History of the International Federation of Clinical Chemistry*

In September, 1951, the International Union of Pure and Applied Chemistry (IUPAC) held a conference and congress in New York. Professor A. Tiselius, then President of the Biological Chemistry Section of IUPAC became President of the Union and Sir Charles Dodds (then Professor E. C. Dodds) succeeded him as head of the Biological Chemistry Section, with Professor Murray Luck as Secretary. The writer was in New York at this time, at the invitation of the American Association of Clinical Chemists, and was approached by the representatives of the Biological Chemistry Section of IUPAC to join and take on the Presidency of the Commission on Clinical Chemistry, to consist of himself, Professor Warren Sperry (U.S.) and Professor Paul Fleury (France). Tiselius, Dodds, and Luck felt that there was a need for an international body, with the backing and support of a union, to pull together and correlate the activities of the very few known national societies of clinical chemistry, and to encourage the formation of such societies in other parts of the world; furthermore, that the chemists and biochemists who worked in hospitals and the clinical departments of medical schools were now sufficiently numerous, at least in the principal countries, to warrant drawing them together into some sort of loose organization and to periodic meetings which might well be on an international scale.

During the following winter of 1951-52, correspondence took place between King, Sperry, and Fleury as to possible avenues of profitable activity. An invitation was then received from the Netherlands Society of Clinical Chemistry that an international congress be held in Amsterdam in the spring of 1952, to which the clinical chemists of the world would be invited, and which should be the occasion for the foundation of an international organization of clinical chemists as well as a congress for the presentation of lectures and research communications. Negotiations were already well forward with the French clinical chemists and biochemists to organize and strongly back a medical and clinical section of the International Congress of Biochemistry.

planned for Paris in August of that year. It was represented to the Dutch chemists that the International Congress in Paris would be attended by biochemists and clinical chemists from all over the world, and that this would probably be a more favorable occasion and place to launch a new International Federation of Clinical Chemistry than would Amsterdam in the spring. It is to the very great credit of the Netherlands Society that they immediately agreed to withdraw their proposal and to meet with the other clinical chemists of the world in Paris that summer.

The members of the IUPAC Commission on Clinical Chemistry (Fleury, King, and Sperry), with the informal support of representatives of other known existing national societies, organized a meeting for the afternoon of July 24 in the Sorbonne. There was a large attendance by clinical chemists from many countries, several of them the official spokesmen of national societies. Dr. I. D. P. Wootton (London) acted as Secretary, and Dr. Ramon of Fleury's Department, an accomplished linguist, acted as interpreter. There was enthusiastic support for the proposal to found an international federation of clinical chemistry, and to set up a committee of persons who should be named as the official representatives of existing national societies. It was further agreed that the Commission of Clinical Chemistry of IUPAC should be enlarged to include these national representatives, and that it should act as the committee of the new International Federation of Clinical Chemistry. No constitution or settled rules were envisaged for the new Federation at that time, but a set of aims and objects was discussed and the following unanimously agreed to:

1. An international association of clinical biochemists shall now be formed, whose function shall be to advance knowledge in and promote the interests of biochemistry in its clinical (medical) aspects.

2. The Commission on Clinical Chemistry of the Section of Biological Chemistry of the International Union of Pure and Applied Chemistry shall act initially as the Committee of this International Association of Clinical Biochemists. The Committee shall subsequently include representatives from national societies.

3. The Committee shall set up subcommittees to deal with specific matters of a special nature (e.g., with internationally agreed ways of expressing results), as may seem indicated from time to time.

4. The Committee shall make attempts to ascertain the titles of existing societies of clinical biochemistry (or societies serving the same function under different names) and of their officers, and it shall endeavor to promote the foundation of societies in countries where they do not already exist.

5. From the lists of names of members of existing societies and from the names of such other persons as may be ascertained to be practicing clinical biochemistry, the Committee shall prepare an international list of clinical biochemists, with their addresses
and, where ascertainable, their principal scientific interests.

6. The International Association of Clinical Biochemists will meet during and before and after if deemed advisable the International Congresses of Biochemistry, and its members will use the Clinical Chemistry section of the Congress as a forum in which to present their communications.

7. The Committee shall represent to the local organizing committee of the Congress that symposia on subjects of special interest to clinical biochemists be held during the Congress and possibly during a day (or two) preceding the Congress.

8. The Committee shall encourage and attempt to promote regional meetings on a semi-international scale.

9. The Committee shall receive and circulate information regarding special new techniques and other matters of interest which might not be readily available through the ordinary vehicles of publication.

10. The Committee or a subcommittee shall arrange for the circulation of solutions and samples for the comparison of methods and results and shall attempt to standardize the expression of results of such methods as are expressed in units or other arbitrary terms.

In the summer of 1953 a new enlarged commission and committee met in Stockholm, at the International Congress of Chemistry which was being held there. The following attended and were received into full Titular Membership of the Commission on Clinical Chemistry by the Biological Section of IUPAC.

E. J. King, President (U.K.)
I. D. P. Wootton, Secretary (U.K., British Association of Clinical Biochemists).
P. Fleury (France, Société Française de Biologie Clinique).
A. Sobel (U.S.A., American Association Clinical Chemists)
W. M. Sperry (U.S.A.)

At their meetings the new Commission and Committee agreed to attempt the organization of regular congresses of clinical chemistry at two- or three-year intervals, to encourage the holding of regional semi-international meetings of clinical chemists in adjacent countries; to promote the foundation of new national societies of clinical chemistry in countries where there appeared to be sufficient numbers of interested persons and the foundation of “groups” of clinical chemists within other societies—biochemical, biological, chemical, pathological, etc.—where the numbers were not sufficient to make viable independent societies; to set up an international haemoglobin standard in co-operation with the Protein Commission of IUPAC, and to conduct an international trial of analytical methods commonly used in the clinical laboratory to compare the results obtained in different laboratories of the countries represented.

The first International Congress of Clinical Chemistry was appropriate-
ly held in Amsterdam in September, 1954. It was an outstanding success. People attended from almost every country in the world. There were over five hundred registered participants, and while most of them were from Western Europe, there were several from North America, and a few from as far away as Australasia, India, and South America. The organized symposia set a high scientific standard, and the short communications offered were of wide interest. Dr. J. C. M. Verschure and Dr. Th. Strengers (President and Secretary) and their Committee produced a model of organization and successful conduct which succeeding congresses have not excelled.

At this meeting an informally convened group of national representatives considered a proposal from the publishing firm of Elsevier that the newly founded Journal Clinica Chimica Acta should become the official organ of the International Federation of Clinical Chemistry. While there was some support for the idea in Western Europe, it was felt by those countries which already had their own Journals (e.g., Scandinavia, U.S.A., etc.) that it would not be wise for the new International Federation to have a new single publication of its own; but that the Federation should give its full moral support and backing to Clinica Chimica Acta.

For the Biochemical Congress in Brussels in 1955, a strong Clinical Chemistry section was organized, Committee meetings of the Commission and Committee were held, and there was a general meeting of the Federation, which was well attended, like those in Amsterdam and in Paris. There was also a very successful banquet, organized by the Belgian clinical chemists, which over a hundred attended.

Colonel M. E. Freeman replaced Dr. A. Sobel as the American representative in 1955.

An American invitation for a congress in New York in 1956 had been received in Amsterdam in 1954 and its acceptance was confirmed in Brussels in 1955.

The second International Congress of Clinical Chemistry was held under the auspices of the American Association of Clinical Chemists in the Barbizon-Plaza Hotel in New York in September, 1956. Dr. Albert E. Sobel was the President, and Dr. John Reinhold, Secretary and the American Committee furnished an excellent program in symposia and several sections; an excellent entertainment culminated in a banquet.

A Scandinavian invitation to a congress in Stockholm in 1957 was received and accepted at this time. It met under the Presidency of Dr. J. Lehmann, and this Third International Congress was as successful as its two predecessors.

In 1958 the Austrian organizers of the Biochemical Congress in Vienna arranged for a Clinical Chemistry section to be held within the Congress and for a banquet for the Federation. A general meeting was held after one of the scientific sessions, when the Committee again reported on the activities of the Federation, as it had
done at previous congresses. Several changes were made in the composition of the Commission and Committee: Dr. Wootton resigned as Secretary and was replaced by Colonel M. E. Freeman (U.S.A.); Professor N. F. Maclagan (U.K.) succeeded Dr. Wootton as the representative of the British Association of Clinical Biochemists; Professor J. Courtois succeeded Professor Paul Fleury as representative of the Société Francaise de Biologie Clinique; Professor K. Hinsberg became the representative of Germany, and Professor V. Orekhovich representative of the U.S.S.R. Dr. S. H. Jackson had been suggested from Canada as the representative of their Society of Clinical Chemistry. Professor R. Ruyssen was the representative from Belgium, and Dr. M. C. Sanz from Switzerland.

At the IUPAC Conference held in Munich in August, 1959, these names were submitted to and accepted by the Biological Section and the Council of IUPAC. Professor King resigned, and Colonel Freeman succeeded him as President. Professor Sperry retired under the IUPAC eight-year rule. The full composition of the Commission, subsequently confirmed as the Committee at the general meeting in Edinburgh in 1960 was, therefore, as follows:

Titular Members

M. E. Freeman (U.S.A.), President
B. Josephson (Scandinavia), Secretary
J. Courtois (France)
K. Hinsberg (Germany)

S. H. Jackson (Canada)
N. F. Maclagan (U.K.)
V. Orekhovich (U.S.S.R.)
J. C. M. Verschure (Netherlands)

National Representatives

R. Ruyssen (Belgium)
M. C. Sanz (Switzerland)

Titular members of an IUPAC commission receive their traveling expenses to meetings; their number is limited to eight. National representatives are full members of the commission, but do not receive their traveling expenses.

For 1960 an invitation had been sent from the British Association of Clinical Biochemists to hold a congress of Clinical Chemistry in Edinburgh. This was received at the meeting in New York in 1956 and was confirmed in Vienna in 1958. Under the presidency of Sir Rudolph Peters, a highly successful Congress of symposia, communications, and demonstrations was held in the week Aug. 14–19, 1960. There were nearly 600 registered participants. Dr. C. P. Stewart (Chairman), Dr. S. C. Frazer (Secretary, Organizing Committee) and Dr. B. C. Jocelyn (Secretary, Program Committee) provided excellent entertainment as well as an outstanding scientific program. At the Commission and Committee meetings it was reported that the Sub-Commission on Clinical Enzymes had met at Munich and had recommended that enzyme activities be reported in terms of micromoles of substrate transformed per minute per liter; that a new scheme was in hand to dispatch accurately analyzed samples of freeze-dried blood plasma to se-
lected laboratories in different countries to establish uniformity of analytical results; that an invitation had been received from the Canadian Society of Clinical Chemistry and the American Association of Clinical Chemists to hold a Congress in a border city in 1963; that in addition to the countries already having National societies of clinical chemistry, Yugoslavia, Portugal, Japan, and Australia were forming new societies. In addition, it was agreed that a sixth congress be held in Southern Europe in 1966; that a directory of member societies, including names and addresses of officers, be prepared, and that the officers of the Commission and Committee should now draw up a constitution and bylaws for the International Federation of Clinical Chemistry, which should be sent to the adhering national societies and subsequently discussed at ensuing Commission and Committee meetings and at the next General Meeting to be held—probably in a U.S.A.-Canadian border city. The following motion was put to the general meeting by the Commission and Committee and was adopted: be it resolved that the retiring Committee of the International Federation of Clinical Chemistry (IFCC) does now recommend to the IFCC that the arrangement begun in Paris 1952 and subsequently confirmed in Amsterdam in 1953, Brussels in 1955, New York in 1956, Stockholm in 1957, and Vienna in 1958, whereby the Commission on Clinical Chemistry of IUPAC acts as the Committee of the IFCC, be confirmed and continued. 

It is further recommended that in the future, as in the past, the membership of the Commission and Committee be reviewed at each of its meetings in the light of the wishes of the national societies of clinical chemistry, in order that proper representation of international clinical chemistry may be maintained, and that changes recommended shall be presented to the next ensuing general meeting of the IFCC and to the Biological Section of IUPAC for confirmation.

Summary

A Commission on Clinical Chemistry was formed in the Biological Section of IUPAC in 1951. The International Federation of Clinical Chemistry (IFCC) was founded in Paris in 1952. International congresses of clinical chemistry have been held in Amsterdam (1954), New York (1956), Stockholm (1957), and in Edinburgh (1960). Sections of clinical chemistry have been organized (with the co-operation of the Committee of IFCC) in the International Biochemical Congresses in Paris (1952), Brussels (1955), and Vienna (1958). The Commission on Clinical Chemistry acts as the Committee of the IFCC, and holds its meetings both at the international congresses of clinical chemistry and (usually) during the International Congresses of Biochemistry. The activities of the IFCC include the holding of congresses, the setting up of standards of reference (e.g., for hemoglobin), international trials of methods of analysis in clinical chemistry, the organization of schemes for
the preparation of standard sera for analyses, the encouragement of scientific activities within national societies, the formation of new societies and intercourse between them, and the holding of symposia in clinical chemistry organized by societies within countries as well as internationally.

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Clinical Enzyme Unitage

Interpretation and translation of the many arbitrary, varied, and unrelated clinical enzyme units in current use has been a source of misunderstanding and confusion among clinical chemists. This will continue to be a vexing problem until steps are taken to reach some agreement on a common unitage. The problem is obviously complicated by crude reactants and poorly defined reactions. It is, therefore, manifestly impossible to reach a completely satisfactory solution in every case. However, it was the considered opinion of the Joint Sub-Commission on Clinical Enzyme Units of the International Union of Biochemistry and the International Union of Pure and Applied Chemistry, meeting in Munich in 1959, that some clarification should be attempted, that dimensions should be in basic units, clearly defined and acceptable to all chemists and clinicians. The conclusion and recommendation of the Joint Sub-Commission was that wherever practicable clinical enzyme units should be defined as micromoles of substrate transformed per minute under specified conditions, and their concentration in terms of a milliliter (or liter) of serum, plasma, or urine.

Where this is impossible or difficult because of the complex nature of the substrate and uncertainty as to the nature of the products—e.g., with fats, proteins, or starch—the units should be expressed in terms of the analyzable substances or groups determined to measure the reaction, e.g., fatty acid, amino or carboxyl groups, and reducing groups. Thus, for instance, with a phosphate, the enzyme activity can be expressed as micromoles of organic phosphate hydrolyzed (i.e., of phosphate liberated) per minute per milliliter (or liter); with amylase, as micromoles of reducing group.

This recommendation is in conformance with the Report of the International Commission of the International Union of Biochemistry on Enzymes to be published by Pergamon Press in 1961. Information may also be obtained from the article by Hoffman-Ostenhoff and Thompson in Nature—181, 452 (1958).

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News Section

Association of Clinical Biochemists

Dr. Harold Varley has been elected Editor of the newly inaugurated Proceedings of the Association of Clinical Biochemists. He has informed this office that the new Proceedings will be made available to members of this association at a reduced rate. It is planned to publish four numbers of the Proceedings in each annual volume. A sufficient printing was made so that members who elect to subscribe to this journal may still receive the first number. Subscriptions to all AACC members will be priced at $2.25 per year. The price for nonmembers will be $3.00. In view of the fact that publication was started during the middle of a year, Dr. Varley has suggested that an initial subscription be priced at $3.37 for members and $4.50 for nonmembers, which would include the issues to appear through the end of 1961. Subscriptions to the Proceedings will be handled through Dr. Robert L. Dryer, Clinical Biochemistry Laboratory, University Hospitals, State University of Iowa, Iowa City, Iowa. Anyone interested in this offer should contact the national secretary no later than May 15.

The format of the Proceedings is very similar to the Biochemical Journal which is probably familiar to most of the members. Dr. Varley and his colleagues should be congratulated on what promises to be a very useful addition to our scientific literature.

Nominations for the Ames Award

Members are reminded that nominations for the Ames Award are due in the office of the national secretary by June 1, 1961. Those desiring to nominate individuals should submit five (5) copies of a nominating statement including a biographical sketch of the nominee and an evaluation of the publications or activities of the nominee which suit him for candidacy for the Award. It is hoped that the membership will give this matter their support. The complete nomination rules were published on page 94 of the February issue.

Thirteenth Annual Meeting, New York City

The Metropolitan-New York Section of the American Association of Clinical Chemists cordially invites all members of the Association and others interested in the scientific and professional aspects of clinical chemistry to attend the Thirteenth Annual Meeting of the AACC. The meeting will be held at the Barbizon-Plaza Hotel, New York City, Aug. 28-31, 1961.

Those planning to contribute scientific papers are reminded that abstracts have to be in the hands of the program committee by May 1. For preparation of abstracts and rules governing papers please see the Feb-

An application for advanced registration will be included in the June issue of the Journal.

Information concerning the scientific sessions can be obtained from Dr. Harry Sobotka, Chemistry Department, Mount Sinai Hospital, New York 29, N. Y.

Information concerning meeting facilities, exhibits (scientific and commercial), hotel facilities, and social events may be obtained from Dr. Bernard Klein, Chemistry Department, V. A. Hospital, Bronx 68, N. Y.

**Symposium Held on Cerebral Lipidoses**

A Symposium on the sphingolipidoses and allied diseases was held Mar. 29–30, 1961. The symposium was jointly sponsored by three organizations: Isaac Albert Research Institute of the Jewish Chronic Disease Hospital, Brooklyn; State University of New York, Downstate Medical Center, Brooklyn; and the National Tay-Sachs Association, New York.

The two-day conference was held at the Isaac Albert Research Institute and the Downstate Medical Center. Distinguished scientists representing leading American and European universities and medical centers offered a summation of their findings regarding Tay-Sachs disease and allied fatal degenerative diseases of the nervous system occurring in infancy and childhood. The multidisciplinary approach included pertinent studies in the biochemistry, histochemistry, neuropathology, electron microscopy, and genetics of the sphingolipidoses. Twenty-seven scientific papers were presented.