

present provision for practical work is very inadequate, and the number of students has largely increased, while the required money is not forthcoming. I have already received the following donations, and shall gratefully acknowledge any further help:—Mr. Charles Darwin, 5*l.* 5*s.*; Mr. Edward Dormer, 5*l.*; Mr. T. Newland Allen, 3*l.* 3*s.*; Mr. William Fasseridge, 2*l.* 2*s.*; Anonymous, 2*l.*; Mr. Frank Dethridge, 1*l.* 1*s.*; Anonymous, 1*l.*; Mr. G. Eves, 1*l.*; Mrs. Eves, 1*l.*; Mr. R. Wilkinson, 1*l.* 1*s.*; Rev. C. T. Mayo, 1*l.* 1*s.*; smaller subscriptions, 4*l.* 15*s.* Any further particulars will be most willingly given.

FLORENCE EVES,

Science Student of Newnham College
Mitton House, Uxbridge, January 22

Minerva Ornaments at Troy v. Net-Sinkers

NOR having seen the numbers of NATURE regularly during the autumn, I did not observe Mr. Sayce's reply to my letter on the above subject until lately. I may perhaps trespass on your space with a few lines in reference to it.

I certainly did not observe any markings upon the stones in question that could be construed into any likeness to a human face or to that of an owl. Not having the opportunity of re-examining them I must take this as granted according to Dr. Schliemann's judgment. Of course an expert can see, and see with certainty, what to one less experienced seems quite invisible. At the same time an enthusiast, as we all know, is rather apt to "oversee," and find in his relics more than actually exists. I say this, as it is a common occurrence, and not in any way to disparage Dr. Schliemann's valuable work.

But admitting the existence of such outlines upon the stones in question is it not far more probable that the half-savage natives of the Troad may have taken advantage of certain suggestive lines and roughly outlined an image upon a net-sinker, than that they made so large a number of rough and uncouth things as likenesses of Minerva? The use of stones similarly chipped in the middle as net-sinkers seems common to savages all over the world, and it would seem to me therefore wiser to name them net-sinkers (with outlines, &c.) than to ticket them "Minerva ornaments."

One point, if I understand him aright, which Dr. Schliemann endeavours to prove, is that Ancient Troy stood close to the river. Hence the occurrence of net-sinkers may be considered as probable.

E. W. CLAYPOLE

Antioch College, Yellow Springs, O., December 18, 1880

THE PROVOST OF TRINITY COLLEGE, DUBLIN

THE Rev. Humphrey Lloyd, D.D., was born in 1800. He was the eldest son of the Rev. Bartholomew Lloyd, who was Provost of Trinity College, Dublin, from 1831 to 1837. Humphrey Lloyd entered his father's college in 1815, graduated as a Gold Medallist in Science in 1820, and was elected a Fellow in 1824. In 1831 he was appointed Professor of Natural Philosophy. He was co-opted a Senior Fellow in 1843, was made Vice-Provost in 1862, and was appointed by warrant from the Crown to the Provostship in 1867. He died, after a few days' illness, in the Provost's house on the 16th inst.

Full of years and honours, a very distinguished life has been brought to a close. Part of it was spent in laborious scientific research, part as the head of a great teaching establishment. Both portions of his life were a success, as even a short sketch of that life will show.

Lloyd was an excellent, though by no means a profound, mathematician. On becoming the Professor of Natural Philosophy he devoted himself with some ardour to the study of physical optics, and his report on this subject, laid before the fourth meeting of the British Association, was quite a masterpiece of reporting, and may still be consulted with pleasure. He was not however by any means content with having a knowledge of the work done by others, but was determined to enter on the field of original work himself; an opportunity soon offered. About 1832 Sir William Hamilton had been investigating the relations between the surface of wave-slowness and that of the wave, and thereby had been led

to the discovery of some new geometrical properties of the latter. These properties he demonstrated by means of certain transformations of the equations of the wave-surface, and he showed that this surface had four conoidal cusps at the extremities of the lines of single ray-velocity, at each of which the wave is touched not by two planes as Fresnel supposed, but by an infinite number forming a tangent cone of the second degree; while, at the extremities of the lines of single wave-velocity, there were four circles of plane contact, in every point of each of which the wave-surface is touched by a single plane. These singular properties led Hamilton to anticipate two new laws of refraction called by him external and internal "conical refraction." Hamilton was naturally desirous of having his theoretical conclusions proved by experiment; such experiments required a wonderful patience, delicacy of touch, and an almost instinctive sagacity. As possessing all these he selected Lloyd to solve his problem; and by his labours in a short time the reality of this interesting phenomenon was established.

The memoir by Hamilton and the experimental researches by Lloyd appear in the same volume (xvii.) of the *Transactions* of the Royal Irish Academy.

Lloyd published several treatises and memoirs relating to optical science, but he was persuaded by Sir Edward Sabine to turn his attention, about 1836, to the subject of terrestrial magnetism. At his request the Board of Trinity College, Dublin, built a magnetical observatory, and the Professor entered with zeal upon those studies of magnetism which will for ever remain connected with his name. It would be unnecessary here to enumerate his very numerous writings on this subject.

In 1838 the British Association resolved that having regard to the high interest of the simultaneous magnetic observations which have been for some time carried on in Germany and various parts of Europe, and the important results to which these have led, they regard it as highly desirable that similar series of observations should be instituted in various parts of the British Dominions, and they suggested, as localities particularly important, Canada, Ceylon, St. Helena, Van Diemen's Land, and the Cape of Good Hope, also in the Southern Hemisphere. They further appointed as a Committee to approach the Government on this question Sir J. Herschel and Mr. Whewell, Dr. Peacock and Prof. Lloyd. The Committee, appointed late in August, at once set about their arduous work, and their memorial was laid before Lord Melbourne in the November following. The President and Council of the Royal Society strongly supported the memorial, and these concurrent representations were attended with full effect. In the Report of the Committee to the British Association in 1839 it is stated, "probably at the very moment when this report will be read, two ships, the *Erebus* and the *Terror*, under the command of Sir James Clark Ross, will be already on their voyage to the Antarctic Seas, carrying with them every instrument requisite for the complete and effectual prosecution of important magnetical researches in the high southern latitudes, and also complete establishments, both personal and instrumental, of the fixed magnetical observations to be placed at St. Helena, the Cape of Good Hope, and Van Diemen's Land. It was no wonder that the Committee were proud of the result of their labours, and that they acknowledged in strong terms the ample and liberal manner in which every demand on the national resources had been without exception granted, expressing at the same time the hope that this splendid example might be followed up by other nations. The report is signed J. F. W. Herschel and H. Lloyd.

In 1843 Dr. Lloyd pointed out a mode of reducing the error attending the determination of the intensity of the earth's magnetic force to less than one-fifth of that by the ordinary method.

In 1858 he again pointed out a fatal imperfection