right in saying that "the theory of no farm plant has been worked out," and that "our turnip shows are conducted on no useful principle." But he is not equally correct in affirming that "the chemist of the Aberdeenshire Agricultural Association initiated a most important mode of teaching one aspect of cultivation," or that questions in agricultural botany "have usually been altogether subordinated to questions on the comparative efficacy of manures. Had Mr. Wilson known the range of work and style of teaching until lately prevailing at Cirencester, and for long and now in vogue in many agricultural colleges in America and on the Continent, he would have hesitated before making such statements.

While Mr. Wilson shows us how, under certain conditions, a larger weight per acre of roots was produced when the plants (both turnips and swedes) were singled so as to leave but 6 inches between them in the drills, although the drills themselves were 27 inches apart, he gives us no information as to the relative feeding values of the larger roots grown at 8 and 9-inch intervals, and the smaller but more numerous roots from the 6-inch intervals. Had the average weight of any of these sets of roots been exceptionally high or exceptionally low, this point would have been of much greater importance. For our object in growing such a crop as turnips or swedes is to obtain the most economical production of the greatest amount of wholesome and keeping food per acre. Very large roots are, we know, very watery, do not keep well, and contain certain nitrogenous and saline matters in excess, so as to become in this way also less desirable as food for farm stock. And it frequently happens that *all* the increase per acre obtained in the form of large roots is water or useless mineral matters. Thus, in all experiments, such as these of Mr. Wilson, fair samples of the crop from different plots should be reserved for analysis—water, ash, and albuminoid nitrogen, at all events, being determined in the produce of each plot.

*Arithmetic in Theory and Practice for Higher and Middle Class Schools, &c.* By Henry Evers, LL.D. (London and Glasgow: W. Collins, Sons, and Co., 1878.)

HAD Dr. Evers been entirely unknown to us, we should have had no hesitation whatever in saying that this is the work of a practical teacher; of one who has fully realised the difficulties of "teaching arithmetic," and by long experience and patient observation learnt to cope with those difficulties successfully. The arrangement is unquestionably good and in some respects original; the definitions and explanations are short and to the point, indeed we could wish in some cases the author had made them fuller; the problems are numerous and interesting and more of the ordinary daily business type than fanciful improbabilities; and the solutions as far as we have examined them remarkable for accuracy.

The author might have given another method for the extraction of the cube root applicable to all roots; those he gives are certainly the best we remember seeing in any text-book. The examination questions at the end will be found of very great value to those preparing for similar ordeals. The publishers have as usual given a good book a good dress as regards paper, type, and binding.

E. H.

## LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.*]

### The Recent Weather

IT is not necessary to appeal to statistics to demonstrate the cold and sunless character of the weather nearly constantly experienced during the last few months, this being matter of the most ordinary observation; nevertheless some more exact information on the subject may not at the present time be unacceptable to the readers of NATURE.

The year 1878 until October had been generally warm, the temperature on the whole having been above the average in every month, excepting September, and it was very little below in this month. Then a period of cold set in. Beginning with 1878, November, the temperature has been in every month below the average, the deviation in some months being very large. The amount of sunshine, as recorded by Campbell's instrument, has also, since April, been in each month remarkably small. A few particulars, extracted from the Royal Observatory Records, by permission of the Astronomer-Royal, are given in the following table:—

| Month, 1878–1879. | Deviation of mean temperature from average of twenty years. | Number of days on which the mean temperature was | | Hours of bright sunshine. | Deviation of amount of sunshine from average of the two preceding years. |
|---|---|---|---|---|---|
| | | Below the average. | Above the average. | | |
| | ° | | | | |
| November ... | −3·0 | 25 | 5 | 40·5 | − 5·8 |
| December ... | −7·1 | 25 | 6 | 16·3 | − 0·4 |
| January ... ... | −6·9 | 26 | 5 | 14·8 | −12·1 |
| February ... | −1·5 | 16 | 12 | 31·7 | − 2·9 |
| March ... ... | −0·3 | 14 | 17 | 91·0 | + 4·8 |
| April ... ... | −4·3 | 25 | 5 | 74·6 | −36·5 |
| May ... ... | −4·7 | 27 | 4 | 135·6 | −21·0 |
| June ... ... | −2·9 | 26 | 4 | 141·9 | −83·3 |
| July (to 19th).. | −5·8 | 19 | 0 | 52·9 | −51·6 |

The sign − indicates *below* the average.

In every month the temperature has been below the average. The generally severe character of all the months, excepting February and March, is well shown in the column giving the number of days on which the temperature was below the average. From April 1 to July 19, a period of 110 days, 97 were below the average. And during the same period the hours of bright sunshine numbered only 405·0, which is 192·4 hours less than the average of the same period in the two preceding years, or 0·68 only of the amount registered in those years.

Royal Observatory, Greenwich, July 23 WILLIAM ELLIS

### Some Remarks on the Rev. J. G. Wood's Explanatory Index to "Waterton's Wanderings"

1. THE name of the Indian tribe mentioned ought to be *Tamanacos* and not *Jamunacs*.

2. The botanical name of the arrow-reed is *Gynerium* (not Gynœcium, p. 372).

3. (P. 378).—The Balata gum has reached the English market long ago, though it may have disappeared again. If I do not mistake there existed about 1864 even a Balata Gum Company, in which Messrs. Silver and Co. took the lead. We have in Venezuela (State of Maturin) the same tree, where it is called Purvio. Mr. d'Azevedo, of Maturin, sent several times quantities of the gum to Hamburg, but I am informed it did not pay.

4. (P. 380).—The *Camoudi* is *Eunectes murinus* (not marinus). Mr. William Crookes in his article "Gravitation as a Factor in the Organic World" (*Journal of Science*, January, 1879, p. 42), calls it aquatic, and says that it inhabits the rivers of South America. This is certainly wrong; it is generally found near the water, and swims very well, but is by no means an aquatic animal.

5. (P. 381).—*Copaiva* is an oleo-resin, and should not be called a *gum*. There is on p. 461 a misprint in the name of the tree from which it is obtained. It is *Copaifera pubiflora*, Benth., not *C. publiflora*.

6. (P. 383).—The name of the describer of the birds of Trinidad is *Léotaud* ("Oiseaux de l'Ile de la Trinidad," Port d'Espagne, 1866).

7. (P. 384).—The castor-oil plant belongs to the family of Euphorbiaceæ, but not to the tribe of Euphorbiæ (or better Euphorbieæ).

8. (P. 385).—Read *Anolis* instead of *Anolius*.

9. (P. 394).—The coffee-tree does not belong to the "useful