

SECTION XVI.

RELATIONS BETWEEN ANIMALS AND PLANTS AND THE SURROUNDING WORLD.

Every animal and plant stands in certain definite relations to the surrounding world, some however, like the domestic animals and cultivated plants, being capable of adapting themselves to various conditions more readily than others; but even this pliability is a characteristic feature. These relations are highly important in a systematic point of view, and deserve the most careful attention, on the part of naturalists. Yet, the direction zoölogical studies have taken since comparative anatomy and embryology began to absorb almost entirely the attention of naturalists, has been very unfavorable to the investigation of the habits of animals, in which their relations to one another and to the conditions under which they live, are more especially exhibited. We have to go back to the authors of the preceding century,¹ for the most interesting accounts of the habits of animals, as among modern writers there are few who have devoted their chief attention to this subject.² So little, indeed, is its importance now appreciated, that the students of this branch of natural history are hardly acknowledged as peers by their fellow investigators, the anatomists and physiologists, or the systematic zoölogists. And yet, without a thorough knowledge of the habits of animals, it will never be possible to ascertain with any degree of precision the true limits of all those species which descriptive zoölogists have of late admitted with so much confidence in their works. And after all, what does it matter to science that thousands of species more or less, should be described and entered in our systems, if we know nothing about them? A very common defect of the works relating to the habits of animals has no doubt contributed to detract from their value and to turn the attention in other directions: their purely anecdotic character, or the circumstance that they are too frequently made the occasion for narrating personal adventures. Nevertheless, the importance of this

¹ REAUMUR, (R. ANT. DE.) Mémoires pour servir à l'histoire des Insectes, Paris, 1834-42, 6 vol. 4to. fig. — RÜSEL, (A. J.) Insectenbelustigungen, Nürnberg, 1746-61, 4 vols. 4to. fig. — BUFFON, (G. L. LECLERC DE,) Histoire naturelle générale et particulière, Paris, 1749, 44 vols. 4to. fig.

² AUDUBON, (J. J.) Ornithological Biography, or an Account of the Habits of the Birds of the United States of America, Edinburgh, 1831-19,

5 vols. 8vo. — KIRBY, (W.) and SPENCE, (W.) An Introduction to Entomology, London, 1818-26, 4 vols. 8vo. fig. — LENZ, (H. O.) Gemeinnützige Naturgeschichte, Gotha, 1835, 4 vols. 8vo. — RATZENBURG, (J. TH. CH.) Die Forst-Insekten, Berlin, 1837-44, 3 vols. 4to. fig., and supplement. — HARRIS, (T. W.) Report on the Insects injurious to Vegetation, Cambridge, 1841, 1 vol. 8vo.; the most important work on American Insects.