

fauna and every flora upon the surface of the globe. How great the diversity of animals and plants living together in the same region may be, can be ascertained by the perusal of special works upon the Zoölogy and Botany of different countries, or from special treatises upon the geographical distribution of animals and plants.¹ I need, therefore, not enter into further details upon this subject, especially since it is discussed more fully below.²

It might, perhaps, be urged, that animals living together in exceptional conditions, and exhibiting structural peculiarities apparently resulting from these conditions, such as the blind fish,³ the blind crawfish, and the blind insects of the Mammoth Cave in Kentucky, furnish uncontrovertible evidence of the immediate influence of those exceptional conditions upon the organs of vision. If this, however, were the case, how does it happen that that remarkable fish, the *Amblyopsis spelæus*, has only such remote affinities to other fishes? Or were, perhaps, the sum of influences at work to make that fish blind, capable also of devising such a combination of structural characters as that fish has in common with all other fishes, with those peculiarities which at the same time distinguish it? Does not, rather, the existence of a rudimentary eye discovered by Dr. J. Wyman in the blind fish show, that these animals, like all others, were created with all their peculiarities by the fiat of the Almighty, and this rudiment of eyes left them as a remembrance of the general plan of structure of the great type to which they belong? Or will, perhaps, some one of those naturalists who know so much better than the physicists what physical forces may produce, and that they may produce, and have produced every living being known, explain also to us why subterraneous caves in America produce blind fishes, blind crustacea, and blind insects, while in Europe they produce nearly blind reptiles? If there is no thought in the case, why is it, then, that this very reptile, the *Proteus anguinus*, forms, with a number of other reptiles living in North America and in Japan, one of

¹ SCHUMMARD, Die geographische Verbreitung der Thiere, 3 vols. 8vo. Wien, 1853. — SWAINSON, (W.) A Treatise on the Geography and Classification of Animals, London, 1835, 1 vol. 12mo. — ZIMMERMANN, (E. A. G.) Specimen Zoologie geographice, Quadrupedum domicilia et migrationes sistens, Lugduni-Batav., 1777, 1 vol. 4to. — HUMBOLDT, Essai sur la géographie des plantes, 4to., Paris, 1805; and Ansichten der Natur, 3d edit., 12mo., Stuttgart and Tübingen, 1849. — ROBERT BROWN, General Remarks on the Botany of Terra Australis, London, 1814. — SCHORW, Grundzüge einer allgemeinen Pflanzengeographie, 1 vol. 8vo., with atlas in fol., Berlin, 1823. — ALPH. DE CANDOLLE, Géographie botanique raisonnée, 2 vols. 8vo., Paris, 1855. References to special works may be found below, Sect. 9.

² See, below, Sect. 9.

³ WYMAN, (JEF.) Description of a Blind Fish, from a Cave in Kentucky, SILLIMAN'S JOUR., 1843, vol. 45, p. 94, and 1854, vol. 17, p. 258. — TELLEKAMPF, (TH. G.) Ueber den blinden Fisch der Mammothhöhle in Kentucky, in MÜLLER'S ARCHIV, 1844, p. 381. — TELLEKAMPF, (TH. G.) Beschreibung einiger neuer in der Mammothhöhle aufgefundenen Gattungen von Gliederthieren, WIEGMAN'S ARCHIV, 1844, vol. I, p. 318. — AGASSIZ, (L.) Observations on the Blind Fish of the Mammoth Cave, SILLIMAN'S JOURNAL, 1851, vol. 11, p. 127.