

INTERNATIONAL COMMISSION ON
ENZYMES

AT the second general assembly of the International Union of Biochemistry, held in Brussels in August 1955, it was agreed to establish an International Commission to consider those problems of enzymology in which international co-operation would be useful, and especially to make recommendations for a more logical and a more generally satisfactory system for the nomenclature and classification of enzymes.

In the following year, Prof. M. Florin, the president of the International Union of Biochemistry, called an *ad hoc* committee together in Paris. At this meeting it was finally agreed that the terms of reference of this Commission should in the first instance be: "To consider the classification and nomenclature of enzymes and co-enzymes, their units of activity and standard methods of assay, together with the symbols used in the description of enzyme kinetics". It was further agreed that the Commission should consist of ten ordinary members and two corresponding members. Dr. Malcolm Dixon was appointed president of the Commission and Prof. O. Hoffmann-Ostenhof secretary. Prof. E. Cherbuliez was present at this meeting as a representative of the Section of Biological Chemistry of the International Union of Pure and Applied Chemistry.

As a result of this meeting the following people agreed to serve on the Commission: *Ordinary members*: A. E. Braunstein (U.S.S.R.), S. P. Colowick (United States), P. A. E. Desnuelle (France), M. Dixon, president (United Kingdom), W. A. Engelhardt (U.S.S.R.), E. F. Gale (United Kingdom), O. Hoffmann-Ostenhof, secretary (Austria), A. L. Lehninger (United States), K. Linderström-Lang (Denmark), F. Lynen (Germany); *Corresponding members*: F. Egami (Japan), L. F. Leloir (Argentina).

The work of the Commission was begun shortly after the appointment of members was completed, and a number of documents dealing with various different topics were circulated by the president and secretary for the consideration of the members.

The next meeting of the Commission took place in Paris in July 1957. One of the first pieces of business to be taken up at this meeting was a proposal by Dr. Gale that a philologist should be invited to participate in the work of the Commission. This somewhat novel and highly acceptable proposal was welcomed by the Commission, and Mr. H. S. Davies, Fellow of St. John's College, Cambridge, has now agreed to serve as a corresponding member. Although the work of the Commission is still in its early stages, a number of important decisions have been reached, and it is possible already to see the shape of the final recommendations. For example, it was agreed that a dual system of nomenclature should exist in enzymology, in which each enzyme should be given an exact systematic name, which in most cases will be a new name coined by the Commission, and also

a short, trivial name, using for this, whenever possible, the present-day name. The systematic name for a given enzyme should as far as possible be descriptive of the reaction catalysed by the enzyme; thus, in the case of transferring enzymes the systematic name would be in accordance with the scheme 'donor-acceptor-group transferred-transferase', for example, alanine- α -ketoglutarate-amino-transferase, although 'transaminase' might well remain as a permissible trivial name. Enzymes catalysing oxido-reductions would be named oxidoreductases in the systematic nomenclature, according to the scheme 'donor-acceptor oxidoreductase', although again for everyday use it would probably be recommended that the terms 'dehydrogenase' and 'reductase' should be retained. A special sub-commission was set up to consider the nomenclature of cytochromes.

A preliminary discussion also took place on the question of the units of enzyme action and on the kinetic symbols to be used in the description of enzyme-catalysed reactions.

A joint meeting of the Commission on Enzymes with the Commission on Biochemical Nomenclature of the International Union of Pure and Applied Chemistry was also held in July, at which the nomenclature of 'pyridine nucleotides' was raised. It was agreed that the International Union of Pure and Applied Chemistry Commission should be asked to bring forward recommendations as to the naming of these compounds, so that the Commission on Enzymes would be provided with an internationally agreed terminology for this group of co-enzymes, and would therefore be in a position to deal with the nomenclature of enzymes functioning with these co-factors.

It would be misleading at this early stage in the work of the Commission to attempt to set down in any detail the recommendations that have been put forward. Much more work remains to be done, and in suggesting new proposals relating to nomenclature and classification of any group of compounds it is clearly necessary to view the field as a whole. One important practical point that faces any nomenclature Commission has already been discussed, namely, the means of bringing into general use the newly proposed names. Here it will, at some stage, be necessary to seek the help of the major biochemical journals in different countries, and it is to be hoped that the final recommendations of this Commission will be given the widest publicity in order to facilitate their adoption by working biochemists and so minimize the existing confusing and reduplication of names that exist in this field.

The Commission will welcome suggestions from non-members and from outside bodies on all aspects of the field. These should be sent to the president or to the secretary of the Commission, but it is hoped that they would not be published before being considered by the Commission.

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