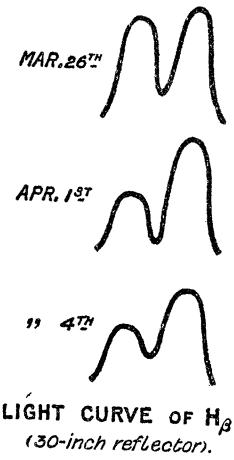

indications of becoming brighter than the more refrangible member. These further photographs indicate that by April 4 the less refrangible had become twice as intense.

"Total Eclipse of the Sun, May 28, 1900.—Account of the Observations made by the Solar Physics Observatory Eclipse Expedition and the Officers and Men of H.M.S. 'Theseus' at Santa Pola, Spain." By Sir NORMAN LOCKYER, K.C.B., F.R.S., Received May 21,—Read June 20, 1901.

(Abstract.)

The Report gives details as to the erection of coronagraphs, prismatic cameras, and other instruments, and of the results obtained by their use during the eclipse, which was observed under very favourable circumstances. Some of the more obvious results have already been stated in a Preliminary Report,* and the following remarks may now be added.

A comparison of the photographs taken with the coronagraph of 16 feet focus with those taken about two hours earlier in America indicates that while some of the prominences changed greatly in appearance in the interval, no changes were detected in the details of the corona.

The spectrum of the chromosphere, as photographed with the prismatic cameras, so greatly resembles that of 1898 that it has not been considered necessary to make a complete reduction of wave-

* 'Roy. Soc. Proc.,' vol. 67, p. 341.

lengths. The prominences visible during totality had comparatively simple spectra, the greatest number of lines recorded being 36.

The heights above the photosphere to which many of the vapours can be traced in the photographs are tabulated and compared with the results obtained in 1898; the two sets of figures are sufficiently accordant, except in the case of the shorter arcs, the value 475 miles derived for the lowest measurable vapours in 1898 being represented in 1900 by two strata, one reaching to 700 miles and the other to 270 miles above the photosphere.

The bright-line spectrum of the corona was decidedly less bright than in 1898, and a much smaller number of rings is seen in the photographs. The three brightest rings are at wave-lengths 5303·7, 4231·3, and 3987·0, and it may be noted that these were also the brightest in the eclipses of 1893, 1896, and 1898. The conclusion that the different rings do not originate in the same gas, arrived at from a discussion of the photographs of 1898, has been confirmed.

A drawing is given to illustrate the fact that while the details of the green coronal ring are seen in the inner corona, they have no apparent relation to the positions of the great streamers or prominences. For an investigation of this nature the photographs taken with the prismatic camera of 20 feet focal length are specially valuable.

"Preliminary Statement on the Prothalli of *Ophioglossum pendulum* (L.), *Helminthostachys zeylanica* (Hook), and *Psilotum*, sp." By WILLIAM H. LANG, M.B., D.Sc., Lecturer in Botany, Queen Margaret College, University of Glasgow. Communicated by Professor F. O. BOWER, Sc.D., F.R.S. Received May 20,—Read May 23, 1901.

During a recent visit to Ceylon and the Malay Peninsula* the author found prothalli of *Ophioglossum pendulum* and *Helminthostachys zeylanica*, as well as a single specimen, which there is reason to regard as the prothallus of *Psilotum*. As the examination of the material will occupy a considerable time, it has seemed advisable to give a brief description of the mode of occurrence and external morphology of the prothallus in these three plants, without entering into details of structure or discussing the phylogenetic bearing of the facts.

The chief gaps in our present knowledge of the gametophytes of the more isolated living *Pteridophyta* concern the *Ophioglossaceæ* and *Lycopodiaceæ*, to which groups the prothalli described below belong. The

* The expenses of the visit to the Malay Peninsula were defrayed by a grant from the Royal Society.