Editorial overhead: These calculations do not include editorial, bibliographic and clerical overhead. The National Research Council is continuing its efforts to secure adequate support for international scientific bibliography and abstracting. If these efforts meet with further success such support may be expected, at least at the outset, largely to meet such overhead.

The above calculations are based on twelve monthly numbers annually, the abstracts classified in subject-matter sections with cross references, so that the material in a particular field can be consulted as conveniently as in a journal of more limited scope. In order, however, to provide a more highly classified instrument, especially for the systematist and others particularly served by such an arrangement, and also to bring all material for a given year and in a given category together, the committee has investigated the additional expense involved in cumulating the material at the end of the year and issuing it in one or more bound volumes, after which the monthly numbers, printed on less costly paper, can be discarded, used by the subscriber for making special bibliographies, or otherwise utilized. In the cumulated volume the material having appeared under a given section in the monthly numbers would be brought together and subjected to a more detailed classification than is practicable in the monthly issues—a classification as detailed as a careful consideration of the needs of the various groups may dictate. In addition to the more detailed classified cumulated arrangement, the annual volume or volumes would contain detailed alphabetical subject and author indexes, which have proved of such exceptional utility and supplement the classified arrangement in an important way, as instruments for locating desired information.

The committee is informed that the cumulated bound volumes would increase the estimated cost given above about 25 per cent., or a total for the monthly numbers and the annual cumulated volumes of $69,380.00.

Leaving the estimated annual income from 1,000 institutional subscribers the same, namely $15,000, the balance of $54,380 of the total manufacturing cost to be met by individual support, should each of the 6,000 individuals who are members of the societies invited to adhere to the Union support of a unified system, would be about $9.00 per individual. (This cost to the individual is well below that of the uncumulated journal bound by the subscriber; the large saving on wholesale binding more than offsets the added cost due to the cumulation.) It needs to be borne in mind that under a system of uniform support this sum would secure for the individual a monthly current abstracting journal and an annual classified and indexed master key to the world's biological literature, the latter bound in two volumes and fully ready for use without further expense of any kind.

The exigencies of the case require that the financial responsibility for such an enterprise be assumed initially largely by the workers in America, an obligation which can not well be shirked at this time, especially in view of the benefits which have for so long been reaped by American workers from the responsibilities carried in Europe. But assuming that there will be such assurances from American biologists as to make the venture financially possible, it is clear that the successful production of such a comprehensive service, *i.e.*, the prompt and adequate abstracting of approximately all the world's biological literature, presupposes the widest cooperation among biologists everywhere. In this cooperation the relation to the enterprise of all collaborating biologists would be the same, as now is the case in *Abstracts of Bacteriology, Botanical Abstracts,* and other services, European and American. If undertaken, the initial years of the service would constitute a trial period from which such readjustments, both as regards character of the journal and its direction, should come as experience and changed conditions may dictate. Indeed, this degree of plasticity should constantly characterize the service.

A. PARKER HITCHENS,
D. R. HOOKER,
C. A. KOFOID,
I. F. LEWIS,
Representing the Union of American Biological Societies.
E. D. BALL,
C. E. MCCLUNG,
J. R. SCHRAMM,
A. F. WOODS,
Representing the Division of Biology and Agriculture of the National Research Council.

THE INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

THE annual meeting of the Fourth International Congress of the Union of Pure and Applied Chemistry was held in Cambridge, England, on June 17, under the presidency of Sir William Pope, professor of chemistry of Cambridge University, and was attended by representatives from twenty-one countries, nearly four hundred members and guests being present at the annual banquet.

The meeting lasted four days and among the important decisions reached by the various committees were the following:

The Committee on the Reform of Nomenclature of

Inorganic Chemistry decided to constitute a permanent committee composed of the editors of the *Journal* of the Chemical Society, *Chemical Abstracts, Gazzetta Chimica Italiana, Helvetica Chimica Acta, Recueil des Travaux Chimiques des Pays-Bas,* and the *Bulletin* de la Société Chimique de France. Each country is to send its suggestions to these various publications which will be duly qualified to submit them for general discussion.

The writing of formulas of acids, bases and salts in each country should conform to the usual custom in any particular language, that is, in the countries of Anglo-Saxon languages one would write HCl, H_2SO_4, $BaCl_2$, Na_2SO_4, $Ba(OH)_2$, etc., whereas in the countries of Latin languages one would write ClH, SO^4H^2, SO^4Na^2, Cl^2Ba, $(HO)^2Ba$, but in the same language one should not write sometimes ClNa and sometimes NaCl, nor sometimes SO^4Na^2 and sometimes Na_2SO_4.

The word hydrate will be reserved for combinations containing H_2O like the hydrate of chlorine, Cl_2 n H_2O; the hydrate of sodium sulfate, Na_2SO_4, $10H_2O$; the word hydroxide will be reserved for chemical combinations containing OH; aluminum hydroxide, $Al(HO)_3$; barium hydroxide, $Ba(OH)_2$.

The Committee for the Reform of Nomenclature in Organic Chemistry decided to increase the permanent committee composed of the editors of the *Journal* of the Chemical Society, *Chemical Abstracts, Bulletin* de la Société Chimique de France, by adding the editors of the *Gazzetta Chimica Italiana,* of the *Helvetica Chimica Acta* and of the *Recueil des Travaux Chimiques des Pays-Bas.*

The Geneva nomenclature will be used as basis for new proposals.

The Committee on the Reform of the Nomenclature of Biological Chemistry adopted the following resolutions dealing with the most general names:

1. The name of a new compound of which the chemical constitution is known must be made up in accordance with rules of nomenclature of organic chemistry;
2. The word *glucid* will be used to designate the group of substances which comprises the simple reducing sugars and substances which give one or several of these sugars by hydrolysis;
3. The word *lipoid* will no longer be used;
4. The word *lipide* will designate the group of substances which comprises the fat bodies and esters which possess analogous properties (lecithines, phosphatines, etc.);
5. The word *protide* will designate the group of substances which comprises the natural amino acids and substances which by hydrolysis give one or more of these acids.

The Committee on Bibliography recommended:

That the bureaus of documentation unify as much as possible their methods of work in accordance with the principles adopted by the International Institute of Bibliography and the Subcommittee on Bibliography of the League of Nations;

That in view of the resolution of the Subcommittee on Bibliography of the League of Nations, the chemical publications send at least two copies and preferably five copies of their annual index to the "International Institute of Bibliography" in order that this institute be in a position to draw up the "Central Annual Bibliographical Index of Authors' Names";

That the general secretary of the union make every possible effort to persuade those publications which have not yet come to a decision to conform with the two following resolutions which were passed at the previous congress;

That all original papers in chemistry should bear the address of the author or that of the laboratory where the work was carried out;

That the journals give a résumé of their articles in one of the languages accepted by the editorial board of the "Annual Table of Constants," in such a form that it could be published in an abstract journal.

The Committee on Physico-Chemical Standards recommended:

That the Bureau of Physico-Chemical Standards investigate, through circular letters addressed to the directors of the research laboratories, what are the new physico-chemical standards; the preparation of which would be most urgent.

The Committee on Pure Products for Research, in answer to the question asked by the International Oceanographic Association of the Mediterranean, replied that pure sodium chloride may replace standard sea water for the volumetric determinations actually in use in oceanographic work.

The Committee on the Bibliography of Industrial and Technological Products recommended:

That the Bureau of Vegetable Raw Materials, which is actually working in France, be incorporated in the Bibliographic Bureau of Industrial and Technological Products and that the Musée de la Faculté de Pharmacie de Paris and the Laboratoire Central d'Etudes et d'Analyses des Produits Médicamenteux et Hygiéniques (Laboratoire de la Commission du Codex) be incorporated in the Central Office.

The name of these united bureaus shall be "Service de Documentation sur les Matières Premières et les Produits Industriels" (Bureau of Bibliography of Raw Materials and Industrial Products).

The Committee on the choice of a Thermochemical Standard took note of the decision reached by the Bureau of Standards, Washington, that the benzoic acid prepared by this bureau can not be obtained as standard substances for calorimetric determinations except for purely scientific purposes and that it be-

comes therefore necessary to employ for technical purposes, in the determination of heats of combustion of solid and liquid fuels, benzoic acid from other sources. The committee will eventually draw up specifications for the approval of samples of benzoic acid.

The adoption of the conversion factor 1 cal. 15° = 1.184 joules was also recommended.

The Committee on the Tables of Constants recommended the following changes regarding physico-chemical symbols:

Molecular rotation is to be defined by the relation

$$(M) = \frac{M \times (\alpha)}{100}$$

the employment of "ω" for the specific magnetic rotation and "Ω" for molecular magnetic rotation is recommended; the molecular magnetic rotation is to be defined by the relation

$$(\Omega) = \frac{M \times (\omega)}{15}$$

The committee further recommended:

That a subcommittee be appointed, composed of Professors Cohen, Findley, Marie and an American member to be designated by the National Research Council. This committee is to consider further changes and additions in physico-chemical symbols.

The Committee on the Study of Ceramic Products adopted the definition of the word "ceramic" and the classification of various products under that name as adopted by the American Ceramic Society.[1]

The Committee on Food Preservation requested:

That the subcommittee of five members, composed of Messrs. Alsberg, Bordas, Paterno, Pondal, Voerman, present at the next congress a general report on the bibliography which has been gathered up to the present and which could be assembled from now until then in regard to all matters relating to food legislation in the various countries;

Also that at the next congress the delegates of the various countries, taking into consideration the legislation in force at the time, present their conclusions of the effects of employing the following products as food preservatives: benzoic acid, boric acid, salicylic acid, sulfurous acid; sulfates and formaldehyde; for the purpose of undertaking a systematical and physiological investigation on the possibility of using chemical products in food preservation.

The Committee on Scientific and Industrial Ownership presented the following resolutions:

1. The committee, considering that in the Latin group, which is composed of countries granting patents without examination, the unification of legislation appears to be more capable of realization than in the others, invites these countries to begin a grouping as soon as possible with the idea of forming a Union of Uniform Legislation;

2. Considering that the original purpose toward which one must work should be to permit research workers to protect their discoveries and considering that on the other hand research workers can not carry out their researches in secret but must on the contrary be able to publish the results of their work as they are obtained;

The committee resolved:

That it is inadmissible that one should oppose to the holder of the applicant of a patent the results of his own work during a certain period of time after it has been published;

3. The committee declares that a purely scientific discovery should be legally protected;

4. A proper definition of this new legal right will be studied by the committee;

5. In order to secure the coordination of all efforts the president of the committee is appointed as a delegate to the Committee on Intellectual Cooperation of the League of Nations and to the International Chamber of Commerce to present and uphold the views of the committee.

The Committee on Industrial Hygiene requested the council of the International Union to give a prize for the best published essay on smokes, gases, fogs and noxious vapors to be met with in manufacturing; their elimination; the protection against their effects. The essays submitted should be general and descriptive in character, should include the latest progress in their particular subject and should be within the reach of the general reading public.

The committee also requested that the council of the union should establish a prize to be given to the inventor of an apparatus of recent construction for the suppression of smoke. In case no recent inventor could be found the prize should be given to that person who had done the greatest amount of work and obtained the best results on the problem of the suppression of smoke.

The committee planned to report at the next congress forms of apparatus intended to combat incipient intoxication from poisonous gases in factories and to gather a bibliography of legislation concerning industrial hygiene in various countries and analytical methods for the determination of hydrofluoric acid in smokes and vapors with special reference to superphosphate manufacture.

All these resolutions and recommendations were duly approved by the council and by the general assembly. The congress decided to meet in Copenhagen in 1924. Two new vice-presidents were elected, Professor Ernest Cohen (Netherlands) and Dr. Sakurai (Japan).

The congress decided in closing to create a committee to cooperate with those organizations which undertake to exchange students and professors be-

[1] Journal of the American Ceramic Society, Vol. III, 526 (1920).

tween the universities of the various countries with the idea of cooperating with these organizations and of bringing about such exchanges among professors of chemistry.

J. E. ZANETTI

SCIENTIFIC EVENTS

THE OPTICAL SOCIETY OF AMERICA

THE Eighth Annual Meeting of the Optical Society of America will be held at Cleveland, Ohio, Thursday, Friday and Saturday, October 25, 26 and 27. Hotel headquarters will be at the Hotel Cleveland. All sessions for the reading of papers will be held in Room 86, Physics Building, Case School of Applied Science, and are open to all persons interested in optics.

The address of the retiring president, Dr. Leonard T. Troland, will be on "The Optics of the Nervous System." Professor A. A. Michelson will read, by invitation, a paper on "The Limit of Accuracy in Optical Measurement," and Mr. Frederic Allen Whiting, director of the Cleveland Museum of Art, will address the Society on "The Optical Problems of an Art Museum." Mr. M. Luckiesh and Mr. A. H. Taylor, of the Nela Laboratory of Applied Science, will give a demonstration of new apparatus for the projection of mobile colored patterns. There will be a full program of contributed papers and committee reports, on general optics, vision, colorimetry, photometry, spectroscopy and instruments.

Arrangements are being made for visits to: The Nela Research Laboratories, The National Lamp Works, Warner and Swasey and The Cleveland Museum of Art.

The advance program containing abstracts of papers will be mailed to all members about October 5 or 10. In so far as the number of copies available may permit, it will also be mailed to others on request, addressed to the secretary, Irwin G. Priest, Bureau of Standards, Washington, D. C.

Since there are other large conventions in Cleveland at the same time, hotels are likely to be crowded, and members and others expecting to attend are advised to make their hotel reservations at once. Dr. W. E. Forsythe, Nela Research Laboratories, Nela Park, Cleveland, is chairman of the Local Committee on Arrangements for the meeting.

IRWIN G. PRIEST,
Secretary

EXPLORATION OF SAN JUAN COUNTY, UTAH

AN expedition sent out by the National Geographic Society, which has been assembling its personnel and equipment at Gallup, New Mexico, started on September 17 for a reconnaissance of the San Juan country of southeastern Utah, hitherto unexplored.

Leaving Gallup the party used automobiles, carrying its supply of gasoline in drums to Kayenta, Arizona, and then planned to travel on horseback across the Utah line into a land of knife edge canyons, bold buttes and green-topped mesas until the pack animals encounter impassable barriers. Then it will proceed on foot.

The expedition will attempt a preliminary survey of the region between the Colorado and San Juan rivers, much of it never traversed by white men, which constitutes one of the largest unexplored areas in the country. The area of observation lies within San Juan County, a county which is larger than the State of New Jersey.

Dr. Neil M. Judd, archeologist, of Washington, leader of the National Geographic Society expeditions which excavated and studied the pre-Columbian communal dwellings of Chaco Canyon, New Mexico, heads the Utah expedition. Accompanying Dr. Judd is Edwin L. Wisherd, a staff photographer of the society, and a party of assistants and guides.

Dr. Judd's primary attention, on his reconnaissance, will be to determine whether the cliff dwellings and skeletal remains, the traces of pottery, basketry and cliff inscriptions believed to abound will justify other larger expeditions of the society which shall include experts in every phase of scientific inquiry which the area warrants.

Evidence of the outskirts points to cave dwellers, as well as cliff dwellers in this territory, for early Indians seem to have found shelter in the egg-shaped and shell-smooth caves of the vari-colored rock.

The fantastic beauty of this rugged desert, with its red rock gashes, its ever-changing color, and gargoyle promontories offers exceptional photographic opportunities; and it is possible that an incidental result of the trip will be the finding of such other spectacles as the natural bridges and rocky spires which occur in contiguous areas.

A NEW WILD LIFE PRESERVE

THAT many of our handsomest and most desirable native plants are becoming increasingly scarcer has been a matter of observation for many years. In a number of localities such exquisite plants as rhododendron, arbutus, fringed gentian, lady's slipper and various species of wild lilies have become practically extinct due to cultivation, grazing, drainage, lumbering and the promiscuous picking of flowers. One of the remedies frequently suggested by plant conservationists is the establishment of wild-life sanctuaries or preserves in which the endangered species can grow without molestation.

The efforts of the conservationists seem to be bear-