

the unsettled state of the weather in the latter part of the past year.

The number of animals in the Society's Gardens on the 31st of December last was 2,473, of which 902 were mammals, 1,132 birds and 439 reptiles and batrachians. Amongst the additions made during the past year 18 were specially commented upon as of remarkable interest, and in most cases new to the Society's collections. Amongst these were a young male Manatee from the Upper Amazons, a young male Klipspringer from northeast Africa, a young female Gorilla from French Congoland, a pair of lettered Aracaris from Pará, a young Brazza's Monkey from French Congoland, a Loder's Gazelle from the Western Desert of Egypt, three Ivory Gulls from Spitzbergen and three Franklin's Gulls from America. A serious loss was occasioned to the Society's menagerie by the sudden death, in March last, of the male Indian Elephant (Jung Pasha), deposited in the Gardens by H. R. H. The Prince of Wales on his return from India in 1876, and for the past twenty years well known to all visitors to the Gardens.

A vote of thanks to the Council for their report was then moved by Dr. Henry Woodward, F.R.S., seconded by Lord Medway, and carried unanimously.

The report having been adopted, the meeting proceeded to elect the new members of Council and the officers for the ensuing year. The usual ballot having been taken, it was announced that William Bateson, Esq., F.R.S., Col. John Biddulph, Dr. Albert Günther, F.R.S., Osbert Salvin, Esq., F.R.S., and Joseph Travers Smith, Esq., had been elected into the Council in the place of the retiring members, and that Sir William H. Flower, K.C.B., F.R.S., had been re-elected President; Charles Drummond, Esq., Treasurer, and Philip Lutley Sclater, M.A., Ph.D., F.R.S., Secretary to the Society, for the ensuing year.

#### CURRENT NOTES ON ANTHROPOLOGY.

##### PRIMITIVE SYMBOLIC DECORATION.

Two articles have lately appeared which are worth a comparison. The one is by Mr. C. C. Willoughby, of the Peabody Museum, Cambridge, in the *Journal of American Folk-lore* for March, on the decorations upon pottery from the Mississippi valley. It is a recasting of that read by himself and Professor Putnam before the American Association in 1895. He points out a variety of simple designs which he identifies as 'cosmic symbols,' 'sun symbols,' others for the winds, the clouds, the bird, the band, etc. Of course, the svastika, the triskeles and the cross come in as other 'symbols.'

This is one view to take of the aim of primitive decoration, and it is now in the ascendant in the United States. But in France they think otherwise. In the *Bulletin of the Paris Anthropological Society* (1896, Fasc. 6) M. Regnault has an article on the beginnings of ornamental art among primitive peoples, in which he explains such figures as the natural result of crossing lines, joining angles, repeating designs, connecting curves, etc., all this in the most simple manner and without any occult or mystic intent whatever. They were mere decorative sketches, 'only this and nothing more.'

It is easy to read into barbaric scratches the thoughts of later times, and we must acknowledge that something more besides the figure itself is needed to prove its symbolic sense.

##### MAN'S SPEECH TO BRUTES.

A PRIMITIVE myth asserts that in the good old times men and brutes conversed together understandingly. How limited their intercourse by speech now is may be learned from Dr. H. Carrington Bolton's paper in the *American Anthropologist*, 'The language used in talking to Domestic Animals.'

He has collected numerous specimens from various countries, and reaches some interesting conclusions. Thus it appears that the terms used in calling animals are generally corruptions of their names, and usually the expressions addressed to them are from the language of the place. Certain inarticulate sounds, as the click, used with us to start horses, and the chirp, uttered to hasten their pace, are in vogue in remote lands also, as in India, but with a reverse meaning. Even between France and Switzerland such examples of counter-sense are quoted. This illustrates that the adoption of these sounds is purely conventional, and the only curious feature remains that the same sound is repeated in widely different localities. There is also evident an unconscious attempt on the part of man to lower his language to the comprehension of the brute by abbreviations.

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#### ASTROPHYSICAL NOTES.

THE Harvard Observatory makes an important contribution to astrophysics in Part I. (pp. 1-128) of Vol. XXVIII. of its *Annals*. This contains a discussion, by Miss A. C. Maury, under the direction of Professor E. C. Pickering, of the spectra of the brighter stars photographed with the eleven-inch Draper telescope. This laborious investigation has involved the examination of nearly five thousand photographs of 681 stars north of  $30^\circ$  south declination, and has been in progress for several years. From one to four prisms were placed before the object-glass, and the length of the photographed spectrum, between the hydrogen lines  $\beta$  and  $\epsilon$ , was from 2 to 8 cm. accordingly.

A scheme of classification was outlined by Miss Maury, containing 22 groups of spectra, with three 'divisions,' *a*, *b* and *c*, into which each group might be subdivided

according to the appearance of the lines present in it. The groups are presumed to represent in some degree successive stages of stellar development, I to V containing spectra of the Orion type (Vogel's II *b*), while groups VII to XI, XIII to XVI, and XVII to XX respectively include Secchi's first, second and third types. VI and XII are considered as transitional groups. Group XXI is Secchi's type IV, and XXII is Pickering's fifth type—bright-line stars and planetary nebulae. Typical stars of each group are cited, and about forty pages are given to a detailed description of the characteristics of each group. The desirability of the introduction of a new classification of stellar spectra may be open to question, but there can be no doubt that the results of minute study of spectra must be expressed in some systematic way, since gradations of spectra are perfectly evident. Miss Maury is quite justified in thus systematizing her work, as she has done without undue reference to theories of development. It is, however, hardly to be expected that this classification will be generally adopted. The time has not yet come for general agreement on stellar classification. Further laboratory researches and theoretical investigations upon luminescence must be awaited before stellar spectra can be interpreted.

Separate chapters are devoted to the Orion lines;\* to the solar lines between  $\lambda$  3686 and  $\lambda$  5896 with their occurrence and intensity in the stars, to the lines in stars of division *c*, and to the relative intensities of lines. Chapter VIII. contains a table of the stars in their order by groups and subgroups or divisions, followed by several pages of valuable notes on individual stars. Chapter IX. is a general catalogue of the stars investigated, in order

\*The identification of these lines with those of helium was discovered too late for discussion until the close of the volume.