

An Annotated Copy of Newton's "Principia."

ON April 2 of this year (vol. lxxvii., p. 510) I contributed to your columns a short account of an interesting copy of the original edition of the above work, which I had purchased in Sydney from among a collection of old books that had remained packed up in cases for about 140 years, and had formed part of an English estate in Chancery. The most interesting feature of the book consists of several pages of manuscript corrections for a second edition, and numerous amendments of the mathematical diagrams throughout the book, which, according to a further note forming portion of the manuscript pages, were in the handwriting of Sir Isaac Newton himself.

The note in question referred to a manuscript work on "Optics," by Sir Isaac Newton, said to be deposited in the library of Trinity College, Cambridge, as affording an opportunity for comparison of the handwriting. I stated, further, in the letter referred to, that I had had the first two pages of the notes photographed, and had forwarded them to the librarian of Trinity College for the purpose of making such a comparison. Six months have now elapsed, and my inquiry has been followed by developments, some of which must afford interest to mathematical and astronomical students.

Within a few weeks of my communication with the librarian of Trinity College, that gentleman wrote to me to say that the manuscript volume of Newton's "Optics" was, as stated in the note referred to, lying in that library, but that it was in the handwriting of Dr. Roger Cotes, who had edited and supervised the printing of the second edition of the "Principia." He thought that the supposition that the handwriting in the notes was that of Newton was based on the belief that the manuscript "Optics" was in Newton's handwriting.

So the matter was left, when you forwarded to me a long and learned letter which had been sent to you by Dr. J. Bosscha, of Haarlem, in which (after reviewing my account of the volume and the manuscript notes) the following proposition is put forward and supported:—

"The copy now in the possession of Mr. Bruce Smith was indeed once owned by Newton. This illustrious author put it into the hands of 'his trusted suitor,' Nicolas Fatio de Duillier, who intended to publish the second edition of the 'Principia.'"

The letter in which this conclusion is made and supported is too long for quotation, but it enters into great detail with regard to the handwriting, expressing the opinion that the notes are written partly in Sir Isaac Newton's hand, and partly in that of Fatio.

A careful reference to the book shows that there are two distinct sets of corrections—one set being carefully noted and collected in the five blank pages at the beginning and end of the volume, the other set consisting of corrections in the margin of the text itself, and in the diagrams to which that text refers. The two sets of corrections certainly seem to have emanated from different minds, for those notes in the margins and diagrams are not referred to in the five pages of corrections, and those included in the five blank pages of the volume are not carried out in the text, suggesting, as Dr. Bosscha has conjectured, that one set had been prepared by one person, and the other by another. This fact is very suggestive of the double authorship of the notes, and of the authenticity of the volume, remembering that Dr. Bosscha has never seen the book, and depends upon historical records for his knowledge of the notes.

According to Dr. Bosscha, these corrections were well known, and formed the subject of correspondence between Fatio and Huygens, or Huyghens (the celebrated Dutch natural philosopher), in 1691, and Mr. Bosscha adds that Sir Isaac Newton adopted some of Fatio's corrections and rejected others, adding some more of his own.

These facts, sufficiently interesting by reason of Sir Isaac Newton's eminence and the epoch-making character of his work, seem to fit well with the character of the alterations in the volume in my possession, which, as I have said, Dr. Bosscha, of Haarlem, could never have seen.

BRUCE SMITH.

Parliament House, Melbourne.

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The Semi-diurnal Barometric Oscillation.

WITH reference to the note in NATURE of November 12 (p. 47) upon the semi-diurnal pressure variation, it seems to me that the temperature variation is far more likely to be the result of the pressure variation than its cause. At all events, the pressure variation, however it may be produced, must of necessity lead to a temperature variation, but the converse of this proposition is by no means certain. It seems to be admitted that the atmosphere, as a whole, has a natural period of oscillation not differing greatly from twelve hours, and, that being so, a very trifling force with the same period will suffice to produce the observed phenomena. Is it possible that the earth may encounter sufficient resistance to motion in its orbit to provide this force? If we could assume the æther to act as a perfect fluid, we should have increased pressure at the front and back, using the term with regard to the direction of the orbital motion, and decreased pressure over the intermediate great circle. The direct pressure due to the resistance would have maxima at 6 a.m. and 6 p.m., whereas the barometric maxima occur about 10 a.m. and 10 p.m., but I do not think this is a serious objection.

W. H. DINES.

Watlington, Oxon, November 23.

The Fauna of the Magellan Region.

IN the very interesting review of the "Ergebnisse den Hamburger Magalhaensischen Sammelreise, 1892-3," in NATURE of November 19 (p. 82), the reviewer refers to "an interesting fresh discovery . . . of numerous brood pouches (ectodermic invaginations of the body wall) in *Condylactis georgiana*," an Antarctic actinian. I have not a copy of the report to hand, but, if I remember correctly, Carlgren here gives no figures of these "brood chambers," but describes them as of similar character to those he figured in a preliminary note on the occurrence of breeding chambers in actinians published in 1893, of specimens taken by the *Vega* expedition in Arctic seas.

Here he shows that each invagination, although at first affecting the ectoderm only, may be enlarged by the gradual growth of the embryo so as to involve all three layers of the body wall—ectoderm, mesogloea, and endoderm. Since then I have described three other species from the *Southern Cross* and the *Discovery* Antarctic collections having "brood chambers" as distinct sacs projecting into the gastric cavity, formed by the invagination of all three layers of the body wall.

JOSEPH A. CLUBE.

Free Public Museums, Liverpool, November 23.

A Disclaimer.

IN NATURE of November 26 Mr. Soddy asserts, first, that his name as co-editor of *Ion* was made use of without his consent; secondly, that his first intimation of the appearance and of the contents of the journal was obtained from the advertisement in NATURE of November 12. These assertions contradict the actual facts of the case.

It is true that Mr. Soddy did not see the cover before publication; but that Mr. Soddy had not authorised the use of his name as co-editor does not tally with the fact that he made no objection to the wording of certain circulars sent him some time ago, the receipt of which he acknowledged in a letter of September 15. On these circulars he was expressly termed one of the editors. In a correspondence ranging over two months before the publication of *Ion*, Mr. Soddy wrote not a word against the wording of these circulars. Moreover, in his letter of September 25 he expressly desires that I should spare him as much of the editorial work as possible, as his time was limited. I thought I should be granting his request by not submitting to him the personal reports of prominent men of science, which, moreover, I, in my capacity as editor, should have included. I may take this opportunity of adding that Mr. Soddy never had any manner of participation in the journal. It will be evident that his secession will offer no hindrance to the continuance of the journal.

CHAS. H. WALTER

16 Heathfield Gardens, Turnham Green,
London, W., December 1.