

OUR ASTRONOMICAL COLUMN.

THE USE OF A PLANE GRATING IN STELLAR SPECTROSCOPY.—In No. 5, vol. vi., of the Journal of the Royal Astronomical Society (Canada) there is an interesting note describing some preliminary tests, made at the Dominion Observatory, Ottawa, of a plane grating used as the dispersion piece of a stellar spectrograph. The grating used is one ruled by Dr. J. A. Anderson, who is now regularly ruling excellent gratings at the Johns Hopkins University, and has a ruled surface of $2\frac{1}{2} \times 3\frac{1}{2}$ in., with 15,000 lines to the inch. It was employed in the Littrow form of spectrograph, giving a linear dispersion of 17.5 Angströms per millimetre, and gave excellent definition over a nearly flat field extending from $\lambda 4800$ to $\lambda 3500$. The photographs secured show a much more uniform intensity over a wide range than do those taken with a three-prism spectrograph, and for this reason will be especially useful. In the red, where the prismatic spectrum is so compressed, and in the violet and ultra-violet, where it suffers considerable absorption, the grating spectrograph will prove very advantageous, and the results of the further experiments to be made will be awaited with interest.

OBSERVATIONS OF THE ZODIACAL LIGHT.—The February number of *L'Astronomie* contains two striking drawings of the zodiacal light as seen by Lieut.-Col. Pachine at Essentouki (Caucasus) on January 28, 1911. This observer has seen the phenomena many times, and in various countries, but had never before seen it so bright. At 6h. 30m. p.m., the base of the luminosity extended along the western horizon for a distance of some 30° from α Piscis Austr. towards Aquila, and the cone reached upwards to a point a little to the south of α Arietis, the brightness from the base to γ Pegasi being more than twice that of the Milky Way in its brightest parts. Many curious fluctuations took place, and at 9h. 40m. the apex of the cone enveloped the Pleiades. The colour of the light generally was from a pale-yellow to a bluish-grey.

ASTRONOMICAL TIME-INSTALLATIONS.—A brochure published by the Royal Observatory of Belgium contains a very detailed and well-illustrated account of the installations employed for the time-service in that observatory, written by MM. Philippot and Delporte. The various means employed to secure the necessary constancy of pressure and temperature in the underground chamber containing the installation are very interesting, as are also the various devices for automatic regulation and registration, and it would appear that the Belgian authorities have established an ideal installation for their time-service.

Amateur astronomers will find a useful note, by M. Jonckheere, in the January number of *L'Astronomie*, describing a device he employs for keeping his sidereal clock at constant temperature. The clock is placed in a double case, and should a change of temperature occur, a current is sent automatically through a heating circuit (an incandescent lamp bulb) until equilibrium is restored. With this apparatus M. Jonckheer keeps the temperature constant within 0.25° C.

ORNITHOLOGICAL NOTES.

IN the fifth part (vol. i.) of *The Austral Avian Record* the editor executes a complete *volte face* in the matter of the classification of Australian birds. Hitherto he has used generic terms in a wide and comprehensive sense; he now employs them in a much more restricted signification, and accordingly

proposes no fewer than forty-eight new genera in this issue. Whether such changes be expedient or not (there is no right or wrong in the matter), they have the great disadvantage of rendering standard works, like Sharpe's "Hand-list of Birds," more or less obsolete.

In *The Zoologist* for December, 1912, Mr. F. J. Stubbs gives reasons for regarding migration as a cosmical function, which plays an important part in regulating the present balance of life on the globe. The prevalence of continuous sunlight during the Arctic summer and its absence in winter is regarded as the primary controlling factor of the phenomenon.

Bird-migration in Lindisfarne forms the subject of an editorial article in *British Birds* for December, 1912. Rather more than a hundred kinds of birds were observed on the island, of which not more than thirty seemed to be resident. Although no great inrush of birds was noticed, migration was going on during twenty-six out of the forty days of the visit. Bird-life in the south-west of Ireland and the recovery of birds marked in 1912 form two of the chief items in the January issue of the same journal.

Bird-marking in the Netherlands forms the subject of an article by Dr. E. D. Van Oort in *Notes Leyden Mus.*, vol. xxxiv., p. 243. The number of birds marked in 1912 was considerably greater than in the preceding year. The record includes such birds of both years as have been recovered up to date, but the returns from correspondents were not complete when the article was written.

In the course of a narrative of a trip through South America, including a visit to Tierra del Fuego, which deals chiefly with ornithology, Mr. F. W. Blaauw (*Notes Leyden Mus.*, vol. xxxv., No. 1) describes the nestling plumage of the so-called Coscoroba swan (*Coscoroba candida*), and its bearing on the affinities of the genus. The colour-pattern is intermediate between those of sheldrake and tree-duck chicks, the head-markings approximating to, and the body-markings being almost identical with, those of the latter. This tends in some degree to confirm the author's view that Coscorobas are practically overgrown tree-ducks.

It is satisfactory to learn, from a report by Mr. G. Bolam on the natural history of Hornsea Mere, published in the January number of *The Naturalist*, that the local birds are most efficiently protected by the keeper, who has occupied his post for thirty-two years. It may be noted that in 1911 fourteen bearded tits were introduced, some of which have nested and reared young.

In a long article on the "Hand-list of British Birds," by Dr. Hartert and others, published by Messrs. Witherby, *The Field* of March 8 strongly condemns the great changes in familiar nomenclature which form one of the most striking features in that work, referring especially to the inconvenience caused by transferring names long associated with well-known species to others. At the conclusion of the article it is suggested that those "who may be in doubt whether to accept or reject the list now under consideration will do well to await the appearance of a new edition of the B.O.U. List, which, we understand, is in active preparation. The simplest way out of the difficulty, as it seems to us, is to ignore the new list."

Last year schedules were distributed throughout the country with the object of obtaining data with regard to the alleged decrease during the last few years in the numbers of certain migratory species which regularly visit the British Islands. Although the returns are not so full or so numerous as is desirable, they afford a considerable amount of in-

formation in respect to England, which is summarised by Mr. M. Vaughan in the March number of *British Birds*. As the result of the inquiry it seems practically certain that a decrease—and this not merely local—has taken place in the case of several species, notably the whitethroat, the redstart, the marten, the swallow, and the wryneck. No attempt is made to explain the diminution in numbers, which we have heard attributed, at least in the case of some species, to shooting and netting on the Continent.

In the February number of *The Zoologist* Mr. J. M. Dewar records further observations on the manner in which oyster-catchers open mussels and other bivalves. Mussels seldom open their shells wide enough to enable the bird to introduce its beak, except by the way of the gap for the byssus, and when this is not accessible, the oyster-catcher resorts to careful tapping, which causes the mollusc to rotate one valve on the other, and thus afford an entrance for the beak. Small mussels are frequently hammered to pieces by repeated blows with the beak.

Nos. 6 and 7 of *The Austral Avian Record* are devoted to a list of the species of Australian birds named by John Gould, and the present location of the type specimens, drawn up by Messrs. Witmer Stone and Mathews. The Gould Australian collection was sold in 1847 to Dr. T. B. (not J., as has been stated) Wilson, of Philadelphia. The type specimens are for the most part in the museum of the Philadelphia Academy; although the greater part of those of species named by Gould subsequently to the 1847 sale are in the British Museum. Gould named 426 or 427 Australian birds (both numbers are given at the end of the list) of which 341 stand, either as species or subspecies. The list will be valuable to systematic ornithologists.

In his presidential address to the Royal Australasian Ornithologists' Union, as reported in *The Emu* of January, Mr. J. M. Mellor emphasised the necessity of continued bird protection and the working of the present Act. A serious defect in this is the opportunity afforded by merely partial protection for a heavy destruction of certain species during the Christmas holidays.

In *Science* of February 27, Dr. R. W. Shufeldt announces a forthcoming memoir on the Pleistocene avifauna of the Oregon desert, in which three extinct species will be described. R. L.

FORTHCOMING BOOKS OF SCIENCE.

AGRICULTURE.

Crosby Lockwood and Son.—Agricultural Arithmetic: An Elementary Handbook for Farmers and Farm Students, containing Important Data and Calculations bearing upon the Science and Practice of Agriculture, with Special Reference to Dairying, J. C. Newsham and T. V. Philpott. *John Murray*.—A Pilgrimage of British Farming, A. D. Hall, illustrated. *T. Fisher Unwin*.—Mozambique: its Agricultural Development, R. N. Lyne, illustrated. *John Wiley and Sons (New York)*.—Agricultural Drafting, C. B. Howe; Exercises on Dairying, Prof. C. Larsen.

ANTHROPOLOGY.

John Bale, Sons, and Danielsson, Ltd.—Some Austral-African Notes and Anecdotes, Major A. J. N. Tremearne, illustrated. *The Cambridge University Press*.—Folk Song and Dance, Miss Neal and F. Kidson; Brands Used by the Chief Camel-owning Tribes of Kordofán: a Supplement to the Tribes of Northern and Central Kordofán, H. A. MacMichael, illustrated. *W. Heinemann*.—Pedagogy

Anthropology, S. M. Montessori. *G. Fischer (Jena)*.—Die Anthropologie in ihren Beziehungen zur Ethnologie und Prähistorie, Prof. O. Schlaginhaufen. *Macmillan and Co., Ltd.*—The Golden Bough: a Study in Magic and Religion, Prof. J. G. Frazer, third edition, revised and enlarged; Part vi., The Scapegoat; Part vii., Balder the Beautiful; The Belief in Immortality and the Worship of the Dead, Prof. J. G. Frazer: Vol. i., The Belief among the Aborigines of Australia, the Torres Straits Islands, New Guinea, and Melanesia, the Gifford Lectures, St. Andrews, 1911-12. *Methuen and Co., Ltd.*—The Ancient History of the Near East from the Earliest Period to the Persian Invasion of Greece, H. R. Hall, illustrated. *Oliver and Boyd (Edinburgh)*.—The Antiquity of Man in Europe, being the Munro Lectures on Anthropology and Prehistoric Archaeology in connection with the University of Edinburgh.

BIOLOGY.

D. Appleton and Co.—Colour Key to North American Birds, F. M. Chapman, new edition, illustrated. *I. and C. Black*.—First Principles of Evolution, Dr. S. Herbert, illustrated; The Naturalist at the Sea Shore, R. Elmhurst, illustrated; Reptiles and Amphibians, A. N. Simpson, illustrated; Pond Life, Rev. C. A. Hall, illustrated; British Moths, A. M. Stewart, illustrated; British Beetles, Rev. C. A. Hall, illustrated. *W. Blackwood and Sons*.—Text-Book of Agricultural Zoology, F. V. Theobald, new edition. *The Cambridge University Press*.—Vegetation of the Peak District, Dr. C. E. Moss; The Land of the Blue Poppy; Wanderings of a Botanist in Tibet, F. K. Ward, illustrated; Bees and Wasps, O. H. Latter; The Wanderings of Animals, Dr. H. Gadow. *Cassell and Co., Ltd.*—Flowerless Plants: How and Where they Grow, S. L. Bastin, illustrated; Botany For All, H. J. Jeffery, illustrated; Baby Birds at Home, R. Kearton, illustrated; Garden Work for Every Day, H. H. Thomas, illustrated; Cassell's Dictionary of Practical Gardening, edited by W. P. Wright, illustrated. *J. M. Dent and Sons, Ltd.*—The Geography of Plants, G. S. Boulger, Part i., A comprehensive history of the scientific study of the geographical distribution of plants, as far as possible in the actual words of the successive workers; Part ii., A reasoned exposition of the present principles of the science and phytogeography (including ecology); Part iii., A description of the vegetation of the different botanical regions and provinces of the globe; The Sea-shore I know, W. P. Westell and H. E. Turner, illustrated. *Duckworth and Co.*—Life and Evolution, F. W. Headley, new edition, illustrated. *G. Fischer (Jena)*.—Die Fauna Südwest-Australiens, edited by Drs. W. Michaelsen and R. Hartmeyer, Band iv., Lieferung 1-4, illustrated; Metamorphose der Muraenoiden, Prof. B. Grassi, illustrated; Handbuch der Entomologie, edited by Prof. C. Schröder, Band i., Lieferung 2 and 3, illustrated; Moderne Probleme der Biologie, Prof. C. S. Minot, illustrated; Einführung in die botanische Mikrotechnik, H. Sieben, illustrated. *R. Friedländer und Sohn (Berlin)*.—Das Tierreich, edited by Prof. F. E. Schulze, Turbellaria II.: Rhabdocoela and Allocoela, L. v. Graff; Pteropoda, T. T. Tesch; Amphibia, F. Nieden; Cumaoca, T. R. Stebbing. *Hodder and Stoughton*.—Every Man His Own Gardener, J. Halsham, new edition, illustrated; Every Man's Book of Garden Difficulties, W. F. Rowle, new edition, illustrated; Every Man's Book of Garden Flowers, J. Halsham, illustrated; The "Open-air" Series: Field and Lane, River and Pond, Sea and Cliff, Hill