

he answered that he was not willing to spend his days in a wilderness of pedantry that his children might enjoy an orthographical Canaan; and *mutatis mutandis* the same answer may be given in this case. But a more pertinent answer is, to my mind, this, that the attempt to reorganize the perceptions of the human mind in respect to space and time is doomed to failure. "Which of you by taking thought can add one cubit unto his stature?" I believe that these ultimate perceptions are the same for all men now, have been the same for all men in the past, and will be the same for all men in the future. I believe, further, that this is true because the universe has a real existence apart from our perceptions of it, and that through its relations to our minds it imposes upon us certain common elementary notions which are true and shared by everybody.

Therefore, from my point of view, I can not see in the principle of relativity the ultimate solution of the problem of the universe. A solution to be really serviceable must be intelligible to everybody, to the common man as well as to the trained scholar. All previous physical theories have been thus intelligible. Can we venture to believe that the new space and time introduced by the principle of relativity are either thus intelligible now or will become so hereafter? A theory becomes intelligible when it is expressed in terms of the primary concepts of force, space and time, as they are understood by the whole race of man. When a physical law is expressed in terms of those concepts we feel that we have a reason for it, we rest intellectually satisfied on the ultimate basis of immediate knowledge. Have we not a right to ask of those leaders of thought to whom we owe the development of the theory of relativity, that they recognize the limited and partial applicability of that

theory and its inability to describe the universe in intelligible terms, and to exhort them to pursue their brilliant course until they succeed in explaining the principle of relativity by reducing it to a mode of action expressed in terms of the primary concepts of physics?

WILLIAM FRANCIS MAGIE

PRINCETON UNIVERSITY

THE MOVEMENT FOR SCIENTIFIC INTERNATIONALISM AT THE HAGUE

PEDAGOGY lays ever greater emphasis on positive suggestion of the things that are good to do, rather than on negative prohibition of what is undesirable. The peace movement, as one of the biggest educational problems now in hand, is applying this principle in many ways. Everything which makes more evident the common interests of mankind tends toward peace as it awakens the larger loyalties which more and more take the place of primitive Chauvinism. The things which are specifically national are few and the things which are co-extensive with human thought and human effort, many. If a realization of this fact were deep enough and wide enough men would altogether refuse to allow their interest and their public moneys to be diverted from the great common task, the advance of knowledge and its application to human welfare, by the little jealousies between groups which happen to live under different political organizations. The Foundation for the Promotion of Internationalism at The Hague has for its purpose the furthering of those movements for intellectual and social progress which are international in scope, and by so doing it plays an important part in the growth of the spirit of world peace.

It is obvious that, if such ends are to be realized, the efforts made must tend to meet practical needs in various fields of thought and action and not merely express a vague aspiration toward abstract ends. The Foundation for the Promotion of Internationalism has therefore addressed itself to a systematic study of the various movements for inter-

nationalism and the needs which they indicate, the shortcomings of previous efforts and the most profitable lines for future advancement. Two monographs already prepared by Dr. P. H. Eijkman, Director of the Preliminary Office of the Foundation, deal with "L'Internationalisme Medical," 1910, and "L'Internationalisme Scientifique," 1911, and these volumes furnish a most impressive argument for the "organization of organizations" contemplated by the foundation.

The advantages to be gained by international organization may be best estimated perhaps by considering what national associations have already accomplished within their more limited territory. The services of the American Association for the Advancement of Science, the American Medical Association and the American Public Health Association and the American Chemical Society, for example, have been notable forces in their respective fields. Such organizations serve a twofold purpose. On the one hand, by their meetings and by their publications they serve as a medium of communication between their members, bringing the experience of each to the service of all. On the other hand, they serve as an authoritative medium of communication with the public, furthering as occasion demands a popular knowledge of the subjects with which they deal, and presenting a united influence upon official action to which their sciences are, or should be, related.

The transition from such national societies to international ones has been a natural and inevitable one, and has led to the formation of world organizations and world congresses, in profusion. How numerous such international efforts have been no one probably realized until Dr. Eijkman brought them together (for medicine and for pure science and letters) in the two volumes to which reference has been made. In the second of his books he lists over 600 international organizations and Professor Baskerville in an article on International Congresses in *SCIENCE* for November 11, 1910, catalogues 125 international congresses in science alone. These diverse international societies and congresses have proved of great

importance; but they fall far short of the needs, for a world organization of intellectual effort. For the most part there has been no permanent organization to connect adequately the work of successive congresses and there has nowhere been a due correlation between the work of different groups, drawn together often by some local or temporary need. There is duplication, on the one hand, with unoccupied fields on the other, and while certain congresses have been markedly successful, others have fallen short of reasonable expectation. All these defects must be to some extent inherent in human undertakings; but they could surely be minimized by a central bureau which could correlate the more important lines of intellectual activity and give to each of them a permanent organization.

Such an idea led to the establishment of the Office Centrale des Institutions internationales at Brussels and to the calling together under its auspices, of the *Congres mondial des Associations internationales* in 1910. The field covered by this congress was so wide, however, that it could hardly hope to accomplish very much along specific lines. Every sort of international movement was included in the Brussels program and it is a somewhat large task to organize all at once the whole field of international life. The Foundation for the Promotion of Internationalism at the Hague has wisely determined to address itself rather to the specific problems presented by certain definite branches of science rather than to any all-embracing programs.

The most promising line of advance, as Dr. Eijkman has well shown in his volume on "L'internationalisme scientifique," has been marked out by the development of permanent organizations, of international scope, but dealing with related problems and representing naturally cooperative groups. Of these the *Association internationale des Academies* furnishes the most notable example. Representing as it does twenty-two academies in the leading scientific nations of the world, it occupies an authoritative position in pure science and letters and it has undertaken since its first general meeting in 1901 a series of

practical tasks of the first magnitude, tasks which only a world organization could successfully undertake. Among them may be mentioned the publication of a complete edition of the works of Leibnitz, an encyclopedia of Islam, a critical edition of the Mahabharata, an annual publication of physical and chemical constants, the measurement of an arc of the thirtieth meridian, the organization of a central committee for the study of the brain and the development of the work of the Institut Marey and the laboratories on Mont Rose.

The International Association of Academies still lacks, however, a permanent home and an opportunity for correlating its efforts with those of similar organizations dealing with related work in various branches of applied science and art. This is the dream of the Foundation for the Promotion of Internationalism, a series of such strong international bodies representing the most important fields of intellectual endeavor, all with permanent bureaus at the Hague, and all working together on definitely correlated lines for the organization of human effort.

This is not merely a dream. Two such bureaus are already well under way and a third has just come into existence. The Bureau de la Commission permanente des Congres internationaux de Medecine was established at the 16th International Congress of Medicine at Budapest in 1909. Its functions include the general planning of congresses and the arbitration of disputed points, the designation of place of meeting, standards for membership, official languages, number and scope of sections and number of papers presented, scrutiny of the votes passed by sections, correspondence with other international congresses and societies in order to avoid conflict, the promotion of the study of medical questions requiring international cooperation and the institution of commissions for such purposes. At the Brussels meeting of the International Congress of Pharmacy in 1910, a similar organization was effected in the shape of a Bureau permanent de la Federation internationale de Pharmacie, also with offices at

the Hague. The objects of this international federation are fully and definitely outlined and include the collection and dissemination of data in regard to scientific and practical pharmacy, the promotion of uniformity in educational requirements for pharmacists, the study and dissemination of information in regard to laws relating to pharmacy, the organization of international pharmaceutical congresses, collaboration with other international societies and many more. The third permanent international bureau at the Hague has just been established in the form of a Bureau permanent de l'Institut international de Statistique.

The Foundation for the Promotion of Internationalism, which was an active agent in the creation of these three bureaus, is anxious to continue its admirable work by the development of similar permanent organizations in related fields. Dr. Eijkman, its director, is at present in America with a view to arousing interest in three such undertakings which seem of immediate practical importance. The first of these is a permanent international bureau for pure science and letters which would seem to be a natural development of the International Association of Academies and might properly be undertaken under its auspices. The second is a similar bureau for hygiene (public health would be a far better term, but the word hygiene is probably too firmly entrenched in European parlance to be dislodged). Public health has far outgrown the bounds of medicine, since it includes specialists in engineering, biology, bacteriology, chemistry and statistics, as well as in medical science; and the Permanent Commission of International Medical Congresses at its first meeting in London endorsed the plan for a bureau of hygiene at the Hague. No field of scientific effort has more manifold international relations than public health and it is to be hoped that the International Congress of Hygiene and Demography may take definite steps toward this end at its meeting in Washington next fall. Finally, the Foundation for Internationalism hopes to secure the establishment of a third new bureau

dealing with technology; and the International Congress of Applied Chemistry which meets in Washington and New York in September might well institute a movement toward this end.

These plans for international scientific bureaus at the Hague have the cordial support of the government of the Netherlands which is financing the bureaus so far created and the cooperation of the leading European men of science. The Preliminary World Committee includes in a list of several hundred the names of Arrhenius, v. Babes, Bang, Bertillon, Ehrlich, E. Fischer, Flüge, R. Hertwig, van't Hoff, Landouzy, Leduc, Lockyer, Madsen, Metchnikoff, Oppenheim, Ostwald, Ramsay, Richet, Roux, Rubner, Salomansen, Sanarelli, Schuster, Scott-Sherington and Waldeyer. In the United States he has already secured the adhesion of J. McKeen Cattell, Harvey Cushing, George Dock, E. Dana Durrand, John S. Fulton, George E. Hale, W. G. MacCallum, S. N. D. North, Henry Fairfield Osborn, E. C. Pickering, Ira Remsen, Charles D. Walcott, W. H. Welch and many others.

These efforts deserve the cordial support of American men of science, both for the practical service which the proposed permanent international bureaus would render to their respective sciences and arts and for their beneficent effect upon the movement for peace and for the progressive organization of the world.

C.-E. A. WINSLOW

AMERICAN MUSEUM OF NATURAL HISTORY,
NEW YORK

SCIENTIFIC NOTES AND NEWS

DR. SIMON FLEXNER, director of the Rockefeller Institute for Medical Research, has sailed for Europe to give the Harben lectures before the London Institute of Public Health and the Cameron lecture at Edinburgh University.

ON account of illness Professor Josiah Royce, of Harvard University, has been compelled to give up the course of Bross lectures

on "The Sources of Religious Insight" and has been given leave of absence for the present academic year.

PROFESSOR W. A. NOYES, director of the chemical laboratories of the University of Illinois, has been granted leave of absence to go to Berlin as the representative of the American Chemical Society at the International Conference of Chemical Societies.

THE directors of the Bache Fund of the National Academy of Sciences have voted a grant of \$500 to Professor M. A. Rosanoff, of Clark University, in aid of his research on the dynamics of sugar inversion.

THE Sarah Berliner research fellowship for women has been awarded to Miss Marie Gertrude Rand, of Brooklyn, a doctor of philosophy of Bryn Mawr College, for her work on the psychology of vision.

DR. GUSTAV HELLMANN, director of the Meteorological Bureau in Berlin, has been elected a member of the Berlin Academy of Sciences.

SIR EDWIN RAY LANKESTER has been elected an honorary student of Christ Church, Oxford.

DR. CHARLES CHILTON, professor of biology at Canterbury College, New Zealand, has been granted leave of absence for 1912, and will spend the year in Europe visiting biological laboratories and stations.

PROFESSOR FREDERIC B. LOOMIS, of Amherst College, Waldom Shumway, '11, and Philip L. Turner, '12, members of the Amherst biological expedition to South America, arrived at Amherst last week from Buenos Aires. The party left this country last July and has been occupied in the exploration of practically unknown territory in southern Patagonia. A large collection of fossil remains has been obtained.

PROFESSOR T. A. JAGGAR, JR., of the Massachusetts Institute of Technology, has been granted leave of absence for the remainder of the year that he may perfect the plans for the Volcanic Laboratory at Halemaumau in the Hawaiian Islands. This observatory has been