where reproduction is proceeding most actively. Fig. 5 is a large flask containing a fluid culture through which air was passed continuously while the photograph was taken.

My investigations on these organisms have been carried out at the Jenner Institute of Preventive Medicine, and I am greatly indebted to Dr. Allan Macfadyen for help and advice during the progress of the work.

J. E. BARNARD.

INTERNATIONAL COMMITTEE OF WEIGHTS AND MEASURES.

THE International Committee of Weights and Measures at Paris has just issued an account of its business and proceedings for the past year.[1] It would appear from the report of the director of the International Bureau (at Sèvres, near Paris), made to the Committee at their session in October last, that the work of the Bureau has, under the directions of the Committee, included :—Research as to the mass of a cubic decimetre of water (giving for the specific mass of water at 4° C. a value equal to 0·9999707) ; the study of dividing engines ; investigations as to the dilatation of metals, the precise measurement of temperature, &c. The ordinary verification work of the Bureau during the past year has included :—The re-verification of metric standards (metres and kilogrammes) for the High Contracting States who have given adhesion to the Metric Convention, 1875 ; the verification of standards (particularly thermometers, and decimetres) for a large number of scientific and official authorities ; and the installation of new bases for geodetic measurements. We are glad to see that the Committee has now been able to extend and repair its laboratories at the Pavillon de Breteuil and to perfect its arrangements for undertaking electrical measurements.

We congratulate the new secretary of the Committee, Prof. P. Blazerna (Rome) ; who has succeeded the late secretary the lamented Dr. A. Hirsch ; on the present issue of the *Proceedings* of the Committee. Four useful appendices are attached to the volume, including :—Annexe i., on the danger of introducing normal secondary standards in the definition of metric units ; a *résumé* (annexe ii.) of legislation in different countries, derived from reports presented to both Houses of Parliament by the British Foreign Office in 1900 and 1901 ; and particularly annexe iv., which recapitulates the decisions of the Troisième Conférence Générale held at Paris last October, as to the definition of the metric units, metre, kilogramme and litre, and the true measurements of standards of those units. The Committee also was much engaged in the discussion of these definitions, which are now published in the *Compte rendus* des Séances de la Conférence (Paris, 1901).

The members of the Committee included MM. Arndsten, D'Arrillaga, Benoit, Blazerna, De Bodola, Chaney, Cornu, Egoroff, Gautier, Hasselberg, Hepites, Von Lang, De Macedo ; and M. Mendeléeff, formerly an active member of the Committee, has now been named one of the honorary members of the Committee.

Last year the annual budget of the Committee was, as in previous years, fixed at 75,000 francs ; but at the meeting at Paris in October 1901 of the General Conference it was proposed that the budget should be increased to 100,000 francs annually. This proposition did not, however, receive the support of the delegate from Great Britain, but we are now glad to see that the Treasury has given its sanction for the increase in the proportionate contribution payable by this country to the Committee, based on the annual budget of 100,000 francs.

[1] "Comité International des Poids et Mesures." Procès Verbaux. Pp. 181. (Paris : Gauthier Villars, 1902.) 1 vol.

SIR JOHN DONNELLY, K.C.B.

SIR JOHN DONNELLY, whose death occurred on Saturday last after a painful illness of more than six weeks, will probably be best remembered for his unceasing and devoted service in developing and administering Governmental schemes for the promotion of scientific education in this country. Soon after the end of the Crimean War, through which he served with distinction as a Lieutenant of Royal Engineers, being twice mentioned in despatches and recommended for the Victoria Cross—an honour, however, rather unjustly withheld from him—he was appointed to the charge of a detachment of Royal Engineers quartered at the South Kensington Museum. At that time this institution was but newly born, under the fostering care of the Department of Science and Art, the principal permanent chief being Sir Henry Cole, who formed the highest opinion of Donnelly's marked abilities as a clear-sighted, shrewd and wholly trustworthy young officer. About 1858–1859, Captain Donnelly succeeded the late Lord (then Dr.) Playfair as inspector for science, and a general scheme of grants applicable to the whole country was formulated and set in operation. The subjects of science towards which instruction in aid was obtainable were at first few. Among the examiners was Huxley, with whom Donnelly came to be closely associated. This close association ripened into an intimate and affectionate friendship. It is probable that to few, if any, other men did Donnelly turn with equal confidence for counsel and advice more frequently than he did to Huxley.

From a beginning of thirty-eight local science classes and schools with 1330 students in 1860 were developed the existing 2000 classes and schools attended by at least 160,000 students. Grants for practical work in laboratories at such schools were made by the Government in 1870. As early as 1867 Donnelly had a large share in putting forward a scheme for aiding local efforts to establish local scholarships and exhibitions to assist the higher instruction of students in science.

Besides the management and care of these wide-reaching operations, he assisted in reorganising the old Royal College of Chemistry in Oxford Street and the School of Mines in Jermyn Street which became in 1890 the Royal College of Science, of which the first dean was the late Prof. Huxley. In 1868 Donnelly was appointed on a commission to consider what steps should be taken to constitute a separate Department of Science and Art for Ireland, and, acting also as secretary of the commission, he drafted its report. The commission could not see its way to reporting in favour of establishing a separate Department, and up to Donnelly's retirement in July 1899 various State-aided institutions in Ireland were subject generally to his control as Secretary of the Science and Art Department, to which office he was appointed in 1884, having held the office of Director for Science from 1873.

To develop the Museum of Science as a worthy companion to the Museum of Art at South Kensington, Donnelly pressed upon the notice of his chiefs the desirability of holding a very important and successful loan exhibition of scientific instruments and apparatus, which was opened in 1874 by Her Majesty Queen Victoria in person. This led to the formation of a museum of scientific apparatus for teaching and research. For many years after the retirement of Sir Henry Cole in 1873, Donnelly was untiring in his exertions to secure Parliamentary grants for the completion and erection of properly devised permanent buildings to house the Museums of Art and Science, the component sections of which were dispersed throughout in temporary and straggling makeshift galleries and sheds. The obvious scandal that a Government could permit the existence of such a