

SUN-SPOT ACTIVITY.—There has recently been some slight suggestion of a recrudescence of sun-spot activity, although one scarcely expects the actual minimum to have passed yet.

In the earlier part of the year very few spots were seen, and those that did appear were very small and seemed to be very shallow, for they generally filled up and disappeared while the region was still on the visible hemisphere. One exception was a fairly large black circular spot, which endured from June 17 to 28, and on Saturday last there appeared a small group, containing two intense nuclei, just south of the sun's centre, on the central meridian; this is now a fair-sized group, and should be seen near the western limb about October 11 or 12.

THE SYSTEMATIC MOTIONS OF SUN-SPOTS.—Acting on a suggestion conveyed to him by the statement that "the rotation periods given by different spots in the same zone of latitude differ more widely than do the mean rotation periods for different zones of latitude," given in Mr. and Mrs. Maunder's paper on the solar rotation period, Prof. Hirayama has analysed the motions of spots given in the Greenwich, Carrington's, and Spörer's publications, and finds that apparently there are two drifts of sun-spots exhibiting distinctive systematic motions. The angular velocity of drift i. is represented by $\xi = 14^{\circ}37' - 2^{\circ}97' \sin^2 \lambda$ (where λ = the heliographic latitude), and of drift ii. by $\xi = 14^{\circ}69' - 2^{\circ}65' \sin^2 \lambda$; the former agrees fairly well with the mean values found by other investigators, while the latter exceeds it, showing a mean rate about $0^{\circ}35'$ greater than that indicated by drift i. For the lower latitudes, the rotation period proper to drift ii. agrees fairly well with that found spectroscopically by Messrs. Storey and Wilson, and Prof. Hirayama suggests that possibly certain groups of spots, by a proper motion of their own, come to the same level as the chromospheric layer investigated spectroscopically, and attain its angular velocity. He also suggests that this idea of two drifts may explain the distribution of sun-spots with different rotation periods in any particular zone of latitude. The data considered by him show that there are about twice as many sun-spots collected in drift i. as in drift ii. (Journal of the College of Science, Imperial University, Tokio, vol. xxxii., No. 7.)

THE PARALLAX OF NOVA LACERTÆ.—In No. 52 of the *Mitteilungen der Nikolai-Hauptsternwarte zu Pulkowo*, Herr Balanowsky discusses the attempt made at Pulkowa to determine the parallax and proper motion of Nova Lacertæ. Sixteen plates were taken between January 4, 1911, and February 19, 1912, but two had to be rejected because the images were poor. The first solution from the remaining fourteen plates gave values which were small as compared with their probable errors, but indicated that the proper motion in declination was probably zero. The final solution gave for the value of the parallax $0^{\circ}005 \pm 0^{\circ}020$, which practically means that it was zero, and indicated that the proper motion in right-ascension did not exceed $+0^{\circ}015$.

THE ROYAL HUNGARIAN ASTROPHYSICAL OBSERVATORY.—In No. 14 of the *Kleinere Veröffentlichungen des Königl. Ungarischen Astrophysikalischen Observatoriums*, Dr. Konkoly gives a very detailed description of the instruments added to the equipment of the observatory between the beginning of 1908 and the end of 1911. Many of the instruments have been made for special purposes, and the book, consisting of 166 pages, fully illustrated, should prove exceedingly useful to anyone desiring to set up instruments for astrophysical researches.

NO. 2241, VOL. 90]

OBSERVATIONS OF VARIABLE STARS.—In No. 9 (vol. i., second series) of the *Memorie della Società degli Spettroscopisti Italiana*, Signor E. Padova publishes the values and light curves determined from observations of variable stars during the years 1907–11. Eleven stars are dealt with, and these are divided into three groups, viz. Algol variables, short-period, and long-period variables. In several cases the light-curves are compared, graphically, with those drawn from published elements, or determined by other observers, and the differences between them are discussed. For Mira Ceti the observer found a minimum of magnitude 9.36 on January 15, 1912.

BIRD NOTES.

IN the August *Zoologist* Mr. Collingwood Ingram points out that four races of the furze-warbler are recognisable, namely, the typical *Sylvia undulata* of the northern Mediterranean countries, *S. u. aremoricus* of the Atlantic coast of France and Spain, the north African *S. u. toni*, and the British *S. u. dartfordiensis*, a Dartford warbler, the last being distinguished by its brown back and the smaller development of the white tips to the throat and breast feathers.

The migratory birds visiting the Buffalo River district form the subject of an article by the Rev. R. Godfrey in the June issue of the *Journal of the South African Ornithologists' Union*. Among the species observed were the white and black stork, the European swallow, and several kinds of cuckoos.

In the July issue of *The Emu* Dr. J. B. Cleland continues his account of the results of an examination of the contents of the crops and stomachs of Australian birds, the total number of species which have passed through his hands being 305. Farmers and gardeners should now be able to discriminate without difficulty between beneficial and harmful birds.

A hand-list of the birds of Formosa, by Mr. S. Uchida, is included in vol. iii. part i., of *Annotationes Zoologicae Japonenses*. In a list published in 1907 by Messrs. Ogilvie-Grant and La Touche, 260 Formosan species were recognised; the author has been able to raise the number to 290. The discovery of a species of *Dicæum* has introduced an additional family into the avifauna of the island. We notice that on page 169 *Cuculus canorus* is misprinted *Cuculus canulus*, the error being repeated on page 209 of the distributional list.

No. 23 of *Harmsworth Popular Science* contains an article on the difficulties of bird-classification, although its contents scarcely bear out the title. There are, moreover, statements which do not represent the facts, as, for instance, the assertion that the seriema was originally grouped with the secretary-bird. Again, we find it stated on page 2736 that "the boat-billed heron, . . . the whale-headed stork, . . . and the hammer-head are famous members of the heron tribe," whereas these three birds severally represent the same number of distinct families, which in the British Museum Hand-list are assigned to as many suborders.

In *British Birds* for September, Mr. H. W. Robinson states that two nests of the eider were observed on June 2, 1912, on a small island just off the coast of Ireland. Hitherto eiders have been known in Ireland only as occasional stragglers. It is a matter for regret that in each instance the eggs were taken.

In Reichenow's *Ornithologische Monatsberichte* for July and August, 1912, Mr. J. Thienemann records that a laughing gull (*Larus ridibundus*), marked at Rositten, was shot on a swamp in the West Indies in November, 1911.

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