (L.,) Monographia Pneumonoporum viventium, Cassel, 1852, 8vo., and all the special works on Conchology.

⁵ The mode of distribution of free or parasitic Worms, in different parts of the world and in different animals, may be ascertained from: GRUBE, (A. ED.,) Die Familien der Anneliden, Wiegman's Archiv, 1850. I mention this paper in preference to any other work, as it is the only complete list of Annelata; and though the localities are not given, the references may supply the deficiency.—RUDOLPHI, (K. A.,) Entozoorum sive Vermium intestinalium Historia naturalis, Amstelodami, 1808-10, 3 vols.