

rank engaged in the extension of natural knowledge. The present volume contains reports upon scientific work, as, for example, those by Dr. Langley upon observations of the solar eclipse of May 28, 1900, the new spectrum, and the Langley aërodrome; scientific articles from magazines, as Sir Norman Lockyer's account of the progress of astronomy during the nineteenth century, Prince Kropotkin's article on unsuspected radiations, and the late Dr. J. Fiske's reminiscences of Huxley; presidential addresses, as Prof. W. J. Sollas's address on evolutionary geology, delivered before the British Association in 1900, and Dr. G. M. Sternberg's address on malaria; several papers read before scientific societies, as one by Prof. V. B. Lewes on incandescent mantles, and Mr. E. S. Grogan's paper, read before the Royal Geographical Society, on his journey through Africa from the Cape to Cairo; original articles on Chinese folklore, and the restoration of extinct animals, and several translations, among which we notice a paper by Dr. Janssen on the progress of aeronautics, and one by Dr. F. Delitzsch on discoveries in Mesopotamia. In addition to these articles there are a number of others dealing with the progress of various branches of science during the nineteenth century. We are grateful to Dr. Langley for collecting these contributions to scientific literature from many sources and rendering them easy of access in his annual anthology.

THE additions to the Zoological Society's Gardens during the past week include a Bonnet Monkey (*Macacus sinicus*) from India, presented by Mr. L. E. Carmalt; a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mr. W. H. Sheridan; a Black-eared Marmoset (*Hapale penicillata*) from South-east Brazil, presented by Mrs. Augusta Ryland; a Common Squirrel (*Sciurus vulgaris*), British, presented by Mr. R. B. Hatfield; a Red-faced Spider Monkey (*Ateles paniscus*) from Guiana, a Barnard's Parrakeet (*Platyercus barnardii*) from South Australia, five Conical Eryx (*Eryx conicus*), a Long-snouted Snake (*Dryophis mycterizans*), a Hamilton's Terrapin (*Damonia hamiltoni*) from India, two Black-headed Terrapins (*Damonia reevesi unicolor*) from China, deposited; two Coscoroba Swans (*Coscoroba candida*) from Antarctic America, purchased.

OUR ASTRONOMICAL COLUMN.

THE ANNULAR ECLIPSE OF THE SUN, NOVEMBER 11, 1901.—The successful observation of this eclipse by M. A. de la Baume Pluvinel at Cairo was announced by telegram some time ago, and his complete report of the operations appears in the *Comptes rendus* (vol. cxxxiii, pp. 1180-1185). Although the results were in general successful, the conditions were somewhat unfavourable owing to the low altitude, about 15', of the sun at mid-eclipse.

Three lines of investigation were attempted.

(1) The examination of the solar spectrum at grazing incidence on the moon's surface. This was done with a powerful grating spectrograph, having an image of the sun about 14 mm. diameter on the slit plate. No variation in the various groups of lines examined could be detected, and it was concluded that this rendered the existence of any lunar atmosphere extremely improbable.

(2) Photographs of the crescents presented at second and third contacts were obtained in the hope of detecting any difference in constitution between the chromosphere and the outer photospheric layers. These were taken with a small prism spectrograph, having an condenser, collimator, and camera objectives all about 0.60 metre focal length. A considerable number of arcs were obtained, and a list is given showing their wavelengths in comparison with Young's chromospheric lines. The main series of arcs corresponded to a chromospheric layer about 20" of arc in height, but beside these there appeared a series of more feeble images corresponding to a layer some 40" high. The

absence of the hydrogen series so conspicuous in the chromospheric spectrum is attributed to the mutual action of chromospheric radiation and photospheric absorption.

(3) Attempts to photograph the corona in presence of sunlight. This had appeared feasible in consequence of the impressions obtained several seconds after totality during the eclipse of January 1898, in India. For this work he employed a Cooke triple photo-visual objective of 1.5 metres focal length. This instrument and the image lenses of the two spectrographs were fed by 3 plane mirrors mounted on a single cœlost.

As the diameters of sun and moon differed by 1' 24" there were about 16/100ths of the sun's disc still visible at mid-eclipse. Two photographs, with 3 seconds and 10 seconds exposure, were obtained, but the aureole shown is not thought to be truly coronal.

Attempts were also made to detect the corona by utilising the action of the calorific rays on phosphorescent substances, but with negative results.

THE MAMMALS OF NORTH AMERICA.

AMONGST the recently issued publications of the Field-Columbian Museum of Chicago we find a list of the land and sea mammals of North America, north of Mexico, prepared by Mr. D. G. Elliot, curator of the department of mammals in that institution. The list is stated to contain the names of all the forms of North American mammals found on land or in the adjacent seas which had been described up to the date of publication (June 10, 1901), at any rate all those that "under the most lenient treatment are entitled to any sort of consideration." This most useful catalogue serves to show us very plainly the great activity of the American zoologists in this particular department of their science during recent years. In the late Prof. Baird's work on North American mammals, published in 1857, only 220 terrestrial species of this class (not including the bats) were recognised as occurring in the northern portion of the American continent, besides thirty-six others which were considered as of doubtful authenticity. Mr. Elliot's list contains the names of 628 species besides 368 subspecies, so that, if we take it as correct, the number of recognisable forms of North American mammals has been enormously increased of late years. It will be interesting to ascertain in what groups of the class of mammals this great augmentation has mainly taken place. This is shown in the following tabular statement:—

	Elliot, 1901			Baird, 1857
	Sp.	Subsp.	Total	Sp.
Order i. Marsupialia	2	1	3	2
" ii. Edentata	1	—	1	1
" iii. Sirenia	2	—	2	—
" iv. Cetacea	46	2	48	—
" v. Ungulata	25	11	36	15
" vi. Rodentia	380	255	635	130
" vii. Carnivora	88	62	150	46
" viii. Pinnipedia	14	—	14	—
" ix. Insectivora	47	22	69	26
" x. Chiroptera	23	15	38	—
	628	368	996	220

In considering these figures it must be remarked that as Baird did not include the three groups of marine mammals or the Chiroptera in the scope of his work no complete comparison can be made. But it will be obvious, on a glance at the comparative tables, that it is the smaller mammals, the Rodents and Insectivores, that have so greatly increased in multitude, according to the present fashion of dealing with them. The Rodents, of which Baird only recognised 130 in North America, are now supposed to number 380 species, besides 255 subspecies,