

and finally the following values of the latitudes and longitudes of evanescent tides:—

Nature of tide.		1st hypothesis.	2nd hypothesis.
Long period . . . . .	lat. $\lambda_0$	34° 33' N.	34° 7' N.
Diurnal . . . . . {	lat. $\lambda_1$ long. $l_1$	0° 57' S. 53 47 E.	0° 57' S. 53 46 E.
Semi-diurnal . . . . . {	lat. $\lambda_2$ long. $l_2$	81° 23' N. 2 56 W.	81° 21' N. 2 56 W.

The estimation of corrections due to these supplementary portions has been checked in two cases by a detailed extension of the method of square blocks of land used previously for evaluation of the whole integrals; that is to say, two of these portions were separately divided into square degrees (instead of squares whose sides were each ten degrees), and the integral evaluated in a similar manner to that previously described. The agreement of the values so calculated with those obtained by the above method of estimation was sufficiently exact to justify a certain confidence in the close agreement of the finally corrected values of the integrals with their theoretically perfect values.

H. H. T.

II. "Description of Fossil Remains of two Species of a Megalanian Genus (*Meiolania*, *Ow.*), from Lord Howe's Island." By Sir RICHARD OWEN, K.C.B., F.R.S. Received March 15, 1886.

(Abstract.)

In a scientific survey by the Department of Mines, New South Wales, of Lord Howe's Island, fossil remains were obtained which were transmitted to the British Museum of Natural History, and were confided to the author for determination and description.

These fossils, referable to the extinct family of horned Saurians described in former volumes of the "Philosophical Transactions"\* under the generic name *Megalania*, form the subject of the present paper. They represent species smaller in size than *Megalania prisca*, *Ow.*, and with other differential characters on which an allied genus *Meiolania* is founded. Characters of an almost entire skull with part of the lower jaw-bone, of some vertebræ and parts of the scapula and pelvic arches, are assigned to the species *Meiolania*

\* Vol. 149, 1858, p. 43; *ib.*, 1880, p. 1037; *ib.*, 1881, p. 1037.

*platyceps*. Portions of a cranium and mandible are referred to a *Meiolania minor*. Both species, as in *Megalania*, are edentulous with modifications of the mouth indicative of a horny beak, as in the Chelonian order. The cranial and vertebral characters are, however, sauroid. Horn-cores in three pairs are present but shorter relatively, especially the first and third pairs, than in *Megalania prisca*. The indication of a seventh more advanced and medial horn is feeble, and the author remarks that in the small existing lizard (*Moloch*) this horn has not an osseous support. The tail of *Meiolania* is long and stiff; the vertebræ being encased by an osseous sheath, developing, as in *Megalania*, tuberos processes in two pairs, corresponding with the vertebræ within: such defensive parts are less developed, relatively, than in *Megalania prisca*.

The locality of these singular remains is an insular tract not exceeding 6 miles by 1 mile in extent; situated mid-way between Sydney and Norfolk Island, in lat.  $31^{\circ} 31' S.$ , long.  $159^{\circ} 9' E.$  The island is formed of three raised basaltic masses connected by low-lying grounds of blown coral-sand formation, consisting of rounded grains and fragments of corals and shells. In the parts of this formation converted into rock were found the petrified remains which are the subject of the present paper. It is accompanied by drawings of the most instructive fossils: these form the subjects of five plates illustrative of the text.

III. "On the Luni-Solar Variations of Magnetic Declination and Horizontal Force at Bombay, and of Declination at Trevandrum." By CHARLES CHAMBERS, F.R.S., Superintendent of the Colaba Observatory, Bombay. Received March 24, 1886.

(Abstract.)

The materials described in this paper are twenty-five years of declination observations, and twenty-six and a half years of horizontal force observations, taken at the Colaba Observatory, Bombay, and some results of ten years declination observations taken at the Trevandrum Observatory. A consideration of the lunar diurnal variations derived from these observations for different seasons and phases of the moon, leads the author to form the hypothesis that these variations are, properly speaking, combinations of solar diurnal variations that run through a cycle of change in a lunation. The characteristics of the variations that give rise to the hypothesis are (1) that generally the great movements occur in them, as in the mean solar diurnal variations for full lunations, in the solar *day hours*, whilst the night hours are relatively quiescent; and (2) that they