

OUR BOOK SHELF

OF the *Bulletin de la Société Impériale des Naturalistes de Moscou*, we have just received the first, second, and third parts for the year 1869. The greater part of the important papers in the second part are on Botanical subjects. They include a monographic revision, with tables of species, of the *Heliotropes* of the eastern Mediterranean region, in which seventy species are cited, and twenty-two of them described as new; a notice of the occurrence of the white Truffle (*Rhizogogon albus*) in the neighbourhood of Moscow; a note on *Empusa musca*; and a revision of the species of *Characium* found in the vicinity of Charkow. Colonel Motschoulsky continues his seemingly interminable "enumeration" of the new species of Coleoptera collected by him during his travels, leading us to wonder how any one man could have collected so many beetles, and, having got them, how he can write so much about them. This, however, is but a small instalment. Another entomological paper of more consequence is a monograph of the genus *Abacetus* by Baron Chandoir; M. Solsky has a notice of some beetles from Eastern Russia, and M. E. Ballion another on two species of sawflies. The most interesting zoological paper is on the anatomy and development of *Pedicellina* (Sars), by M. B. Uljanin, illustrated with two plates. In this paper our countryman, Mr. Gosse, is absurdly quoted as "Goose." The remaining papers are by Dr. Ferd. Müller on the determination of the magnetic inclination, and by M. R. Hermann on the composition of Fergusonite. The last part consists of a series of *éloges* on Alexander Von Humboldt, read at a centenary celebration of the great German philosopher. These papers, by different authors, treat of Humboldt from various points of view: as a man and as a naturalist; in his relations to Russia; as an investigator in the domain of electrophysiology; as a botanist; as an investigator of physical geography and climatology. As they are all in Russian we fear these memoirs will find few readers in this country. A German translation of the first of these will, however, be found in the first part of the *Bulletin*, which includes a variety of papers on Natural History subjects. An important geological paper is one by Prof. Trautschold, on secular elevations and sinkings of the earth's surface. Dr. D. Zernoff's memoir on the olfactory organs in the Cephalopoda, which is illustrated with two plates, is a valuable contribution to the anatomy of the Mollusca. In an important memoir, also accompanied by two plates, M. J. Borsenkow describes the developmental history of the ovary and egg in the common fowl. For the botanist we have a continuation of M. L. Gruner's catalogue of plants collected on the Dnieper and the lower part of the Kouka; and a notice, by M. Alexander Becker, of Sarepta, of a journey to Debent, which also, as usual, includes entomological notices. For the entomologist finally we have a catalogue of the Coleoptera of the vicinity of Jaroslaw, by M. von Bell; remarks upon some species as cited in Harold's great catalogue of Beetles, by M. E. Ballion; and, from the inexhaustible Motschoulsky, a further instalment of descriptions of new species of Coleoptera.

Für Baum und Wald. Eine Schutzschrift an Fachmänner und Laien gerichtet. Von Dr. M. J. Schleiden. (Leipzig: Engelmann. London: Williams and Norgate.)

A TREATISE on arboriculture, in which, mingled with some extravagant sentimentalism, are many useful hints as to the growth of trees and forests. There can be no doubt that within the last 2,000 years a great amelioration has taken place in the climate of Central and Northern Europe. Varro speaks of the climate of the south of France as unfavourable to the growth of the vine or olive. Virgil describes the Crimea as subject to the rigours of an

eight-months' winter; Diodorus Siculus narrates how whole armies crossed the frozen Rhine, Rhone, and Danube; and there is unanimity of testimony among other writers to the same effect. Dr. Schleiden attributes this change in the climate, to a great extent, to the destruction of forests when the country became more thickly peopled, combined, no doubt, with improved drainage. He points out, however, that disforestation may be carried too far, until it becomes positively injurious instead of beneficial. The judicious mean he believes to have been arrived at in England and Ireland, while in some parts of Continental Europe, especially Switzerland and the Tyrol, the almost entire destruction of the timber has caused a diminution of the rainfall to an extent very prejudicial to the crops. Another result in mountainous countries has been the constant accumulation of rain-clouds around the mountain-peaks, and consequent destructive floods and devastating avalanches. In confirmation of Dr. Schleiden's views, it may be stated that in some parts of India the drought has been so severe for several successive years since the destruction of the forests, that the Government has ordered the planting of an enormous number of trees.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his Correspondents. No notice is taken of anonymous communications.]

Twelve-wired Bird of Paradise

It may be interesting to many of your readers to know that a specimen of the rare and beautiful twelve-wired Paradise Bird (*Seleucidés alba*) is now alive in the Royal Zoological Gardens at Florence. Signor G. E. Cerruti, who has recently returned from an official tour in the Moluccas and New Guinea, writes me that he obtained it from the Rajah of Salwatty, and that although very wild at first, it soon became tame and quiet; and that he had very little trouble in bringing it home. Here is another proof that these wonderful birds can be brought to Europe without difficulty, and once here, with proper care and ample space, there is little doubt they would be long-lived.

ALFRED R. WALLACE

Spontaneous Generation

DR. H. C. BASTIAN, who has recently called attention to the nature of the evidence before scientific men in favour of the theory of so-called spontaneous generation, has supplemented it by fresh experiments of his own. The dilemma in which the opponents of this doctrine are now placed is that they must either admit it, or else allow that a temperature of 150° C. maintained for four hours, and applied by means of liquid, is incapable of killing the germs of infusoria. Many, doubtless, of these opponents will courageously mount this horn of the dilemma, and make the requisite enlargement of their ideas on the subject of vital resistance to change. There are, however, other difficulties in the way. For instance, great difficulties are involved in the assumption that the atmosphere constitutes a storehouse of germs of all kinds ready to burst out into life on the occurrence of suitable conditions.

However small these germs may be, still they must weigh something. And there must be very many of them, seeing that there must be an immense number of kinds of germs, if a volume of air is to supply to any given infusion precisely the right kinds of germs suitable to the conditions provided by the infusion.

Now chemists are in possession of data showing that the possible amount of organic nitrogenous matter in common clear water and common good air is remarkably small—so small, indeed, that the question may fairly be asked—Is it large enough to admit of the requisite number of germs, the existence of which the vitalists assume in water and air?

By the employment of our ammonia method, Chapman, Smith, and myself have shown that the organic ammonia from a kilogramme of good filtered water often falls as low as 0.05 milligramme, and Dr. Angus Smith has shown that a kilogramme