



219.914

D.O.

Thomson

Electron paper for Jan 16. 35

G. H. Darwin

The V.C.
Stetsonwood
Christie (Ast. Roy)
H. J. South
Hobbes
Adams
Cayley
Herschel

TO THE ELECTORS FOR THE PLUMIAN PROFESSORSHIP IN THE UNIVERSITY OF CAMBRIDGE.

TRINITY COLLEGE,
CAMBRIDGE,
Dec. 15, 1876.

GENTLEMEN,

I beg leave to offer myself as a candidate for the Plumian Chair of Astronomy and Experimental Philosophy, now vacant through the death of Professor Challis.

I graduated in 1855 as second wrangler, and afterwards obtained the second Smith's Prize. In the following October I was elected a fellow of this college.

In the winter of 1856-7 I took part in the eclipse expedition to Sicily, but was prevented by bad weather from making any observation.

From 1859 to 1873 I was absent from Cambridge, and was during that time called to the bar. In 1873 I returned to residence in the University.

In 1875 I was elected a fellow of the Royal Society.

I served as Additional Examiner in the Mathematical Tripos of January, 1876.

Since the year 1875 I have been principally occupied with mathematical and physical investigations, the greater part of which have been connected with Astronomy. Lists are appended below of the scientific papers which I have published; the more important memoirs are arranged in order of date in the first list, and the notes and other papers on various subjects follow in the second list.

During the last five years the greater part of my time has been devoted to an investigation in physical astronomy, and the results at which I have arrived are published as a continuous series of memoirs in the "Philosophical Transactions of the Royal Society."

But besides this theoretical work, I have been engaged, in conjunction with my brother, in an experimental investigation in the Cavendish Laboratory. Our results have been communicated to the British Association at the meetings at



York and Southampton in the form of two reports of a committee of the Association. Although the committee has ceased to exist, we are now making arrangements for the resumption of our experiments.

A series of experiments, made at an earlier date, on the pressure of loose earth, forms the subject of a paper now before the Institution of Civil Engineers.

I have also carried out experiments on the theory of the ripple-mark produced in sand by waves and currents of water; and this investigation is, as far as I can now see, nearly completed.

At the late meeting of the British Association Professor J. C. Adams and myself were appointed to act as a committee for the revision of the method of harmonic analysis of tidal observations; and I am at present in communication with Sir William Thomson, General Strachey, and Major Baird, R.E., on the subject of the reduction of the Indian tidal observations.

I may also add that during the last year I have been assisting Sir William Thomson in editing Part II. of the new edition of Thomson and Tait's "Natural Philosophy," and that I have contributed to that work a discussion of the rigidity of the Earth, in which the method of Least Squares is applied to a large number of tidal observations. An abstract of the results obtained was communicated to the British Association, and is included in the list of my papers.

As all my scientific work has been done within the University, I have not thought it necessary to obtain formal testimonials of my qualifications for the office for which I am a candidate.

If you should do me the honour of electing me to the Pluribus Professorship, it will be my object to promote the study of Astronomy and Experimental Philosophy by all the means in my power.

I have the honour to remain, Gentlemen,

Your obedient servant,

GEORGE HOWARD DARWIN.



George Howard Darwin

LIST OF MEMOIRS.

1. On the influence of geological changes on the earth's axis of rotation. Read before the R. S. Nov. 23, 1875. *Phil. Trans.* Vol. 167, Pt. 1, p. 271.
2. On an oversight in the Mécanique Céleste and on the internal densities of the planets. R. A. S. Monthly Notices, Dec. 1876, p. 58.
3. On the bodily tides of viscous and semi-elastic spheroids and on the ocean tides upon a yielding nucleus. Read before the R. S. May 23, 1878. *Phil. Trans.* Pt. 1, 1878, p. 1.
4. On the procession of a viscous spheroid and on the remote history of the earth. Read before the R. S. Dec. 19, 1878. *Phil. Trans.* Pt. 11, 1879, p. 447.
5. Problems connected with the tides of a viscous spheroid. Read before the R. S. Dec. 19, 1878. *Phil. Trans.* Pt. 11, 1879, p. 529.
6. The determination of the secular effects of tidal friction by a graphical method. *Proc. R. S.* May 27, 1879, No. 197, p. 1.
7. On the secular changes in the elements of the orbit of a satellite revolving about a tidally deformed planet. Read before the R. S. Dec. 18, 1879. *Phil. Trans.* Pt. 11, 1880, p. 713.
8. On the analytical expressions which give the history of a fluid planet of small viscosity attended by a single satellite. *Proc. R. S.* Mar. 6, 1880, No. 202, p. 255.
9. On the tidal frictions of a planet attended by several satellites and on the evolution of the solar system. Read before the R. S. Jan. 22, 1881. *Phil. Trans.* Pt. 11, 1881, p. 492.
10. On the stresses caused in the interior of the earth by the weight of continents and mountains. Read before the R. S. June 16, 1881. *Phil. Trans.* Pt. 1, 1882, p. 187.
11. [Jointly with Horace Darwin].
On an instrument for detecting and measuring small changes in the direction of the force of gravity.
First Report of the B. A. Committee on "The Lunar Disturbance of Gravity."
B. A. Report of the York Meeting, 1881, p. 93.
12. Second Report of the B. A. Committee on "The Lunar Disturbance of Gravity."
B. A. Report of the Southampton Meeting, 1882.
13. On variations in the vertical due to elasticity of the earth's surface.
Mathematical appendix to the Second Report.
Reprinted in the *Philosoph. Mag.* Dec. 1882, p. 409.
14. A numerical estimate of the rigidity of the earth.
B. A. Report of the Southampton Meeting, 1882.
This is an abstract of the contribution to Thomson and Tait's *Natural Philosophy*.



15. On the method of harmonic analysis used in deducing numerical values of the tides of long period, and on a reprint in the Tidal Report for 1875.
H. A. Report of the Southampton Meeting, 1882.
16. On the horizontal thrust of a mass of sand.
Inst. Civil Eng. (to be read in January, 1884).

LIST OF NOTES AND PAPERS ON VARIOUS SUBJECTS.

1. Marriages between first cousins in England and their effects.
Journ. Statist. Soc. June 1875, p. 153.*
2. Note on the marriages of first cousins.
Journ. Statist. Soc. Sept. 1875, p. 344.*
3. A mechanical method of making a force which varies inversely as the square of the distance from a fixed point.
Proc. Lond. Math. Soc. April 3, 1875, Vol. vi. p. 174.
4. The mechanical description of exponential lines.
Proc. Lond. Math. Soc. April 6, 1875, Vol. vi. p. 115.
5. On maps of the world.
Phil. Mag. Dec. 1875.
6. On the mechanical representation of the second elliptic integral.
Mon. of Math. 1875, Vol. vi. p. 113.
7. On a suggested explanation of the ellipticity of planets to their rotation.
Phil. Mag. Mar. 1877.
8. A geometrical illustration of the potential of a distant centre of force.
Mon. of Math. 1877, Vol. vi. p. 97.
9. Note on the ellipticity of the earth's crust.
Mon. of Math. 1877, Vol. vi. p. 102.
10. On graphical interpolation and integration.
Mon. of Math. 1877, Vol. vi. p. 133.
11. On a theorem in spherical harmonic analysis.
Mon. of Math. 1877, Vol. vi. p. 165.
12. On fallible measures of variable quantities, &c.
Phil. Mag. July, 1877.
13. On Professor Haughton's estimate of geological time.
Proc. R. S. Feb. 29, 1878, No. 186, p. 1.

* These papers have been translated into German and published in Leipzig.

† This paper is erroneously based on an assumption which my later work has shown to be erroneous.

G. H. Darwin