

Key to Todhunter's Integral Calculus. By H. St. J. Hunter, M.A. (London: Macmillan and Co., 1889.)

ALL the examples in Todhunter's "Integral Calculus" are fully worked out in this volume. In the earlier chapters, the solutions are exhibited with considerable detail, so that the "Key" will be a valuable aid to those who are beginning the subject without the help of a teacher. Throughout the work many references are made to the text, the edition referred to being that of 1886.

The Hand-book of Jamaica for 1889-90. By A. C. Sinclair. (London: Edward Stanford. Jamaica: Government Printing Establishment.)

THIS is the ninth annual issue of Mr. Sinclair's "Hand-book," and to those who have already had occasion to consult the work we need hardly say that it contains all the information, clearly and compactly presented, that is likely to be wanted by its readers. The writer provides a good description and historical sketch of Jamaica, and full details are given with regard to all the leading institutions of the island. The volume is published by authority, and has been compiled from official and other trustworthy records.

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 intended for this or any other part of NATURE. No notice is taken of anonymous communications.)

The Method of Quarter-Squares.

MAY I point out, by way of note to Mr. Glaisher's article (October 10, p. 573) on the method of quarter-squares, that the method is indicated in the second edition of Sir John Leslie's "Philosophy of Arithmetic" (Edinburgh, 1820; see pp. 246-57). Leslie gives what he calls a "specimen" table, extending as far as 2000, whereby any two numbers containing not more than three digits each can be multiplied; and he also points out the application of the table for any two numbers less than 2000 by using the formula—

$$ab = 2 \left\{ \frac{a^2}{4} + \frac{b^2}{4} - \frac{(a-b)^2}{4} \right\}.$$

Apparently, Leslie was an independent discoverer of the method; at least this seems to be implied in the remarks which follow his table in the work cited above:—"This application of a table of quarter-squares, as it is derived from the simplest principles, might have readily occurred to a mathematician; yet I have nowhere seen it brought into practical use till, last summer, I met with, at Paris, a small book by Antoine Voisin, printed in 1817. It contains a table of quarter squares for the multiplication of whole numbers from 1 to 20,000, with an explanation of the mode of employing them." G. CAREY FOSTER.

University College, London, October 13.

Marine Biological Association.

THE British Association, at the recent meeting at Newcastle placed a grant of money in the hands of a Committee, consisting of Prof. W. H. Flower, Prof. M. Foster, Prof. E. Ray Lankester, Prof. S. H. Vines, and myself (Secretary), "for the purpose of nominating students to work at the Laboratory of the Marine Biological Association at Plymouth." Arrangements are being made with the Council of the Marine Biological Association, by which the Committee hope to obtain the use of a table at the Laboratory at Plymouth for twelve months.

May I ask you to assist, through the medium of NATURE, in making this information public? Persons who wish to take advantage of the opportunity, afforded by the British Association, of working at the Plymouth Laboratory should address their applications to me at the earliest possible date. The application should contain full particulars as to the nature of the investigation which it is proposed to carry on, together with a

statement of the period of time during which the applicant would be able to work at Plymouth. S. F. HARMER.

King's College, Cambridge, October 15.

Section Work at the British Association.

THE recent meeting at Newcastle has emphasized what has been frequently noticed before, that the British Association week undoes the benefit of previous holiday, and that the conditions under which the work of the Sections is carried on are prejudicial to health, and have this time resulted in a considerable list of sick and wounded. I speak especially of Section A, but have no reason to suppose it different from others.

The principal difficulty is the elementary one of food. A satisfactory midday meal is at present practically unattainable, unless one is willing to sacrifice everything else to it. The time of meeting (from 11 to 3, or, for those more intimately connected with the business of the Sections, from 10 to 5) and the practice of non-adjournment for lunch are to blame for this; and I write to raise the question, whether it may not be wise to reconsider the time-honoured meeting-hours both of Sections and of Committees. Several proposals can be made, but the one I wish to bring forward is, to postpone the Sectional Committee meetings till after the Section has sat, and to begin the Section work at 10 a.m. The work should begin then more freshly than it does now after an occasionally tedious, though occasionally interesting, Committee meeting; and it may go on steadily till 1.30, when it will usually stop for the day. At 2.30, or possibly, but less advantageously, at 2, the Sectional Committees can meet and transact their business comfortably. It will be easier to arrange the papers for next day when it is known how many stand over from the recent meeting; and as the Secretaries usually have things pretty well arranged beforehand, there need be no difficulty or delay in getting the list to the printer in good time. The important business of appointing Committees and such-like can be discussed very rationally after the Committee or individual has just reported to the Section, instead of, as at present, before such report. At 3.30 the General Committee and the Committee of Recommendations can meet, instead of at 3. This apparent lengthening of the day's work by half an hour will be more than compensated by a comfortable sit-down lunch, and one useful function of the Association, viz. the interchange of ideas in conversation, will be much assisted. It may be objected that, if all the Sections rise at 1.30, the luncheon-room will be inconveniently crowded, but there are usually many clubs and private houses available; and if a midday meal became a feature, there is no lack of hospitality. The usual difficulty is how to fit anything social into the crowd of engagements and evening lectures.

My proposal curtails the Section time by half an hour. Whether this is regrettable or not, I am not sure: there are ways of avoiding it if it is. If any hard-pressed Section chooses, it might meet again at 3.30 on every day but Monday, and sit, concurrently with the Committee of Recommendations, for an hour or two without essential hardship. What I feel sure ought to be reconsidered, is the present health-destroying practice of continuous session. OLIVER J. LODGE.

Anthropometric Measurements at Cambridge.

I QUITE agree with your correspondent "F. M. T." that the head measurements are not sufficiently accurate to warrant their use as data for coming to any conclusion as to increased cranial capacity, much less as the foundation for the theories of Mr. Francis Galton. On a comparison of the head measurements of any one individual, they are found to be so variant that one is forced to conclude that the errors of observation are far greater than the maximum error which could exist without completely vitiating the trustworthiness of the data. The following measurements of my head during the last two years are sufficient to render this obvious—

	Breadth.	Length.	Above line from brow to ear-lobe.	Total.
May 28, 1887	5'7	7'4	5'3	223'55
November 19, 1887	5'6	7'3	5'5	224'84
June 14, 1888	5'8	7'4	5'5	236'06
February 4, 1889	5'7	7'3	5'2	216'37
August 23, 1889	5'8	7'5	5'4	234'90
August 30, 1889	5'8	7'4	5'6	240'35