

### The "Immured Standards" in the House of Commons.

AN interesting ceremony recently took place in the House of Commons, when the copies of the Imperial Yard and Pound which normally rest within the wall of the staircase leading up to the committee rooms, were replaced in their recess, and re-immured by cementing in place the stone slab covering the opening. These "immured standards," officially described as "Parliamentary Copies No. 4," constitute one of the four original sets of copies of the present primary standards of the yard and pound, and were constructed simultaneously with them in 1844-45, with the view of providing a ready means of replacement, should the originals at any time be lost or destroyed. Such a catastrophe occurred in 1834, when the Houses of Parliament were burnt down, the then existing standards being destroyed in the fire. The other sets of Parliamentary Copies were placed, and still remain, in the custody of the Royal Mint, the Royal Society, and the Royal Observatory, Greenwich. At a later date, a fifth set was provided for the Board of Trade, to obviate the necessity for using the primaries in important comparisons, as had been the practice hitherto.

Under statute, these copies must be compared with each other every ten years, and with the primary standards every twenty years, but the immured copies are expressly exempted from this requirement. Hence they have seldom been examined, and were only cursorily re-verified for the first time in 1892, when Mr. H. J. Chaney, the then Superintendent of the Standards, compared them with the Board of Trade copies, by means of apparatus which was taken to the House for the purpose. Since then they have not been disturbed until this year. Upon the present occasion, since this year marks the end of the twenty-year period, it was thought desirable to include the immured copies also in a complete set of inter-comparisons with the other copies and with the Imperial Standards themselves. With the kind consent of the Speaker, and in his presence, the recess was opened, and the standards taken out and inspected, before being removed to the Standards Department for verification. Upon the box there was found the certificate, in original, of their deposit in the present position, after the original site had been demolished during structural alterations. This certificate was dated March 7, 1872, and bore, among others, the signatures of Sir George B. Airy, Astronomer Royal, and Prof. W. H. Miller, both of whom had been closely concerned in the original construction of these standards.

All the comparisons in which the immured copies

were involved having been completed, they were returned upon August 3. Mr. J. E. Sears, Deputy-Warden of the Standards, produced them for identification by means of their inscriptions, and after Mr. Percy Ashley, Assistant Secretary to the Board of Trade, had explained the general purpose of the ceremony, the Deputy-Warden announced the result obtained by comparing them against the Imperial Standards. They were then formally replaced in their boxes, which were then hermetically sealed up within a lead sheathing, within an outer oak box, and replaced in the recess, in which they were again immured by cementing the front stone in place. Upon the box there had been placed a record of the proceedings, signed by the principal witnesses, together with the original certificate above referred to, which had been found when the recess was opened.

The results of the comparison of the immured standards with the primaries were given by Mr. Sears as follows:

Yard P.C. No. 4 = Imperial Standard Yard - 0.000101 inch.

Pound P.C. No. 4 = Imperial Standard Pound + 0.00286 grain.

These figures are, however, provisional, since due weight will ultimately have to be given to the results of the other comparisons which are not yet completed, and some adjustment will therefore be necessary. It is interesting to compare these figures with those arrived at in 1844-45, when the standards were first constructed, namely:

Yard P.C. No. 4 = Imperial Standard Yard + 0.000007 inch.

Pound P.C. No. 4 = Imperial Standard Pound - 0.00314 grain.

The apparent variation in the yard is of the order of the differences which have been observed from time to time in the past among the other standard bars, but the apparent change in the pound is more considerable. It may perhaps be explained by the fact that the weight is by no means a good piece of metal, and of all the copies, it constitutes probably the one least fitted to form a trustworthy standard. Some evidence is, however, available, though it cannot be regarded as conclusive, that prior to 1878 the primary standard was rendered a little lighter by wear, arising from its relatively frequent use for important comparisons. The present series of comparisons may render it possible to form some conclusion as to whether this is the case.

### The International Research Council.

A MEETING of the International Research Council was held at Brussels on July 25 and the four succeeding days, under the presidency of M. E. Picard, secretary of the Académie des Sciences, Paris; simultaneously the recently formed Union of Scientific Radio-Telegraphy held its first general assembly.

Twenty countries have now joined the International Research Council, the following seventeen being represented at the meeting: Belgium, Canada, Denmark, France, Great Britain, Greece, Holland, Italy, Japan, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United States of America, and Czechoslovakia. The representatives of Great Britain for the general proceedings of the Council were Prof.

J. R. Ashworth, Sir William Bragg, Sir Charles Close, Sir Richard Glazebrook; Mr. A. R. Hinks, Col. H. G. Lyons, Sir Arthur Schuster, and Dr. E. H. Starling; while in addition Admiral Sir Henry Jackson, Dr. Erskine Murray, and Mr. Shaughnessy represented, together with Sir Richard Glazebrook, the National Council for Radio-Telegraphy.

The greater part of the business of the meeting was concerned with the organisation of international scientific unions additional to the five for Astronomy, Geodesy and Geophysics, Chemistry, Mathematics, and Scientific Radio-Telegraphy, which are already in activity. As a result of the meeting the formation of Unions for Pure and Applied Physics and for Geography seems assured. The proposed Union in

Geology awaits the consideration of the Geological Congress which meets this week at Brussels, and some advance has been made in connexion with the biological sciences.

At a previous meeting of the International Research Council it had been provisionally agreed to unite medical and biological sciences; this decision did not find favour, and the intention now is to separate medicine from Physiology, Zoology, and Botany. Proposals will be submitted to the countries belonging to the Research Council, and the ultimate formation of this Union will depend on the number of countries willing to join.

Among other matters dealt with, a proposal submitted by the National Research Council of the United States of America and accepted by the meeting may prove to be an important addition to the responsibilities of the Research Council, which hitherto contented itself with the formation of Unions which became practically autonomous as soon as their statutes were approved. As problems in which several Unions were concerned ran a danger of being neglected, the proposal was now made by the United States that the Research Council itself should take such

problems under its own special protection. Three inquiries were mentioned as likely to fall within this category. One of them had already been considered by the International Astronomical Union, which requested the Research Council to make arrangements for a collaboration of several of the Unions in the study of the correlations between solar and terrestrial phenomena. The second referred to the energy supply of the world (fuel, solar energy, etc.), while a third suggestion dealt with the difficult and complicated question of international patents. The risk of overlapping efforts and the possible fear of interference with the special work of the Unions is avoided by the provision—now coming into force—that the Executive Committee of the Research Council, which hitherto consisted of five members, should be enlarged, each Union nominating an additional member.

At the concluding meeting the five members of the Executive Committee appointed by the general assembly were elected as follows: M. E. Picard (President), Mr. G. Leconte and Prof. Vito Volterra (Vice-Presidents), Dr. G. E. Hale, and Sir Arthur Schuster (General Secretary).

### The Philosophical Congress at Manchester.

THE special subjects of discussion at the Philosophical Congress recently held at Manchester were (1) the nature of history and its differentiation from science, (2) the concept of unconscious mental process and the justification of the term unconscious in psychology, and (3) the philosophical aspects of the principle of relativity, particularly in regard to the problem of sense perception.

The vice-chancellor of the University of Manchester, Sir Henry Miers, presided at the opening meeting, when the Bishop of Manchester, Dr. William Temple, gave an inaugural address on "Symbolism as a Basis for Metaphysics." The particular function of philosophy is the interpretation of value. Reality presents itself in grades which rise in a hierarchical order from simple matter to life and mind and spirit. Each higher order is the imposition of a value on the lower on which it is dependent and which then becomes for it a symbol. Thus a flag as a parti-coloured strip of calico is mere matter and yet apart from the value which this matter symbolises it has not even the existence which supports the value. That is to say, though existence is prior to value, in the higher grade the distinction between existence and value disappears. This led to the further position that the universe can only be explained in terms of will. The intellect may be satisfied by a concept of the universe in terms of physical causation, but religious, aesthetic and ethical, and also scientific experience can only be satisfied by proof that it is purposively reasonable and not merely causally intelligible.

(1) "Are History and Science different kinds of Knowledge?" was discussed in a symposium by Mr. R. G. Collingwood, Prof. A. E. Taylor, and Dr. F. C. S. Schiller. The problem is an old one but has acquired new significance in modern thought. History is particular and individual, its events are unique, it is impossible to classify them and induce general laws. Is it then more than a simple chronicle? On the other hand, science deals with repetitions, its method is experimental, it formulates general laws which enable us to predict and so to control the future.

(2) The subject of the unconscious aroused the liveliest interest on account of its practical importance

and the question of the methods of psycho-therapy which it involved. Prof. T. H. Pear presided over the discussion and referred to the great loss which psychology had sustained in the death of Dr. W. H. R. Rivers, who had taken part in arranging the programme and had expected to participate in the Congress. The meeting rose in silent tribute. The first symposium, "Is the Unconscious a Conception of Value in Psychology?" was by Mr. G. C. Field, Dr. F. Aveling, and Prof. J. Laird. In the discussion the medical point of view was represented by Dr. Mitchell and Dr. William Brown. The latter gave detailed instances of assumed mental processes which, judged by analogy, are indistinguishable from those of conscious life, the only difference being that the subjects in whom they occur are completely unaware of them. Mr. Leonard Russell on the philosophic side defended the use of the apparently self-contradictory term "unconscious consciousness" in a subtle argument directed to show that the paradox is not confined to a particular class of mental phenomena but extends to all, for even in what we call conscious process we are never conscious of the consciousness.

A second symposium on the terms used in the new psychology, "The Relations between Sentiments and Complexes," had six contributors. The first paper was by the late Dr. Rivers, the others were by Dr. Bernard Hart, Mr. A. G. Tansley, Prof. T. H. Pear, Mr. A. F. Shand and Dr. C. S. Myers. The practical issue in this discussion was as to a possible danger in psycho-analysis. Complexes were acknowledged to be harmful and psycho-analysis was directed towards dissolving them, but in doing so might there not be risk of dissolving sentiments which were wholly healthy?

(3) A discussion between Prof. G. F. Stout and Prof. Alexander on the nature of sense perception was preliminary to a more general discussion on a paper by Prof. A. N. Whitehead, "The Philosophical Aspects of the Principle of Relativity." The tendency of the new concept was, Dr. Whitehead said, distinctly to support the line of argument of those who followed Berkeley, and yet it was wrong to suppose that Einstein's principle implied or was even ultimately consistent with the full idealist