

which the second part has just been issued, has given us an excellent summary of Natterer's discoveries in this class of animals.

During his ten journeys in the Brazilian Empire (of which the first was commenced at Rio in November 1817, and the last terminated at Parà in September 1835) Natterer collected no less than 1179 examples of mammals, all most carefully prepared and accurately labelled, with notes of sex, colours of soft parts, date, and locality. These are referred by von Pelzeln to 205 species, 73 of which were new to science when first obtained by this unrivalled collector.

Natterer had planned a general work on the mammals of Brazil, in conjunction with Andreas Wagner. After the former's untimely death in 1843, Wagner published descriptions of the new genera and species in Wiegmann's *Archiv* and other periodicals, and introduced notices of them into his well-known supplement to Schreber's "Sangethiere." But we have now for the first time a complete systematic account of the whole of Natterer's collection with exact localities.

As might have been expected, the dense forest-region mostly traversed by Natterer was especially productive of Quadrumana—the American group of this order being exclusively arboreal in their habits. No less than 265 specimens of American monkeys were obtained, referable to 45 species, 4 of which were new to science. Of Chiroptera, Natterer procured examples of 48 species, of which at least 25 were first discovered by him. It should be also noted that the very singular structure of the stomach of the bloodsucking *Desmodi*, first made known by Prof. Huxley in 1865, was, as is testified by his note-books, previously discovered by Natterer in 1828!

The Carnivores are not so numerous in the Brazilian forests as the two preceding orders. Only 17 species were met with by Natterer, and only one of these (*Lutra solitaria*) was first made known to us by his specimens. The Rodents, on the other hand, are very abundant in species as in individuals in this part of South America. Not less than 50 species are represented in Natterer's series, whereof 24 were previously unknown to science.

The Ungulates are not abundant in South America, the true Ruminants being only represented by some peculiar forms of the deer family (Cervidæ). Of these Natterer obtained examples referable to 5 species. Besides the deer the only Ungulates met with were a tapir (*Tapirus americanus*) and the two well-known species of peccary.

Of the Sirenia, Natterer met with a manatee high up the stream of the Amazons, in the Rio Negro, Rio Branco, and Madeira, and maintains in his notes that the species which inhabits these far inland waters is quite different from the *Manatus americanus* of the South American coast. Natterer called it *Manatus inunguis*, from its nailless fingers, and sent home to the Imperial Cabinet of Vienna three complete specimens and several skulls. Of the Cetaceans, Natterer met with two species of dolphin in the Amazons and its tributaries. *Inia amazonica* was found in the Guaporé and Madeira, and two examples obtained, and a head of *Steno tucuxi* was brought home from Barra de Rio Negro. Interesting notes are given on the structure of both these little-known animals.

We now come to the Edentata, which, as is well known, are well represented in the Neotropical Region by the three families of sloths, armadillos, and anteaters. Of each of these peculiar forms Natterer obtained a fine series. Among the sloths the two-toed *Cholopus didactylus* was met with on the banks of the Rio Negro and its tributaries, while of the three-toed genus *Bradypus* examples were collected which are referred by Herr von Pelzeln to five species. Of armadillos, Natterer obtained examples of five species, including the giant *Cheloniscus gigas*; he likewise procured specimens of all the three known species of anteaters.

South America is also rich in the smaller opossums, which constitute the only family of extra-Australian Marsupials, and amongst them this assiduous collector reaped a rich harvest. Of 18 species of which he sent home specimens not less than 11 were previously unknown to science, and were mostly described by Andreas Wagner under Natterer's manuscript names. It may, indeed, be safely affirmed that no naturalist, unless our countryman, John Gould, in the case of his celebrated expedition to Australia, be a possible exception, has ever been equally successful with Johann Natterer in discoveries amongst the higher classes of animals, and it is probable that no future naturalist, however great be his industry, will ever surpass him in the number and variety of his discoveries or in the excellence of his specimens.

#### OUR BOOK SHELF

*A Treatise on Chemistry.* By H. E. Roscoe, F.R.S., and C. Schorlemmer, F.R.S., Professors of Chemistry in the Victoria University, Owens College, Manchester. Vol. III. Organic Chemistry, Part II. (London: Macmillan and Co., 1884.)

THE first part of this volume, treating of the hydrocarbons of the paraffin series, and the alcohols, ethers, bases, acids, &c., derived therefrom, has already been reviewed in this journal (vol. xxv. p. 50). The part now under consideration treats of a large number of compounds derived from the di-, tri-, tetra-, and hex-atomic alcohol-radicals, and from the monatomic alcohol-radicals of the series  $C_nH_{2n-2}$ ; also of the carbohydrates, sugar, starch, gum, cellulose, &c., and of the furfuryl, meconic acid, and uric acid derivatives. Many of these bodies, e.g. the carbohydrates, and oxalic, lactic, malic, tartaric, citric, and uric acids, are of great importance as constituents of vegetable and animal organisms, and for their applications in arts and manufactures. The extraction and purification of sugar, from the cane and from beet, are clearly and fully described in this volume, and illustrated by excellent woodcuts of the apparatus and machinery used; also the estimation of sugar in juices, &c., by the optical or polarimetric method. Descriptions and illustrations are also given of the manufacture of starch, of the uses of cellulose in its various forms, cotton, flax, hemp, &c., and of the manufacture of paper.

Altogether the part now under consideration forms a very valuable portion of Roscoe and Schorlemmer's "Treatise," and we hope that the publication of the remaining parts—which will treat of the benzene-derivatives or aromatic bodies, and of the proximate constituents of the animal organism—will not be long delayed. The portions already published afford a guarantee that the volume when finished will form one of the most complete treatises on Organic Chemistry yet published in the English language.

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