

slightly soluble in the membrane and the solute does the diffusing, from a region where its concentration is high to one in which its concentration is low.

This explanation serves to amplify the explanation given by Osterhout and Murray, who say that the phenomenon is due to the fact that the "acid increases the solubility of water in the guaiacol phase," indicates the way in which this increased solubility is brought about, does away with the apparent violation of the laws of thermodynamics, and suggests possible limitations in the applications of this model to biological phenomena.

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### NATION-WIDE JUNIOR SCIENCE CLUBS

THE scientific attitude and scientific investigation have their beginnings in the lower grades of our secondary schools. Evidence of this appears in the desire of junior-high-school and high-school students to take part in scientific activities outside of regular school hours. The natural desire is to join a science club. Many of these science clubs are to-day well endowed in both leadership and facilities with which to work, so that they often make definite contributions to science. However, even before they finish their introductory work in science, secondary school students are being called upon to realize the application of scientific principles to every-day events, and to understand the position which science plays in the development of modern society.

During the past ten years, the American Institute of the City of New York has fostered the organization of its science clubs. This is a natural outgrowth of its efforts to relate science with society since 1828. Now, under the name of the American Institute Science and Engineering Clubs, it announces the expansion of its science clubs on a nation-wide basis to co-ordinate the scientific pursuits of American youth.

As a first step, the best youth organizations in the country have endorsed the plans. Already, educators everywhere are agreed that science is a natural and practical medium by means of which to stimulate and guide the thinking of young people. On October twenty-first, an introductory announcement of the new organization was sent to educators and their institutions, scientists, engineers and youth leaders, suggesting that they be sponsors of the clubs. This announcement presented the reasons for forming science clubs and explained how the American Institute Science and Engineering Clubs could perform the function of organizing existing and future clubs into one unit. The institute will supply upon request from these sponsors authoritative bulletins on "How to Organize a Science and Engineering Club," "How to Organize

a Science Congress," "How to Equip a Science Techniques Shop" and "How to Interest a Community in Science Club Work."

As a unifying influence and also as a clearing house of science news for youth throughout the country, the American Institute will publish monthly its own science newspaper, called *The Science Observer*. This journal will carry columns devoted to club activities, youth research projects and up-to-date news in science. A pictorial section will be a feature of the publication.

The present program of the institute clubs calls for its annual science congress on December 29, at which the well-known Christmas lectures will be presented.

In March the annual science fair will be held in the American Museum of Natural History. To this come some of the most significant products of the scientific activities of the clubs and individual students. Four groups of exhibits designed to relate science with modern life are presented: Transportation, communication, production and public welfare are each a class under the engineering group. Plants and animals, medicine and biochemistry, heredity and evolution form the biological sciences. In the third group, the physical sciences, such as geology, astronomy and pure physics and chemistry, are represented. Of great interest will be the leisure-time activities exhibits of the fourth group. Prizes to a total of \$3,000 are awarded to scores of exhibits at the fair.

Through the medium of traveling organizers, a speakers bureau and eventually short-wave radio, the work of the institute clubs will be organized as one national unit. Sponsors and other interested leaders may receive full information by writing to the American Institute, 60 East 42nd St., New York City.

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### OPPOSITION TO AN INTERNATIONAL CONGRESS OF PSYCHOLOGY IN VIENNA

WHEN the twelfth International Congress of Psychology, to be held in 1941, was awarded to Vienna, it was not supposed that within a few months Austria was to be annexed to Nazi Germany. The *Anschluss* took place on March 11, 1938. The reaction among American psychologists was immediate and unequivocal.

Six weeks after the *Anschluss* of Austria there occurred the annual meeting of the Midwestern Psychological Association at the University of Wisconsin on April 22. Resolutions were adopted after considerable discussion urging the removal of the 1941 congress away from Austria, because "Germany is now governed by a Nazi dictatorship, which has subordinated the integrity of science and of scientists to

a political creed, which has caused the dismissal of many scientists and scholars from their positions, which has caused the emigration of many of the nation's outstanding scholars to other countries, and which has so injured German psychology that it no longer holds the eminent position it once did," and because "the attendance of the world's psychologists at an International Congress in Vienna could be interpreted at best as a lack of opposition to, and at worst an endorsement of Nazi treatment of science and of scientists."<sup>1</sup>

The Western Psychological Association, meeting at the University of Oregon on June 18, passed almost unanimously a resolution on the grounds that "psychology in Germany is no longer scientifically reputable." The Rocky Mountain Branch of the American Psychological Association followed with a resolution passed unanimously at its annual meeting at the University of Colorado on July 23, stating that "Austria is now ruled by a government whose philosophy is opposed to the free pursuit of science and whose treatment of many scientists has been uncivilized."

Three local psychological societies, in mail referenda of their membership, passed similar resolutions by majorities ranging from 89 per cent. to 100 per cent. The Chicago Psychological Club stated that "present-day conditions in Austria—restrictions on the freedom of teaching, speech, press and assembly; persecution of certain racial, religious and social groups; and stifling of the spirit of scientific inquiry—render many psychologists unable and unwilling to attend a . . . Congress of Psychology . . . scheduled to meet in Vienna. . . ." The Illinois Society of Consulting Psychologists requested that the congress "be convened in a location where every psychologist or guest, regardless of his ancestry, religious creed or political belief, may attend without fear of interference in his proper enjoyment of the Congress." The Psychologists League of New York City charged that the annexation of Vienna by the Nazi Reich "has produced in that city a reign of terror . . . with the connivance of the new governmental régime, and has . . . introduced . . . a situation that has long prevailed in Germany itself, where the free development of scientific psychology has been rendered impossible because, on the one hand, there has been official government support for patently unsound psychological theories that fit the political ideology of the existing régime, and, on the other hand, many individual psychologists of recognized probity have been driven into exile because they were Jewish or partly Jewish in ancestry or because they hold liberal political views, and that it is unthinkable that the decision to hold the Congress in Vienna could have been taken if it had been known that such a condition

would prevail, since it is clearly impossible to have a true Congress of Psychology in a country that has driven into exile so many of the world's foremost psychologists, of whose scientific achievements any country might well be proud."

During September the American Psychological Association, together with three affiliated psychological societies, held annual meetings at the Ohio State University. The American Association for Applied Psychology, after receiving the council's report that "the council accepts the view that the association should take no action on purely political grounds but recognized that scientific work (even when of the purest research character) may have political reverberations and that political changes may have momentous effects on both pure and applied science. The association can not ignore the destructive influence of Nazi politics on all science, including our own. For the International Congress to meet in Vienna would be to take *political* action—political action favorable to anti-scientific forces. Psychologists in America, relatively remote from Nazi influences, have the duty to take the lead in withdrawing the Congress from its Vienna meeting place," passed unanimously the recommended resolution requesting a change of meeting place from Vienna, since "conditions have become unfavorable to the holding in that city of a scientific congress." The Society for the Psychological Study of Social Issues passed unanimously a resolution declaring that "many distinguished exiled psychologists would be unable safely to re-enter Nazi territory even for attendance at a scientific meeting" and that the actions of the Fascist dictatorship "violate the highest ideals of science." In the Psychometric Society, however, the council recommended that no action be taken on the ground that this matter did not concern the objective of the society, which is the "development of psychology as a quantitative rational science." A motion requesting removal of the congress from Vienna was subsequently laid on the table by a majority vote of the membership.

In the American Psychological Association, comprising about 2,500 psychologists, the following resolution as recommended by the council was received with applause by the membership and passed without dissenting vote: "*Be it resolved* that the American Psychological Association request the Committee in charge of arrangements for the XIIth International Congress of Psychology to terminate, if it has not already done so, the tentative plan to hold this congress in Vienna in 1941; and that it requests the committee to arrange for the congress in some country where the progress of psychology as a branch of science is not hindered by a government hostile to the tradition of free and unimpeded scholarship."

<sup>1</sup> See SCIENCE, 87: 479, 1938.

Since the above-mentioned meetings of American psychologists it has been learned that the Council of the British Psychological Society has unanimously recommended the 1941 meeting of the congress be not held in Vienna.

The International Committee is comprised of 69 psychologists from all parts of the world. The executive committee is as follows: Edouard Claparède,

of the University of Geneva, *permanent secretary*; Herbert S. Langfeld, of Princeton University, *secretary*; C. S. Myers, of the National Institute of Industrial Psychology, London, Henri Pieron, of the University of Paris, Mario Ponzio, of Rome, E. Rubin, of the University of Copenhagen, and Emilio Mira, of Barcelona, *members*.

CORRESPONDENT

## SCIENTIFIC BOOKS

### RESPIRATION

*Adventures in Respiration. Modes of Asphyxiation and Methods of Resuscitation.* By YANDELL HENDERSON. The Williams and Wilkins Company, Baltimore, Md. Pp. xi + 316, frontispiece, 15 figs. in text. June, 1938. \$3.00.

IN 1905 Haldane and Priestley published a noteworthy paper on lung ventilation, ending with the well-known conclusion that "the regulation of the rate of alveolar ventilation in breathing depends, under normal conditions, exclusively on the CO<sub>2</sub> pressure in the respiratory center." These words had great weight with a young assistant professor of physiology in the Yale Medical School who was teaching his students that respiration is chiefly controlled by the vagus nerves and is relatively little influenced by oxygen or CO<sub>2</sub>. The young man, Yandell Henderson, constituted himself "as an active propagandist for the Haldane doctrine, confident that the conception of CO<sub>2</sub> as a factor in the control of respiration must lead to a recognition of a similar part in the control of other functions as well, and particularly of the circulation."

During the next 15 years numerous papers came from the author's laboratory dealing with shock, respiratory regulation of the CO<sub>2</sub> capacity of the blood and hemato-respiratory functions. In "Adventures in Respiration" some attention is paid to venous return in relation to muscle tonus, but the principal thesis of the book and of the investigations just mentioned is that acapnia, or inadequate pulmonary ventilation, "is a factor in the depression of vitality after anesthesia, surgical operations, physical injuries and severe illness."

The 15-year campaign to win from fellow physiologists approval of his thesis of acapnia by laboratory experiment and theoretical discussions failed. We now know that in many respects Yandell Henderson was right and his critics wrong. In other respects, however, he was wrong, and the proof of his error was in some instances so convincing that the experimental foundations of his thesis were shaken.

At the end of the first campaign he shifted his attack to a front on which there had been but desultory firing. In 1909, before a distinguished gathering at Johns

Hopkins, he had stated that administering 5 per cent. CO<sub>2</sub> in air or oxygen benefited apneic anesthetized animals. He suggested that medicine might advantageously adopt such mixtures for treating anoxial acidosis and he proposed that manufacturers prepare mixtures in cylinders for this purpose. This proposal brought such a devastating criticism from a distinguished professor of physiology in the audience that the speaker was left speechless; instead of a rebuttal, he offered good-humoredly to meet his critic outside.

In beginning his second 15-year campaign, Yandell Henderson decided to brush aside theoretical objections and to return to the attack on this neglected front. Here he very skilfully achieved victory. "Adventures in Respiration" records his success in persuading surgeons to provide their anesthetists with the CO<sub>2</sub>-oxygen mixture, in teaching clinicians to use it in pneumonia, obstetricians in childbirth, and first-aid crews in resuscitation from carbon monoxide poisoning. The most dramatic success achieved has been in the treatment of carbon monoxide poisoning. An essential element in this is the H.H. inhalator designed by the author during the war and developed by the Mine Safety Appliances Company. It is estimated that the administration of CO<sub>2</sub>-oxygen mixtures by means of this device saves annually more than 10,000 lives from carbon monoxide asphyxia in America alone. The treatment is also used abroad; it is officially sanctioned by the Mines Department of the British government.

Although brought up a physiological chemist, the author turns his back on biochemists. Their currently accepted idea of acid-base balance adds to his difficulty, and he finds a clear passage, "by steering contrary to their directions. . . . At critical points their latitude and longitude are erroneous, and even the points of the compass are reversed." While many will find other interpretations for his unhappy experience in attempting to follow the sailing directions of biochemists, none will dispute the eloquent confirmation he has given to the wise conclusion of Miescher that, "Over the oxygen supply of the body carbon dioxide spreads its protecting wings."

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