proving successful and economical. Its output has proved a more than liberal return on the funds at its disposal.

But essential to its continuance is continuance of adequate financial support from the Government. A tripod cannot stand upon two legs. The State-contribution in this country is relatively not large, but it is most important. Important as it has been in the past, it has now an importance most especially great. The cost of investigation is now higher, much higher than it has been. Endowment funds carry less far than they did carry. Private benefactions and voluntary generosity, although willing, are less able to be found and less capable at this time; already gauged as inadequate of themselves alone before the war, they obviously cannot alone cope with the necessary undertakings now. The present is a time when a large-scale withdrawal of the Government's financial support must prove most formidably crippling. Such crippling will be greater than the actual measure of the sum withdrawn would entail in ordinary times.

To pull down under emergency what has been built up through years of careful experience and is proving efficient can scarcely be ultimate economy. It is to unlearn a useful lesson learnt. Curtailment of the State aid—relatively small in this country—given to scientific research must harm the scientific production of the country. Some curtailment, however, at this time seems unavoidable. Though extension of buildings and equipment and *personnel* is wanted, it may be necessary to withhold that extension at this time, maintaining broadly the *status quo* ready for expansion when that is once more feasible. But if research be an indispensable factor in the rebuilding of the national life, sacrifices should not be required from it disproportionately greater than from other services of a similarly essential kind. Reduction of the State's support on a scale to entail ruin to the existent organisation would be a wastage rather than an economy. Calmly viewed, what more reminiscent of the wastage of the war itself than for machinery actually constructed, assembled, and producing what is needful for a nation's strength as a pillar in the industrial and intellectual temple of the world, to be now under temporary change abandoned or broken up; and at a time when industry as a whole stands convinced of scientific research as a necessity for its recovery and well-being.

My hope would be that scientific research on its present maintenance will be considered part of the intellectual bread of the community, part of the bed-rock on which rests the efficiency, not to speak of the industrial equipment, of the nation; that it will be treated as such in the measure of State-support continued to it; that the State will remember that that support has to embrace at least both the universities on one hand, and, on the other, the research institutions administered by the State, for this reason, namely, that the country's organisation for research, complex in origin, yet economical and effective, stands as an integral system to the entire existence of which is essential an adequate State provision for both these constituent elements, indispensable, since they are, to the whole structure of the system.

The Rayleigh Memorial.

THE UNVEILING IN WESTMINSTER ABBEY.

THE history of the Rayleigh Memorial is soon told. Shortly after Lord Rayleigh's death in 1919 the desire was expressed by many of his friends to commemorate him in some suitable manner, and a committee was formed, with Sir J. J. Thomson, then president of the Royal Society, as chairman, to give effect to this wish. The committee contained representatives of the University of Cambridge, of which Lord Rayleigh was chancellor, as well as of the Royal Society.

After consideration it was decided that, subject to the permission of dean and chapter, a memorial tablet should be placed in Westminster Abbey, while his work at Cambridge as Cavendish professor should be commemorated by the promotion of research in some branch of science in which he was interested.

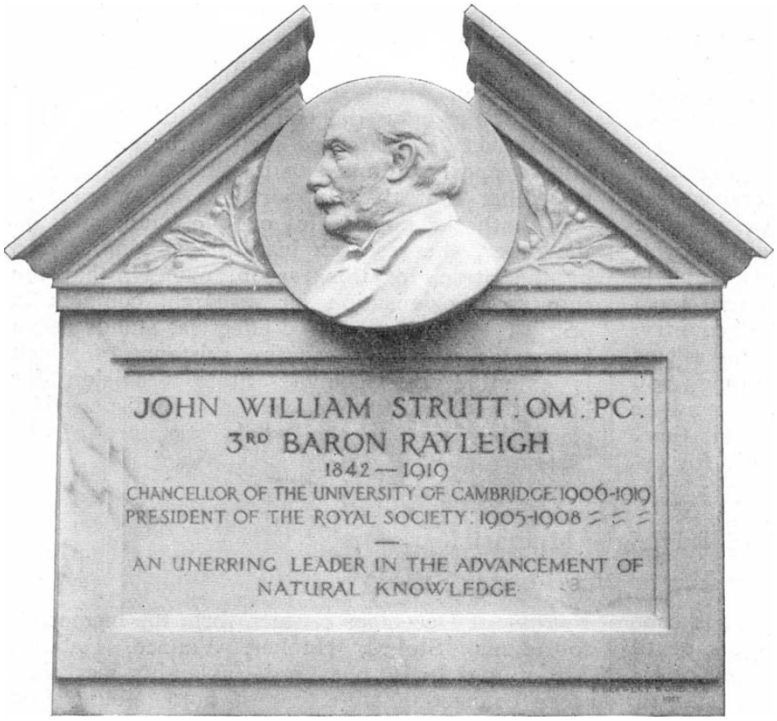
The dean and chapter gave a cordial assent to the wishes of the committee, and a position was chosen for the tablet on the north wall of the north transept close to the memorials to Sir Humphry Davy and Dr. Thomas Young. No space could be found near the group of medallions described in Commander E. C. Smith's interesting article in NATURE of December 1 which form the memorials to Adams, Stokes, Hooker, Wallace, Darwin, Lister, and Joule, but Lord Rayleigh's work had close connection with that of both Young and Davy; much of it was a distinct outcome of the researches of Young, and the position selected is most suitable.

Lord Rayleigh's friends are greatly indebted to Prof. Derwent Wood, R.A., for the tablet shown in the accompanying illustration and especially for the very excellent likeness of Lord Rayleigh, their "unerring leader in the advancement of natural knowledge," which he has executed.

The ceremony on November 30 was a very simple one. A number of Lord Rayleigh's relatives and friends assembled in the Abbey and were met by the dean and Canon Barnes. After two short prayers the dean invited Sir Joseph Thomson, the chairman of the committee, to unveil the tablet. When this was done the memorial was dedicated by the dean and, as a tribute to Lord Rayleigh's work and position, an address, which is subjoined, was delivered by Sir Joseph. The ceremony was then closed with the Benediction.

The following members of Lord Rayleigh's family and representatives of the University of Cambridge, the council of the Royal Society and other institutions with which he was connected were among those who were present:—

The Dowager Lady Rayleigh, Lord and Lady Rayleigh, Mrs. Sidgwick, the Hon. R. Strutt, the Hon. Edward and Mrs. Strutt, the Rt. Hon. G. W. and Lady Betty Balfour, and Mr. E. J. Strutt; the vice-chancellor of the University of Cambridge, Sir Joseph Larmor, and Mr. J. F. P. Rawlinson, Members of Parliament for the university; the president of the Royal Society, Sir J. J. Thomson, Sir David Prain, Mr. W. B. Hardy, Mr. Jeans, Sir Arthur Schuster, Prof. Lamb, Sir William Bragg, Prof. Fowler, Prof. O. W. Richardson, Sir Gerald Lenox Conyngham, members of council of the Royal Society; and Prof. F. Derwent Wood, Lord Southborough, Sir James Dewar, Sir William McCormick, Sir Charles Parsons, Sir George Beilby, Sir Oliver Lodge, Sir Maurice Fitzmaurice, Sir Napier Shaw, and Sir Richard Glazebrook.



Photo] [*F. Hilaire d'Arcis*

Memorial tablet of Lord Rayleigh by Prof. Derwent Wood R.A., unveiled in Westminster Abbey on November 30.

In order to promote research in a branch of science in which Lord Rayleigh was interested, it has been arranged to hand over the balance of the fund, some 500*l.* in amount, to the University of Cambridge to be used as a library fund at the Cavendish Laboratory, where there is a research library to the formation of which Lord Rayleigh contributed when professor. To have an annual sum available for the purchase of periodicals, binding, etc., would, in the opinion of both Sir J. J. Thomson and Sir Ernest Rutherford be of real service and would greatly promote research in physics at Cambridge.

Sir Joseph Thomson's Address.

On behalf of the Royal Society and of the University of Cambridge it is my privilege to thank the Dean and Chapter of Westminster for permission to erect a memorial to Lord Rayleigh in the Abbey. I desire also to thank the artist, Mr. Derwent Wood, whose skill has made the memorial an excellent likeness of Lord Rayleigh, and has endowed it with artistic merits which make it worthy of a place on these walls. I desire also to thank the contributors whose generosity has made this memorial possible. I owe my position here this afternoon to the courtesy of the president of the Royal Society, and of the vice-chancellor of the University of Cambridge. Either of these would have been a more appropriate representative than myself, but it is their wish that, as chairman of the Committee of the Memorial, I should undertake this duty. It seems fitting that, on this occasion, when we place a memorial to Lord Rayleigh in a building surrounded by memorials of the most illustrious of Englishmen, a few words should be said as a tribute to his work and in support of his claim to be represented on these walls. Lord Rayleigh devoted a long life with entire singleness of purpose and pre-eminent success to the pursuit of what, in the phraseology of the Royal Society, is called "the promotion of natural knowledge." For fifty years, without pause and without hurry, he pursued researches which are one of the glories of English science. It is possible to form an estimate of the quality and quantity of Lord Rayleigh's work by those six volumes of collected papers which we owe to the enterprise of the Syndics of the Cambridge University Press. Among the 446 papers which fill these volumes there is not one that is trivial, there is not one that does not advance the subject with which it deals, there is not one that does not clear away difficulties; and among that great number there are scarcely any which time has shown to require correction. It is this, I think, which explains that while the collected papers of scientific men often form a kind of memorial tablet in our libraries, respected but not disturbed, those of Lord Rayleigh are among the most frequently consulted books in the physicist's library.

The first impression that we gain on looking at these volumes is the catholicity of Lord Rayleigh's work—mathematics, light, heat, electricity, magnetism, the properties of gases, of liquids and solids, are all represented in fairly equal proportions. If I were asked to explain in what department of physics Lord Rayleigh's work was most important I should be quite at a loss to do so. In these days when we speak of electricians, of molecular physicists, elasticians, or even if we take the wider classification