

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