

46. On the last evening the snail is more than 16 in. from the top of the pole, else had he been up in the morning, and not more than 31 ins. from the top, else he would not get up by morning, and it would not be the last evening. Now, his gain per 24 hrs. was 15 ins. (31 ins. - 16 ins.) ∴ on the last evening he was up the pole, a multiple of 15 ins.

lying between 389 ins. (420 ins. - 31 ins.) and 404 ins. (420 ins. - 16 ins.) The only multiple within the limits is 390 ins. Dividing by 15 ins. he had been climbing for 26 x 24 hrs. and had 30 ins to climb at the rate of 31 ins. per 12 hrs. The rest of the work is easy. This is substantially the solution of Mr. A. McIntosh, Pinkerton.

BOOK REVIEWS.

THE COMPUTATION OF THE TRANSITS OF VENUS FOR THE YEARS 1874 AND 1882, AND OF MERCURY FOR THE YEAR 1878; FOR THE EARTH GENERALLY AND FOR SEVERAL PLACES IN CANADA. BY J. MORRISON M.D., M. A. (PP. 48.) TORONTO, ROWSELL & HUTCHISON.

The contents of this pamphlet are given in the above title, and we cannot better call attention to it than by this quotation from the *Preface*.

"The following pages were drawn up for the use of Students pursuing the higher Mathematical course in our Colleges and Universities. All the necessary formulae for calculating transits of the planets and solar eclipses from the heliocentric elements, have been investigated in order to render the work as complete in itself as possible; and while I have endeavored to simplify the computation, I have, at the same time, given as full an account of the various circumstances attending these phenomena, as is to be found in any of the ordinary works on Spherical and Practical Astronomy. This is, I believe, the *first* work of the kind ever published in Canada, and therefore I hope it will tend to encourage, in this country at least, the study of the grandest and noblest of the Physical Sciences."

The work is divided into three parts and an appendix. Part I introduces the subject and exhibits the computations for Venus' transit on Dec. 8th, 1884. Part II is occupied with the transit on Dec. 6th, 1882, and with the sun's parallax and distance from the earth. Part III treats of the transit of Mercury on May 6th, 1878. The Appendix exhibits the calculation of solar eclipses.

Mr. Morrison has, as he states, written for mathematical students, and these will find his book both interesting and useful; interesting from its collecting and exhibiting clearly and concisely all the chief calculations on these transits; useful, especi-

ally to those who may have dropped their astronomical studies, in so recalling them that they can, without *back-working*, understand the discussions that have been for some time carried on by astronomers in England. This reminds us that the author in his sketch of the history of the determination of the solar parallax, from observations of transits p. (37) has omitted to notice the bitter controversy that has raged between the 'chartists,' headed by Mr. R. A. Proctor, who advocate applying the old or Halley method to the '74 transit, and the defenders of Sir G. B. Airy, Astronomer Royal, and the Admiralty, who are adopting the new or Delisle method. We confess to disappointment at this omission as also at no notice of what may be termed the physical side of the transit question. In the historic sketch no mention is made of the 'Black-drop' * difficulty, or of Mr. Stone's revision and correction (so to say) of Encke's famous calculations. With this part we are, in fact, far less satisfied than with the mathematical parts. But these are the book, and by them it must be judged, and for them we cordially recommend the little work to the attention of our readers.

PRONOUNCING HAND BOOK OF WORDS OFTEN MIS-PRONOUNCED, BY RICHARD SOULE AND LOOMIS J. CAMPBELL. PUBLISHED BY LEE AND SHEPARD, BOSTON.

This little book is one of the most useful ever issued from the Press. It contains the pronunciation of 3000 words very commonly mispronounced, and is an invaluable aid to those desirous of attaining the correct pronunciation of the English language.

*An artificial black-drop may easily be produced with two fingers or a finger and thumb held in front of the flame of a lamp. Other means easily suggest themselves, some of them exhibiting rather strange delusions regarding optical contact.