



IUPAP in Holland

The sixth General Assembly of the International Union of Pure and Applied Physics was held on July 8–10, 1948, at Amsterdam, Holland, in the University of Amsterdam. The report which follows is drawn slightly from the writer's memories and notes, mostly however from documents SG 48-6 and SG 48-8 recently received from P. Fleury, Secretary-General of the Union. It is stated in one of these that the complete *procès-verbal* of the meeting will eventually be published as a brochure, which will no doubt be thick. The writer confirms from his memories that the hospitality of the Dutch to the Assembly, collectively and to its individual members, was magnificent.

According to the record there were forty-five delegates at the meeting, including the president (Kramers), five vice-presidents (Bialobrzewski, Darrow, Darwin, Ewald, Jacobsen), the secretary-general (Fleury), the retiring treasurer (Perard). There were five delegates from the United States (Bozorth, Brickwedde, Curtiss, Darrow, Slater). There were only three from beyond the iron curtain, all from Poland. The official languages were English and French; G. A. Boutry served as interpreter. The sessions were long, crowded, interesting, and on the last day rather tiring. We may boast that we did at least four days' work in three.

The statutes of the Union were amended in various ways. The General Assembly is authorized to create commissions of the Union and to participate in "joint commissions" depending on this and other Unions. Of these commissions "some, devoted to the more extensive fields of physics, are called *affiliated commissions*; others, with more limited terms of reference, are called *special commissions*." All commissions are to report on their work through their secretaries to the General Assembly. The executive committee is empowered to create commissions, subject to retroactive approval by the General Assembly.

The formation, constitution, programme, and finances of the affiliated commissions will be submitted to the approval of the executive committee of the Union, which is to define their terms of reference as accurately as possible, and is to designate one or more of its members to represent the Union within each affiliated commission. These commissions may receive money from other sources than the parent Union. The members of these commissions, other than those designated by the executive committee as aforesaid, are to be nominated according to the statutes of the commissions themselves. As for the special commissions, their members will be elected by the General Assembly on the proposal of the executive committee, and the commissions themselves may co-opt new members subject to the approval of the executive committee; the terms of office extend to the next General Assembly, but the members may be re-elected. As for the joint commissions, our representatives on these are to be elected

by the General Assembly on the proposal of the executive committee; their terms extend to the next General Assembly and they may be re-elected. The rules under which joint commissions shall work shall be those formulated by the International Council of Scientific Unions.

The International Commission for Symbols, Units and Nomenclature (commonly known as SUN Committee) adopted as general rules: that only Latin and Greek letters (*italics included*) should be employed; that symbols for physical quantities should always be *italics*; that symbols for units should always be roman, and should be lower-case unless the unit is named after a person; that symbols for mathematical constants (such as e), mathematical operations (such as d and $curl$), numbers, chemical elements and dimensions should always be roman, excepting i and j ; that the comma is never to be used between digits of large numbers except where it stands for the decimal point; and that mass number and atomic number should be placed as superscript and subscript on the left-hand side of the symbol of the element in question. The SUN Committee further collated the symbols officially approved for a very large number of physical quantities and units in England, France, Holland, Switzerland and the U.S.A., and made recommendations of its own which will presently be published in a suitable journal.

The SUN Committee also made some general recommendations which will be published in an appropriate journal. It specified as unit of heat the joule, defined as 107 ergs (probably ten to the seventh ergs was meant); urged that the results of thermal measurements be expressed in joules; recommended that the definition of the absolute thermodynamic scale of temperature be based on a single fixed point, preferably the triple point of water; and decided that the Union should ask the International Bureau of Weights and Measures to adopt for international use the MKS system of units complemented by a yet-to-be-chosen electrical unit of the absolute practical system (the unit of force in this system to be called the "newton").

The Commission on Thermodynamics enlarged its name to "Commission on Thermodynamics and Statistical Mechanics"; desired to convoke a symposium on the present problems of statistical mechanics, if possible in 1949; and expressed the intent of carrying on the study of "the determination of thermodynamic quantities and symbols" in accord with the SUN Commission.

The Commission on Cosmic Rays plans to compile a directory of "cosmicians"; delegates Messrs. Auger and Clay to study the problem "of establishing a permanent equipment for research on cosmic rays at the Jungfrauoch according to an international plan"; asks UNESCO for a grant to re-equip the war-devastated cosmic-ray laboratory at Budapest; intends a symposium on cosmic rays to be held between July and September 1949; and with assent of the General Assembly, recommends the use of the words *positon*, *negaton*, and *nucleon* in the well-known senses (without deprecating the use of the term *electron* in its "present sense"), and favors the use of the word *meson* (rather than *mesoton*

and *mesotron*) on a tentative basis until the next General Assembly.

The Commission on Units of Radioactivity recommended that "international curie" be defined as the quantity of radioactive substance which gives 3.60 times ten to the tenth disintegrations per second. There was also a request from a certain member of the Commission that the name "neocurie" be given to ten to the sixth disintegration per second. This proposal has a long history which it is not worth while to relate in this place. The proposal was neatly circumvented at the meeting of the Commission, which eventuated in a recommendation to the International Council of Scientific Unions that a Joint Commission be formed, depending on both our Union and the International Union of Chemistry *and having ours for its mother-union*, the subject of which could be "the study of units, constants, standards and nomenclature of radioactivity." Unfortunately it now appears that the arguments of our representatives did not prevail on the International Council, which in September formed a joint commission having the Union of Chemistry as its "mother-union," and restricted in its title to "standards and units of radioactivity." Since each of the two unions is to have six members in the joint commission, it is perhaps unimportant which of the two is designated as "mother-union." At any rate, the question of the name (if it be worth while to give a name) of ten to the sixth disintegrations per second is now referred to the Joint Commission.

The affiliation of the International Commission on Optics was approved. This Commission met separately at Delft, and a report of its activities has been furnished from another source.

The Union recommended that every original article on physics be preceded by an abstract in either English or French, and rather vaguely implied that abstracts supplied by authors should be critically reviewed and amended by editors. It expressed the hope that eventually there will be two abstract journals, one in English and one in French, containing abstracts of all original articles on physics. It advises the editors of *Reviews of Modern Physics*, *Progress Reports* (of the Physical Society of London) and similar journals elsewhere consult with one another to ensure "that articles on a given subject do not appear simultaneously and also that important subjects are not overlooked." It suggests to the International Council and the Union of the History of Science that the development of physics since the death of Newton is worthy of more attention than it has so far received.

New or re-elected officers of the International Union of Pure and Applied Physics, with terms extending to the next General Assembly (probably not to be held until 1951) are: H. A. Kramers, president; P. Fleury, secretary-general; E. Amaldi, G. Bialobrzewski, K. K. Darrow, Charles Darwin, P. P. Ewald, C. J. Gorter, J. C. Jacobsen, P. Scherrer, J. C. Slater, vice-presidents; E. Bauer and C. J. Gorter, members of the Financial Committee. The office of treasurer is discontinued; the secretary-general (P. Fleury, 3 boulevard Pasteur, Paris 15, France) will assume the duties of the treasurer. It is

flattering that the United States is honored, and is the only country honored, by the election of *two* vice-presidents from among its citizens. American members of the various commissions are: F. G. Brickwedde on the SUN Commission, J. A. Beattie and J. E. Mayer on the Commission on Thermodynamics and Statistical Mechanics, C. D. Anderson on the Commission on Cosmic Rays, E. U. Condon on the Joint Commission on Physico-Chemical Data, G. Failla on the Commission of Radiobiology and L. F. Curtiss and R. D. Evans on the proposed joint commission on the units, constants, standards, and nomenclature of radioactivity.

A letter circulated by P. Fleury before the meeting showed that the Union is essentially dependent on UNESCO, whose contribution of \$15,300 for 1948 surpassed by manyfold all the contributions from the governments of the participating nations. This sum was allotted as follows: \$5500 to travelling-expenses of officers of the Union and members of commissions to Amsterdam or Delft; \$600 to travelling-expenses of president and secretary-general; \$2000 to travelling-expenses of delegates to the nearly-simultaneous congress on the physics of metals; \$3200 to publications and \$4000 to grants to physicists for foreign travel. In addition the Union had \$2734 left over from the subsidy of the previous year, which in April its officers were planning to use toward the expenses of a meeting at Amsterdam intended to organize a later meeting on low temperatures.

—Karl K. Darrow

APS at Berkeley

The 290th meeting of the American Physical Society was held in Berkeley, California, from February 3 to 5, 1949. It was attended by over two hundred fellows and members of the Society, the largest attendance on record for a West Coast meeting. This remark occurs regularly in describing successive meetings, and is good evidence of the growing membership of the Society.

The sessions were held at the University of California's LeConte Hall, the building of the physics department, where the department members and the radiation laboratory staff acted as hosts to the gathering. The size of the attendance was still manageable and this contributed very much to the pleasant atmosphere which allowed useful exchanges of ideas and smaller gatherings among people interested in some special subjects.

The first morning was devoted to two invited papers on molecular and chemical physics and to some contributed papers on theoretical physics and x-ray physics. The afternoon meeting opened with two invited papers on the emission of protons and deuterons by carbon under ninety Mev neutron bombardment. The emission of deuterons and several of the detailed features of this phenomenon are somewhat different from what one would expect on the basis of extremely simple schematizations, and the experimental observations and the theory, both incomplete for the time being, were presented. This was followed by a series of contributed papers on geomagnetic and atmospheric effects in cosmic rays. These were characterized by admirably high accuracy in the experimental