

considerations. It is also fully illustrated by a map of the Mammoth Cave in Kentucky, a number of wood cuts and a series of twenty-seven beautiful lithographs, nearly all of them drawn by the author himself. The work begins with a description of the Mammoth Cave and others in the neighbourhood, and gives lists of the various animals found within them; an account of the Wyandotte and other caves in Indiana, Clinton's Cave in Utah, and one in Colorado; a discussion of the geological age of the caves and their inhabitants, the mode of colonization and the source of their food-supply. The second chapter describes the vegetable life of the caves, which is naturally of the most meagre description. Then follows a systematic description and list of the invertebrate animals found in North American caves, among which spiders are the most numerous. Insects are represented by eight species of Thysanura, four of Orthoptera, two of Platyptera, ten of Coleoptera and nine of Diptera—a by no means extensive list, but one that includes some very curious and interesting forms. The beetles of the genus *Anophthalmus* are especially remarkable and attractive to the ordinary entomologist. Lists are also given of the European and North American cave animals, and of the blind, eyeless creatures which do not live in caves, and which, strange to say, almost equal in number their cavernous relatives. The next chapter gives a careful account of the anatomy of the brain and eyes (when partly developed) of certain blind Arthropods. The chief interest of the work culminates in the final chapter where the author discusses the origin of the cave species as bearing upon the theory of evolution. We have not space for any abstract of his views, which are well-deserving of study, but must refer the reader who desires fresh evidence on the subject of evolution to the work itself. We entirely agree with the author in his closing words: "In the case of too many naturalists the dogma or creed of natural selection has tied their hands, obscured their vision, and prevented their seeking by observation and experiment to discover, so far as human intelligence can do so, the tangible, genuine, efficient factors of organic evolution."—C. J. S. B.

**AMERICAN SPIDERS AND THEIR SPINNING WORK.** A natural history of the Orb-weaving Spiders of the United States, with special regard to their Industry and Habits. By Henry C. McCook, D.D. Vol. I. Published by the Author, Academy of Natural Sciences of Philadelphia, 1889. 4to., pp. 372.

The author of this sumptuous volume is so well known from his valuable and interesting works on the natural history of various kinds of ants, and his charming little book "The Tenants of an old Farm," that any productions of his pen are looked forward to with lively anticipation and keen interest. We are quite sure that no one of the subscribers to this, his latest and greatest work, has been in the least degree disappointed by this first volume of the promised three. Though spiders are not insects, we have no doubt that every entomologist, and indeed every lover of natural history in any of its departments, will deeply enjoy the perusal of this volume. We cannot give a better idea of its contents than by mentioning the subjects treated of. They are, first, the general classification, structure and spinning organs of spiders; the construction and armature of Orbweavers' snares; the characteristic forms and varieties of snares; unbeaded orbs and spring snares; the engineering and mechanical skill and intelligence of spiders; their modes of procuring food and habits in feeding; their fangs and poison bags; their modes of nest making and its development in various tribes; and finally the "genesis of snares." All these different subjects are fully illustrated with more than three hundred and fifty wood cuts. The second volume is to treat of the mating and maternal instincts, the life of the

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