

unacquainted with astronomy, we fail to recognise the need for, or the suitability of, it. Having attempted too much in too little space, the author is in places forced to be dogmatic, in others he is inexplicit, and the beginner will find tabular statements which, without external assistance, will puzzle him.

To a fair extent the book consists of quotations from well-known writers fitted together with such statistics as one usually finds in popular articles; where the writer's personality appears, we find either dogmatic statements or information which is too loosely or too briefly explained. For example, on p. 28 the reader is told that in 1882, 1893 and 1905, "the disc of the sun was covered with spots"; the subsequent explanation of spot zones will but tend to confuse the beginner. In the next paragraph we read that Sir Isaac Newton showed that if "light" be passed through a prism, a band of coloured light, "known as the solar spectrum," is produced, a statement which can only convey the truth when the beginner either assumes, or knows, that it was the light of the sun that Newton employed. These examples will suffice to show that, in attempting too much, the author has occasionally lost sight of the fact that he was intending to write a book for beginners. Seven reproductions of celestial photographs and drawings illustrate the volume, some of them being from Prof. Max Wolf's beautiful originals.

W. E. ROLSTON.

LETTERS TO THE EDITOR.

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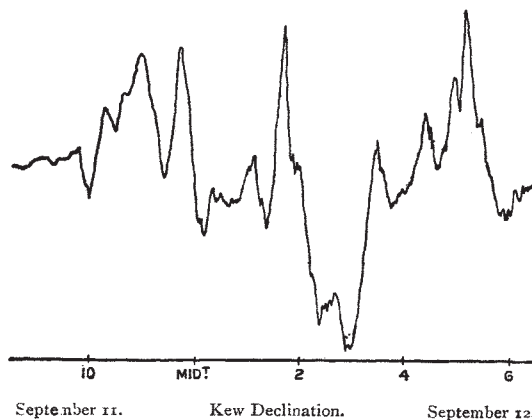
Large Magnetic Storm.

ON September 11-12 a large magnetic storm was experienced at Kew. There were minor disturbances earlier in the month, from September 4-6 and from September 8-10, and the magnetic traces were by no means absolutely quiet when the storm began. The commencement is, however, clearly indicated in the horizontal force curve (not reproduced). Starting at about 9h. 47m. p.m. on September 11, there was a very sudden change in the force. The movement of the horizontal-force magnet was of a type which not unusually ushers in large storms, but it was exceptionally large, representing an increase of about 112 γ in H ($1 \gamma \equiv 0.00001$ C.G.S. unit) in less than two minutes of time. At the end of this movement H had reached its maximum during the storm. The first movement was followed by oscillations. A very rapid fall exceeding 300 γ took place between 11h. 35m. p.m. and midnight; followed by an equally rapid but smaller recovery. The other principal changes in H occurred between 1 a.m. and 2 a.m., and between 4.40 a.m. and 6 a.m. on September 12. Between 4.40 a.m. and 5.7 a.m. there was a fall of 300 γ . The extreme range was not shown on the curve, which went off the sheet, but it exceeded 500 γ . Later on September 12, between noon and 7 p.m., there was further disturbance of a much less striking character, but this was probably from a distinct origin, and the storm commencing on September 11 may be regarded as terminating about 9.30 a.m. on September 12. On this view, the immediate result was a diminution of about 100 γ in the value of H. Such temporary depressions in H are the usual legacy of magnetic storms, but the depression in the present instance seems above the average.

The declination curve, of which a tracing is reproduced on a reduced scale, shows the commencement about 9.47 p.m. on September 11 much less prominently. A small but sharp upward movement, representing an increase of about 1' in westerly declination, is, however, visible, followed in the course of the next twelve minutes by an easterly movement of about 13'. The most salient features

are the four peaks or turning points, where a prominent movement to the west terminated, and was followed by a similarly prominent movement to the east. The approximate times answering to these peaks are 11.4 p.m. and 11.44 p.m. on September 11, and 1.46 a.m. and 5.14 a.m. on September 12. The extreme easterly position was reached at about 2.53 a.m., and the extreme westerly position at about 5.14 a.m. on September 12, the total range of declination being about $1^{\circ} 27'$. The movements on September 12 were the most rapid. Between 1.24 a.m. and 1.46 a.m. there was a westerly movement of about $51'$, followed in the course of the next eight minutes by an easterly movement of about $35'$, while between 2.58 a.m. and 3.28 a.m. there was a westerly movement of about $53'$. There were no large movements after 6 a.m.

The vertical force disturbance was of a somewhat unusual type. Whilst there was a certain amount of oscillation, the principal feature was that during the whole duration



of the storm—from 9.47 p.m. on September 11 to 9.30 a.m. on September 12—the vertical component, V, was depressed below its normal value. The extent of the depression may be judged from the fact that from 11.45 p.m. on September 11 to 6.10 a.m. on September 12—i.e. for more than six hours—V did not rise to within 150 γ of the value which it possessed when the storm commenced. By 9 a.m., however, on September 12, V had returned to its normal value. Owing to loss of trace, the extreme range of the vertical force disturbance was not recorded.

C. CHREE.
Observatory Department, National Physical
Laboratory, September 14.

Bouvet Island and the Solar Eclipse of 1908 December 22-23.

A QUESTION having been raised as to whether the total phase of this eclipse will be visible at Bouvet Island, I have asked the Hydrographic Department for the most trustworthy coordinates of the island with the view of a settlement of the matter.

The position adopted for Bouvet Island on the Admiralty chart of the region is $54^{\circ} 22' S.$, $5^{\circ} 21' E.$

Adopting the elements of the *Nautical Almanac*, the eclipse of next December for this position is a partial one, the magnitude (sun's diameter = 1) being 0.988. The island is about 10' south of the southern limit of the zone of totality.

A. M. W. DOWNING.
H.M. Nautical Almanac Office, September 17.

Ruthless Extermination.

HAVING noticed in your issue of September 3 a most interesting article on the subject of the extermination of animals in Africa, I cannot say how indignant I feel that there should be persons who actually advocate the wholesale destruction—by international consent—of the many wonderful species which have been built up in their perfection during countless ages of evolution.