

sideration being given to the nitrogen requirements of the organisms. Inasmuch as it was well known that yeast extract stimulated growth of the organisms, this material was included in the studies along with various organic and inorganic compounds of nitrogen, the yeast extract being used in amounts proportional to its nitrogen content. In all the experiments conducted the yeast extract was found to stimulate oxygen consumption, and therefore respiration, to a considerably greater extent than any of the nitrogen compounds used. The extent of respiration was somewhat proportional to the amount of yeast extract in the medium.

In reporting these investigations at the thirty-fourth annual meeting of the Society of American Bacteriologists at Ann Arbor, in December, 1932, and more completely in papers that are now in the process of publication, the conclusion was drawn that the stimulative effect of the yeast extract may have been due, aside from the nitrogen it contained, to other factors which would serve to stimulate oxygen consumption. While no reference has been made in these reports to a respiration co-enzyme in the yeast extract, the suggestion has been offered that the stimulation may have been caused by vitamins, auximones or other similar substances.

In view of these results, the author was unusually interested in the recent report in *SCIENCE* by Allison,

Hoover and Burk,¹ who reported to have found a specific factor which is essential for respiration. In studies with the root nodule bacteria of leguminous plants these investigators found that respiration increased from a small value in the presence of a trace of the factor, to as high as 1,000 cmm O₂ per mg of dry weight per hour at 31° C. in its presence. This factor, considered by them as a respiration co-enzyme, was secured by extracting commercial sucrose with absolute alcohol. It was also claimed that, aside from furnishing readily available nitrogen, the chief rôle of the yeast water in culturing the nodule bacteria is to supply a source of the essential respiration factor.

The conclusions concerning the stimulative action of yeast extract on the respiration of the root nodule bacteria are in agreement with and confirmatory to the results secured in this laboratory. Our work has not as yet been directed toward the characterization and isolation of the stimulative factor, and it has, therefore, not shown the presence in yeast extract of a "specific factor essential to respiration." But the preponderance of evidence points to the conclusion that the beneficial effects of the yeast extract lies chiefly in its content of readily available supply of nitrogen and energy material.

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SOCIETIES AND MEETINGS

INTERNATIONAL GEOGRAPHICAL CONGRESS OF 1934

THE International Geographical Congress of 1934 will be held in Warsaw, Poland, from August 23 to 31, inclusive, under the presidency of Dr. Isaiah Bowman. Organization of the congress is in the hands of a Polish executive committee, of which Professor Eugene Romer is chairman and Professor Stanislas Pawlowski general secretary. The address of the congress and its secretariat is High School of Commerce (Szkola Główna Handlowa), 6 Rakowiecka Str., Warsaw, Poland.

At a time when financial depression and unfavorable exchange rates may cause some to hesitate about planning participation in the congress, it seems appropriate to review the great advantages to be gained by such participation. Americans who attended the recent congresses in Cambridge (1928) and Paris (1931) and who took part in the interesting and instructive excursions arranged by the local organizing committees found the experience highly profitable.

One of the principal objects of the congress is to bring together, from all parts of the world, the outstanding leaders in all phases of geography. The

opportunity to become personally acquainted with these men, to learn about their most recent investigations and to make them acquainted with one's own work is to be highly prized.

At the Cambridge meeting official delegates from thirty-one countries were present. At Paris forty-six countries were represented. Experience shows that in these different countries, with their differing opportunities for pursuing investigations of various phases of geography, there frequently develop marked differences in methods of study and in nature of results secured. The consequent interchange of ideas effected at the congresses is in the highest degree stimulating.

America stands for certain types of work in geography which have been developed in this country to an extent not observed elsewhere. The prestige enjoyed by our work abroad, as well as its progress at home, will be enhanced by its effective representation at the congress. An obligation thus rests upon American geographers to do all in their power to assure effective representation of their science at Warsaw. In view of the fact that American geography is to be honored at the congress by having one

¹ *SCIENCE*, 78: 217-218, 1933.

of its leaders as president of the international gathering, it seems peculiarly appropriate that American geographers should make a special effort to send to Warsaw a large and representative group.

As a compliment to Professor Eugene Romer and in recognition of his long and distinguished service in the field of Polish cartography, it has been suggested that the American delegation might devote special attention to preparing an effective cartographic exhibit at Warsaw. Steps toward achieving this end are being taken.

Attention is directed to the fact that the meeting of the congress in Warsaw not only offers an unusual opportunity for American geographers to study, under exceptionally favorable conditions as regards both expense and skilled leadership, both the physical and the human geography of Poland on the excursions that precede and follow the congress, but also provides the occasion for visiting other parts of central and eastern Europe and the Near East.

Any person engaged in scientific research in the field of geography or interested in the results of geographical research may enroll as member of the congress. Moreover, representatives of government institutions, scientific societies, universities and other educational institutions, in countries belonging to the International Geographical Union (this includes the United States), may take part in the congress; these delegates should duly enroll as members of the congress. Persons not geographers but who have geographical interests, or who represent institutions not primarily geographic but which have large geographical interests (such as federal and state geological surveys, departments of agriculture, museums of natural history, etc.), are welcome. If such individuals plan for other reasons to be in Europe in the summer of 1934, they should arrange if possible to participate in the congress. Persons belonging to the families of members of the congress may take part in the congress, if they duly apply for membership to the secretariat.

Admission as a member of the congress will be granted upon filling in the form of application for membership and upon payment of the fee of 40 zlotys (approximately \$7.50 at current exchange) and 10 zlotys for each person accompanying the regular

member. Application blanks may be secured from the Secretary of the National Committee of the United States, Mr. W. L. G. Joerg, American Geographical Society, Broadway at 156th Street, New York City.

It is earnestly recommended that American geographers, whether or not they are able to go to Warsaw, should enroll themselves promptly as members of the congress. It is understood that the postal authorities may decline to issue a money order in zlotys, in which case prospective members should ascertain, at post office or bank, the rate of exchange on the date the money order is to be secured and get a money order for the equivalent, payable in American dollars. The value of the moderate enrolment fee will be returned in double measure in the form of publications of the congress. At the same time valuable support will be given to those charged with organizing the congress and a representative American membership will be assured.

The United States Government has taken official cognizance of the International Geographical Congresses, and through the Secretary of State has arranged for representation of the Government by a limited number of delegates. It is requested that those planning to be present at Warsaw notify the secretary, Mr. W. L. G. Joerg, in order that suggestions for appointment as delegates may in due course be made from among the number who will attend. Attendance of American delegates is always at their own expense.

Members may be appointed to represent public and scientific institutions, including universities. In such case no formality is necessary except notification by the institution to the secretariat of the congress.

Those planning to attend the congress will find further data of interest to them in the circulars of information issued by the committee on organization. Copies may be secured by addressing Mr. W. L. G. Joerg, American Geographical Society, Broadway at 156th Street, New York City.

DOUGLAS JOHNSON, *Chairman,*

CURTIS F. MARBUT, *Vice-chairman,*

National Committee of the United States

W. L. G. JOERG, *Secretary,*

International Geographical Union.

SCIENTIFIC APPARATUS AND LABORATORY METHODS

THE DEMONSTRATION OF INTACT MAMMALIAN AND AMPHIBIAN NERVOUS SYSTEMS BY MACERATION OF WHOLE ANIMALS

THE demonstration of intact nervous systems of common laboratory animals has proved to be a useful

device in the teaching of undergraduate biology. The method of producing such an effect is simple.

In the case of the frog, simple immersion in a solution of 30 per cent. nitric acid for a period of 24 hours results in complete decalcification of all bone, the disappearance of all connective tissue and more