policy of the Government resulted in the 'axing' of an inquiry of this nature. Twenty-five years is not too long for such an experiment, upon which it may be a waste of time and money to embark unless there is some guarantee that the work will be carried forward. Mr. Cousins has achieved this and it is greatly to his credit and to his foresight at the time the Farm was established. After serving the Colony for a quarter of a century, he is now retiring from the post of Director of Agriculture. This report represents an important section of his work and he must indeed be a proud man who can leave such a memorial of service behind him.

University and Educational Intelligence

CAMBRIDGE.—Dr. P. E. Vernon, of St. John's College, has been appointed to the Pinsent-Darwin studentship for three years.

J. A. Steers, of St. Catharine's College, has been appointed to represent the University at the International Congress of Geography to be held in Warsaw in August–September of the present year.

At Pembroke College, J. W. F. Rowe, University lecturer in economics, has been elected to a fellowship.

SHEFFIELD.—Mr. Arthur Pool has been appointed lecturer in mental diseases.

The Council has received a gift from Dr. Foggo of old medical books, anatomical plates, surgical instruments, etc., belonging to the late Dr. Rooth, of Dronfield.

DR. H. E. C. WILSON, lecturer in physiology in the University of Glasgow, has, with the approval of the Government of India, been appointed professor of biochemistry and nutrition at the All-India Institute of Hygiene and Public Health, Calcutta.

APPRAISEMENT of fitness for admission to secondary schools is a task which each year taxes the ingenuity of local education authorities. The technique evolved in grappling with its difficulties in the West Riding of Yorkshire is set forth in some detail in a report by the Education Officer, on the examination for county minor scholarships of some fourteen thousand children of ages 10–12 years, of whom about one seventh were successful. To the written examination in English and arithmetic there was added this year a group intelligence test taken by all candidates in place of an oral test. This was favourably reported on by Prof. G. H. Thomson and was found helpful in dealing with 'border line' cases. The chief examiner's report includes a careful estimate of the evidence afforded by the answer papers in arithmetic of divergence in mental capacity between boys and girls and an expression of a fear "that too often the girls' natural clinging to painstaking methods is reinforced by their training, instead of being to some extent supplanted by the development of that initiative so necessary—even for women—in every walk of life". The report on the examination in English quotes a number of surprising and psychologically interesting 'howlers'. The following essay on "The Importance of Little Things" affords (with many others) evidence, the examiner believes, of ill-assimilated health talks: "An atom is a small animal. It has no legs or arms but has a mouth and means of indigestion. Without these we cannot live: scientists have proved it".

Science News a Century Ago

Baldwin's Locomotive *E. L. Miller*

On February 18, 1834, Matthias W. Baldwin, the founder of the Baldwin Locomotive Works, Philadelphia, completed his second locomotive, the *E. L. Miller*. His first locomotive, *Old Ironsides*, completed in November 1832 for the Philadelphia, Germantown, and Norristown Railroad, was a four-wheeled engine modelled on the plan of Stephenson's engines. The *E. L. Miller*, built for the Charleston and Hamburg Railroad Co., however, was a six-wheeled engine with two driving wheels 4½ ft. in diameter and four smaller wheels attached to a swivelling or 'bogie' truck similar to that first introduced into the locomotive *Experiment* in 1832 by John B. Jervis. The *E. L. Miller* had two cylinders of 10 in. diameter, 16 in. stroke, and it weighed about 7½ tons. Baldwin, who was born in Elizabeth, New Jersey, on December 10, 1795, began life as a jeweller and silversmith. In 1825 with David Mason he set up as a machinist and soon began the construction of small stationary steam engines. With the advent of the steam railway in England, Franklin Peale, the proprietor of the Philadelphia Museum, commissioned Baldwin to make a miniature locomotive. With imperfect sketches of the engines which had taken part in the famous Rainhill trials of 1829, Baldwin made a small engine which drew two cars around a track in the Museum, and it was the success of this model which led to his receiving the order for the *Old Ironsides*. Baldwin died in 1866, by which time he had built more than 1,000 locomotives.

Prediction of the Tides

In 1833 our knowledge of the tides was very imperfect. Bernouilli and Laplace had attempted to formulate rules for prediction on theoretical grounds but without much practical success, and although several tide-tables were published annually, they differed considerably from one another. Sir John William Lubbock had for nineteen years been collecting tide observations for the Port of London, and on February 20, 1834, in a paper "On the Tides" read before the Royal Society, he included tables for the prediction of the tides at London, far more accurate than any previously available. He also described numerous observations on the influence of the wind, which is of considerable importance in limiting the accuracy with which tides can be predicted. The analysis of Lubbock's great mass of data was mainly due to the Rev. William Whewell, who introduced new mathematical methods into the problem. His results were published in a paper read before the Royal Society on January 9, 1834: "On the empirical Laws of the Tides in the Port of London, with some Reflections on the Theory".

Anniversary Meeting of the Geological Society

The anniversary meeting was held on February 21 at the Society's apartments in Somerset House; Mr. Greenough was continued president, and R. I. Murchison and H. Warburton were elected to succeed Dr. Fitton and Prof. Sedgwick, the retiring vice-presidents. It was announced that the proceeds of the Wollaston donation fund had been awarded to M. Agassiz in testimony of the high opinion entertained of his work on fossil fishes, and to encourage him in the prosecution of his important undertaking. The Society dined at the Crown and Anchor Tavern,