

A Naturalist's Calendar, kept at Swaffham Bulbeck, Cambridgeshire, by Leonard Blomefield (formerly Jenyns). Edited by F. Darwin. Pp. xix + 85. (Cambridge: University Press, 1903.)

In his introduction the editor has given several reasons (all of them excellent in their way) for the reissue of this excellent memorial of an exceedingly accurate and gifted naturalist. He has apparently omitted, however, that which, in our opinion, is the most important argument of all, namely, the relatively early date (previous to 1846) at which the record was kept. This renders it extremely valuable for comparison with observations of a similar nature made at the present day, for the purpose of ascertaining whether any secular changes in the date of the arrival of migratory birds or in the flowering of plants has taken place in this country since the compilation of this calendar. Whether any such differences do occur would require very careful comparison, but we should not be surprised to learn that the average date of the cuckoo's arrival has altered somewhat since Blomefield's time. Be this as it may, the well-known scrupulous accuracy of its compiler renders his calendar of nature a record of exceptional value and interest, belonging to a period when such compilations were rare. There is, therefore, every justification for its republication in the present convenient form, and its appearance at a morphological centre like Cambridge may certainly be regarded as a good augury for the future of natural history studies.

Mr. Darwin gives several anecdotes of the author, to which the present writer can add another. Mr. Jenyns (as he was then called), who was by no means a handsome man, was in early life accustomed to preach occasionally in a church attended by the Henslow family. After one of these periodical visits, the younger members of the family were asked why they were always so unusually quiet in church when Uncle Leonard preached. To which query came the reply that "he kept on making such ugly faces."

R. L.

Elements of Physics, Experimental and Descriptive. By Amos T. Fisher, B.Sc., assisted by Melvin J. Patterson, B.Sc. Pp. 184. (London: D. C. Heath and Co., 1903.) Price 2s. 6d.

THOSE of us who are engaged in university teaching are personally interested also in the kind of science teaching which is given in schools. Lads come to college fresh from school crammed with what is called physics; but, owing to its unsatisfactory character, our first effort is usually to knock out of them the loose and erroneous knowledge with which they have been crammed. We are afraid that the book under review is not likely to improve matters. A long list of errors which we have noted down lies before us—far too long to reproduce here—and we must be content with a few as a sample.

The diagrams of lines of magnetic force of currents (p. 131), of the dispersion in a prism (p. 96), of the formation of a rainbow (p. 98), are all wrong. It is incorrect to state that the image of (*sic*) a concave lens is always smaller than the object, and that a concave meniscus is a converging lens. The field of a magnet does not vary as the inverse square of the distance. An induced charge is not usually equal to the inducing charge.

A paint-brush illustration of the production of induced currents (p. 137) gives the wrong direction to the current. The conservation of energy is stated to be a consequence of the conservation of mass!

In spite of numerous errors and fallacies, and weaknesses of description, the book is not wholly bad; but what a burden is thrown upon the teacher who has to put all these wrong things right! For the private student the book cannot be recommended.

LETTERS TO THE EDITOR.

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An Earthquake Shock at Kimberley.

LOCAL earthquakes are rare phenomena here. There was, however, a small shock at 8h. 43m. p.m. (G.M.T.) on Friday last, July 31. It was accompanied by the loud rumbling noise resembling the passing of a heavy waggon, and caused some shaking of furniture. It appears to have been felt and heard over a considerable area. The record by my large horizontal pendulum showed a single nearly sudden dip to the west of 3.6mm. (*i.e.* from 30.4mm. to 34.0mm., measured from the reference base-line), roughly corresponding to a tilt of about 3", and a rather more gradual recovery, with very little (if any) return swing to the east. No certain signs of preliminary tremors could be detected upon the record. It seems important (*cf.* Milne, "Earthquakes," p. 309, 4th ed., 1898) that for some days previously there had been a gradual, general dip of the level to the east, the mean distances of the hourly readings from the reference base-line, measured from east to west, being:—

| | | | | | |
|---------|-----|-----|-----|-----|----------|
| July 27 | ... | ... | ... | ... | 34.3 mm. |
| " 28 | ... | ... | ... | ... | 34.0 " |
| " 29 | ... | ... | ... | ... | 31.1 " |
| " 30 | ... | ... | ... | ... | 27.0 " |
| " 31 | ... | ... | ... | ... | 28.1 " |
| Aug. 1 | ... | ... | ... | ... | 29.0 " |

The weather during the week had been moderately warm and cloudy, but, so far as I know, there was not any rain anywhere on the table-land. There was no disturbance of the barometer accompanying the shock.

I enclose a cutting from the *Diamond Fields Advertiser* of August 3. It gives the duration at Koffyfontein as three minutes, which probably really means that some loose articles of furniture might have remained swinging for some time after the shock had passed. Koffyfontein, however, like Kimberley, is a diamond mining centre, and from various reports it seems to be demonstrated that the earth-movement was much more pronounced in the vicinity of the open workings than elsewhere. J. R. SUTTON.

Kenilworth, Kimberley, S. Africa, August 3.

Sun-spots and Phenology.

It can be shown in several ways, I think, that we have, on the whole, in these parts (London), more warmth when the sun-spots are numerous than when they are few, a state of things rather opposite to that in the tropics, where (according to M. Nordmann, who has lately confirmed the work of Dr. Köppen some thirty years ago) sun-spots mean coolness, and there is most warmth about minima.

The recurring contrast, in the case of Greenwich, appears to be most distinct in the early part of the year. Thus we may show it by taking the mean temperature of February and March, and smoothing the curve with averages of five (curve A in diagram). B is the sun-spot curve. Thus about sun-spot maxima, the milder weather of spring seems to set in, on an average, *earlier* than at other times. It might be expected that this would have an influence on the data of phenology (time of flowering of plants, &c.), and in many cases we find it is so, that is, curves which represent the dates of flowering of plants will be found to show a certain agreement with the temperature curve of February-March, and with the sun-spot curve.

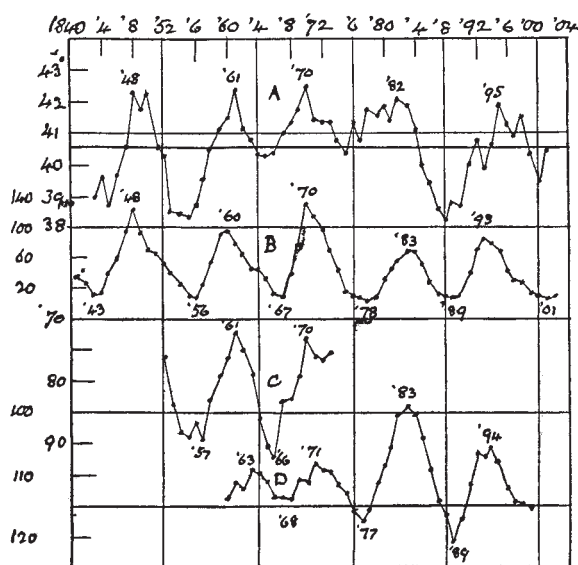
In the diagram are given two of these phenological curves (C and D). C is that for flowering of *Ribes sanguineum* in Edinburgh (1850-87), and D that for flowering of *Azalea pontica* at Parc de Baleine, Allier, in the heart of France (1858-1901). (The scales are separate.)

The date of flowering is given as the day-number in the year, and these numbers are smoothed with averages of

five. The curves are inverted, so that high points represent early dates and low points late dates.

Other examples might be given. This line of inquiry has been followed to some extent by M. Flammarion in France, and it seems desirable that attention should be given to it in this country by those interested in phenology.

The contrast above referred to between the relations of sun-spots and temperature in western Europe and those



in the tropics also calls for elucidation. Probably no meteorologist would now regard it (or other such contrasts) as fatal to the idea of sun-spot influence.

ALEX. B. MACDOWALL.

Retarded Motion of the Great Red Spot on Jupiter.

PERHAPS the most notable fact brought to light by observations of Jupiter during the present season is that the velocity of the great red spot has been again retarded. The rotation period of this well-known object has been as follows in recent years:—

| | | | | | h. | m. | s. |
|---------------------------|-----|-----|-----|-----|----|----|------|
| 1898 | ... | ... | ... | ... | 9 | 55 | 41.8 |
| 1899 | ... | ... | ... | ... | 9 | 55 | 41.9 |
| 1900 | ... | ... | ... | ... | 9 | 55 | 41.7 |
| 1901 | ... | ... | ... | ... | 9 | 55 | 40.9 |
| 1902 and to May 1903 | ... | ... | ... | ... | 9 | 55 | 39.0 |
| May 26 to August 21, 1903 | ... | ... | ... | ... | 9 | 55 | 41.5 |

At the end of May last the longitude of the spot was about 30° , whereas at the present time it is 32° , indicating an easterly drift of 2° , whereas during the preceding twelve months the marking had shown a westerly drift of about 1° per month. The spot now follows the zero meridian (system ii. of Mr. Crommelin's ephemeris, *Monthly Notices R.A.S.*, lxi. p. 110, December, 1902) by about 53 minutes. A remarkable disturbance has recently occurred in the southern equatorial belt of Jupiter. In about longitude 140° to 175° (system i.) several nearly black spots have appeared, and the belt in this region is much torn and full of irregularities, changing from night to night, and evidently subject to extensive commotions.

W. F. DENNING.

The Spots on Saturn.

DURING the past two months about 75 transit times of these objects have been taken here. Several of the more conspicuous markings are moving slower than expected, and their positions appear to be well represented by a rotation period of about 10h. 39 $\frac{1}{2}$ m.

W. F. DENNING.

Bishopston, Bristol, August 25.

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THE SOUTHPORT MEETING OF THE BRITISH ASSOCIATION.

SINCE the prospective programmes of the various sections of the British Association were obtained for last week's NATURE, the following additional particulars referring to the subsection of Section A, devoted to astronomy and meteorology, and the International Meteorological Committee have been received from Dr. W. N. Shaw, chairman of the subsection.

It is intended that the subsection shall meet on Friday, September 11, and on the following Monday and Wednesday. The proceedings may be expected to be especially interesting on account of the presence of a number of distinguished meteorologists from foreign countries who will be in Southport in connection with the meeting of the International Committee. It is hoped that arrangements can be made to enable the members of the committee to take part in the meetings of the subsection, although separate meetings of the committee must be held for the transaction of business.

The questions already proposed for discussion by the Committee include the initiation of international cooperation in connection with atmospheric electricity and solar physics, and its extension as regards terrestrial magnetism; the revision of the arrangements for the exchange of daily telegraphic reports, and the modification of some of the existing international conventions with regard to the observations made at stations of various orders and the method of recording them.

In the subsection on September 11, after an address by the chairman on methods of meteorological investigation, the president of the Association, Sir N. Lockyer, will read a paper on the correlation of solar and terrestrial phenomena, which will be followed by a discussion, as a preliminary to a proposal for putting the organisation of work in connection with that subject upon an international basis. Dr. Buchan will contribute a communication illustrating the distribution of rainfall in Scotland according to the succession of years of the sun-spot cycle. At the same session it is hoped that some of the members of the International Meteorological Committee who have taken a prominent part in the prosecution of researches in connection with that committee may be able to contribute papers. In particular the work of the committee on cloud observations has recently been brought to a conclusion, and a summary of the final results achieved would be very acceptable.

For any further available time on that or the other days there is already a substantial programme. Various astronomical papers have been referred to in the previous notice. The committees which have to present reports are those on kite observations, on the Ben Nevis Observatory, and on seismological observations, and any one of them, either of themselves or in connection with papers on special points associated with them, may give rise to valuable discussion. Prof. Hergesell, the chairman of the aeronautical committee, will be able to give the latest information as to the international investigation of the upper air, and Dr. Varley will exhibit the record obtained by him for Mr. P. Y. Alexander with an unmanned balloon that reached the extraordinary height of 70,000 feet on a journey from Bath in July. The kite equipment and method of investigation employed by Mr. Dines will be exhibited, if possible, in action.

Prof. Callendar will speak upon self-recording instruments, and thus open the way for the discussion of a subject which is of pressing importance in co-operative meteorological work.