The new laboratories all have elaborate safety systems. In Cambridge there are miners' lamps of the type invented by Sir Humphry Davy a hundred years ago. These are installed in corners of the ceiling where hydrogen is most likely to collect. Six per cent. or more of hydrogen in the air is a violently explosive mixture and can tear a closed building to bits. When one per cent. exists these lamps give a signal which automatically throws open all doors and windows.

In the German Physikalische Technische Reichsanstalt, which corresponds to U. S. Bureau of Standards at Washington, the cryogenic laboratory has a very light roof merely resting over the building. In case of an explosion this roof would be blown off before a high pressure could be built up.

At the Pasadena laboratory the room in which the hydrogen is liquefied has no sharp corners. All are carefully rounded and the ceiling slopes upward toward the window, which runs from floor to ceiling and is almost half as wide as the room. This window is to be kept open at all times of the year.

### DEDICATION OF THE JENKINS LABORATORY AT THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION

THE Jenkins Laboratory of the Connecticut Agricultural Experiment Station, New Haven, was dedicated on October 11, with tributes to the late Dr. E. H. Jenkins, director from 1900 to 1923, for whom the building was named. Dr. E. M. East, of Harvard University, who was at one time a member of the Connecticut station staff, praised Dr. Jenkins as "one of the great men of our generation."

"His most brilliant success was as director of this station," Dr. East said in his address, entitled "Edward H. Jenkins—The Man and the Public Servant." "In this capacity his work was so distinctive that he deserves, and is accorded, a collaborator's share in its entire output of scientific work. . . . Is it not just as well to have a little hero worship for that rare type of individual, the unselfish comrade who never lets you down?"

Dr. J. G. Lipman, director of the New Jersey Agricultural Experiment Station, spoke on "The Agricultural Station as a Public Service Institution." He commented on the question of agricultural research and over-production of crops that "If the truth must be told, the Experiment Station can furnish knowledge, but it can not furnish wisdom."

Governor Wilbur L. Cross, of Connecticut, formerly dean of the Yale University Graduate School, traced briefly the beginnings of the Connecticut station as a "Yale institution," and recalled his thirty-five years' acquaintance with Dr. Jenkins.

Concluding the program, Dr. E. M. Bailey, station chemist, presented a bronze tablet in memory of Dr. Jenkins, given by present and past members of the staff, and the building was thrown open for inspection. Elijah Rogers, of Southington, a fruit-grower and vice-president of the board of control of the station, presided. William L. Slate, director, extended greetings.

The new laboratory, which was built by appropriation of the General Assembly, houses the departments of entomology, plant breeding, botany and forestry, and provides individual laboratories for research workers. It is 124 by 45 feet in size, and is two stories in height, with a big light basement.

## SCIENTIFIC NOTES AND NEWS

DR. W. W. CAMPBELL, emeritus director of the Lick Observatory and emeritus president of the University of California, is spending the winter in Washington in order that, as president of the National Academy of Sciences, he may be in touch with the administration of the academy and of the National Research Council.

ARTHUR KEITH, geologist of the U. S. Geological Survey from 1894 until his recent retirement, has been elected chairman of the finance committee of the American Association for the Advancement of Science to succeed the late Dr. George K. Burgess, director of the Bureau of Standards.

HENRI LOUIS LE CHATELIER, the French chemist, celebrated his eighty-second birthday on October 8.

DR. NIELS BOHR, professor of physics at the University of Copenhagen, expects to visit the United States in the summer of 1933.

THE honorary degree of doctor of science has been conferred by Dartmouth College on S. Prentiss Baldwin, who is founder and director of the Baldwin Bird Research Laboratory, and research associate in biology in the Graduate School of Western Reserve University.

DR. FRANCIS M. WALTERS, JR., of the staff of the bureau of metallurgical research at the Carnegie Institute of Technology, was presented with the Howe Medal for 1932 by the American Society of Steel Treating at a dinner held on October 6 in Buffalo as a part of the National Metals Congress. The medal was awarded for an article on "The Alloys of Iron, Manganese and Carbon," a study which was con-

ducted during the past year by Dr. Walters and his assistants, Dr. John F. Eckel and Maxwell Gensamer, who were awarded honorable mention.

J. S. TRITLE, vice-president and general manager of the Westinghouse Electric and Manufacturing Company, was elected president at the recent annual meeting of the National Electrical Manufacturers' Association, to succeed John H. Trumbull, formerly governor of Connecticut.

*Nature* reports that the British Institute of Transport has made the following premium awards for the session 1931–32: Institute Triennial Gold Medal to Sir Lynden Macassey; Railway (Operating) Gold Medal to H. H. Mauldin; Railway (Engineering) Gold Medal to Sir Harold Hartley; Road Transport (Passenger) Gold Medal to Horace M. Wyatt; Water Transport (Canal) Gold Medal to A. J. Pearson, and Institute Graduate Silver Medal to J. M. Powell.

DR. DAYTON STONER, of the Roosevelt Wild Life Experiment Station of the State College of Forestry, Syracuse, has been appointed state zoologist of the New York State Museum at Albany.

CURTIS P. CLAUSEN, of the Bureau of Entomology, formerly in charge of research work on parasites of the citrus black fly at Kuala Lumpur, Federated Malay States, has been transferred to Washington. In his new assignment, he will coordinate the work of the bureau and cooperating states on the study, breeding, importation and distribution of beneficial insects.

ON recommendation of the editor of the *Journal of the American Chemical Society,* R. C. Fuson and Farrington Daniels have been elected by the council of the society associate editors in place of Roger Adams and E. W. Washburn, whose terms expire. On recommendation of the editor of the *Journal of Physical Chemistry,* J. W. McBain and T. R. Briggs have been elected to the board of editors of that journal.

DR. DAVENPORT HOOKER, professor of anatomy at the University of Pittsburgh, has been appointed managing editor of *The Journal of Comparative Neurology,* to succeed Dr. Geo. E. Coghill, member of the Wistar Institute, who resigned in order to devote his full time to neurological research.

DR. PAUL D. FOOTE retired on September 1 as editor-in-chief of *The Journal of the Optical Society of America* and of *The Review of Scientific Instruments,* after having served for more than twelve years. The *Journal* says: "During the thirteen years of Dr. Foote's editorship he has personally supervised the publication of over 15,000 pages of text—a task which, as those who have had experience know, has demanded very heavily of his time and energy. To have been thus instrumental in starting and in conducting for a long period of years two important scientific journals, is an achievement of which any one may be proud. On behalf of his colleagues on the editorial board, and of the many readers of *The Journal of the Optical Society of America* and of *The Review of Scientific Instruments,* we wish to take this occasion to express to him our sincere appreciation of his untiring energy and of his devotion to the editorial work which he has so ably done. We regret that his duties as director of the Research Laboratory of the Gulf Oil Companies make it impossible for him to continue with us. But we shall hope that the standards which he set shall be maintained, and that the journals shall continue to prosper."

DR. J. B. S. HALDANE, Sir William Dunn reader in biochemistry at the University of Cambridge, head of the genetical department of John Innes Horticultural Institution and Fullerian professor of physiology at the Royal Institution, London, has been appointed Hitchcock professor at the University of California. The first series of lectures opened on October 18 with an address entitled "Criticism of the Darwinian Theory." A second series will include three lectures on "Enzymes." Professor Haldane will also give two lectures on "Biochemistry and Genetics," and one lecture on "Mathematical Problems Arising in Genetics." These lectures will be: Nov. 9, "How Genes Act"; Nov. 10, "What Genes Are. Wave Mechanics as a Basis for Philosophical Biology," and Nov. 14, "The Statistical and Matrix Algebra of Population. Problems Leading to Linear Difference Equations." In addition to lectures Professor Haldane will hold a number of conferences and discussions with members of the faculty and advanced students.

E. A. GUGGENHEIM is visiting the department of chemistry at Stanford University as acting assistant professor for the year 1932–1933, giving courses on Gibbsian thermodynamics and on catalysis in solutions. Mr. Guggenheim was for five years in Copenhagen as research assistant, first with Professor Brönsted at the Polytechnic Institute and later with Professor Bjerrum at the Royal Agricultural College.

FREDERICK BATES, chief of the polarimetric section of the Bureau of Standards, has recently returned from a tour of European laboratories. He was elected president of the International Commission for Uniform Methods of Sugar Analysis which met at Amsterdam in September.

VERNON BAILEY, of the Bureau of Biological Survey, left Washington on October 18 for a three-months biological expedition in northwestern Mexico, with Frederic Winthrop, Jr., collector for the Museum of Comparative Zoology at Cambridge, Massachusetts. They will travel by pack horse through the canyons

and mountains of northwestern Chihuahua and northeastern Sonora and by automobile through the deserts of northwestern Sonora and along the coast of the Gulf of California.

DR. BENNET M. ALLEN, professor of zoology of the University of California at Los Angeles, has returned after spending nine months in Europe, engaged chiefly at the larger universities and medical centers in a study of the pituitary and thyroid glands.

W. J. BAERG, professor of entomology at the University of Arkansas, has returned from a six weeks' trip into Mexico. The trip was made for the purpose of studying poisonous arthropods in the States of Morelos, Guerrero and Oaxaca.

DR. ERIC REID, of the Rowett Institute, Aberdeen, Scotland, who spent the past academic year in the department of biochemistry, Western Reserve University, as a scholar of the Department of Agriculture for Scotland, has returned to Aberdeen.

DR. PETER DEBYE, professor of experimental physics at the University of Leipzig, who is visiting the United States, expects to spend a week in conferences at the California Institute of Technology at Pasadena.

THE meetings of the British Illuminating Engineering Society opened on October 11, when Lieutenant Commander H. T. Harrison delivered his presidential address and a report on progress in illuminating engineering, prepared by the Technical Committee, was presented.

PROFESSOR WILLIAM HENRY WELCH, of the Johns Hopkins University, lectures at the New York Post-Graduate Medical School of Columbia University on Friday, October 28, at 5 P. M. His subject is "The Significance of Medical History to the Practitioner of Medicine."

DR. WALTER B. CANNON, professor of physiology at Harvard University, will give the eighty-sixth anniversary discourse at the New York Academy of Medicine on November 3 at 8:45 P. M. His subject will be "Enemies of Society."

DR. ROBERT A. MILLIKAN, of the California Institute of Technology, addressed the student body of Lafayette College on October 26, his subject being "A New Set of Values."

THE thirty-first Hanna lecture of Western Reserve University was delivered on October 10 by Dr. W. Baensch, professor of radiology and director of the X-ray and Radium Institute of the University of Leipzig. The lecture, which was illustrated, was on "The Radiological Relief of the Gastric Mucosa."

DR. PHILIP ANDERSON SHAFFER, professor of biological chemistry and head of the department, Washington University School of Medicine, St. Louis, will deliver the third series of Herzstein lectures on the general subject "Some Aspects of Carbohydrate Metabolism and Their Bearing on Clinical Problems." Under the provisions of the will of the late Dr. Morris Herzstein, San Francisco, the Herzstein lectures are held in San Francisco under the auspices of Stanford University and the University of California.

THE fourteenth Exposition of Chemical Industries is now definitely scheduled for the week of December 4, 1933, according to a recent announcement by Charles F. Roth, manager, who is vice-president of the International Exposition Company, which has organized and directed the presentation of the Chemical Exposition since the first one was held in New York City in 1915. The exposition will be held simultaneously with the annual meetings of the American Society of Mechanical Engineers and of the American Society of Refrigerating Engineers. It is probable also that certain of the national chemical organizations may arrange to hold meetings in New York during the week.

THE residue of the estate of Dr. M. Allen Starr, professor and emeritus professor of diseases of the mind and nervous system at Columbia University from 1888 until his recent death, will be held in trust and ultimately will be shared equally by Princeton and Columbia universities.

*The London Times* reports that Captain Eynar Mikkelsen's expedition to the Blosseville Coast, East Greenland, returned to Copenhagen on September 22. Three British scientific men, Mr. Michael Spender and the brothers, Mr. R. G. Wager, of the University of Reading, and Mr. H. G. Wager, of the University of Dublin, have been taking part in it. In addition to other scientific work the difficult Blosseville Coast was mapped in detail. Captain Mikkelsen says that he visited Lake Fjord a few days after the loss of Mr. Watkins in a kayak accident, and helped in the search for him. Four members of Dr. Knud Rasmussen's seventh Thule expedition have also returned after having, from a seaplane, mapped the coast from Angmagssalik to Cape Farewell. In all they flew 10,000 miles without mishap. East Greenland has now been explored by Danes from Cape Bismarck in the north to Cape Farewell in the south.

A PROPOSED dictionary of electrical engineering terms, representing the results of over three years' work by a committee of 120 scientific men and engineers under the chairmanship of Dr. A. E. Kennelly, of Harvard University, has been published for review and criticism prior to its submittal to the American Standards Association for adoption as an American standard. The report, prepared under the direction of the American Institute of Electrical Engineers, is

a document of 208 pages listing over 3,400 definitions, ranging from the fundamental definitions on which the science of electricity is based, to definitions for practical applications, such as those for control equipment, generation, transmission and distribution, welding, illumination, wire and radio communication, electrobiology and electro-therapeutics.

THE University of Kentucky, in cooperation with the State Board of Health, during the 1932 summer session offered a group of special courses for the public health workers of the state. Dr. Allen W. Freeman, professor of public health administration, the Johns Hopkins University School of Hygiene and Public Health; Dr. Edward J. Murray, superintendent of the Julius Marks Sanitarium, Lexington; Miss Margaret East, director of the Bureau of Public Health Nursing, State Board of Health, and Dr. J. S. Chambers, department of hygiene and public health, University of Kentucky, formed the resident staff, while various members of the staffs of the University of Kentucky and the State Board of Health gave special lectures. The courses offered were epidemiology, public health administration, health supervision of schools, tuberculosis, public health nursing and maternal and child health. Twenty-five health officers were enrolled for the courses offered for health officers only, while thirty nurses and eighteen teachers were enrolled for the courses offered these workers.

AT the recent Denver meeting of the American Chemical Society the following resolution was adopted:

RESOLVED, That the Secretary of the American Chemical Society be instructed to advise the Century of Progress of the facts relative to the meeting of the American Chemical Society in Chicago in September, 1933, and urge in effect that the Century of Progress advise the distinguished foreign chemists whom they have invited, of these facts, and try to arrange for at least some of these chemists to remain until September, when the meeting of the American Chemical Society would provide a large audience of their American colleagues. In this, the secretary will invite the cooperation of the American Association for the Advancement of Science.

It was voted to instruct the secretary at the proper time to advise the chemists of the world of the meeting to be held by the American Chemical Society in Chicago at the time of the Century of Progress, extending to them the privilege of attending this meeting on the same basis as members of the American Chemical Society, as was done at the society's jubilee in 1926. The society will meet in St. Petersburg, Florida, in March, 1934, and in Cleveland in September. With reference to the question of future meetings the following motion was passed:

Voted that the council policy committee present to the council at its next meeting a plan whereby the selection of the meeting places for the society be made in a more logical manner; that their report include a tentative schedule some years in advance, together with any proposed amendments to the constitution and by-laws they may deem necessary to carry it into effect.

# DISCUSSION

## VITALISM, MECHANISM AND ORGANICISM

To such of the brethren as have wondered at times just where the organicism of Claude Bernard stands in the logical scheme, it may be of service to attempt a dichotomy to show its real position.

We may start our scheme of dichotomy with the vitalistic position, namely, that the reactions in living organisms are not completely explicable in terms of physics and chemistry; that there is some supernatural or ultranatural element in these processes which puts them beyond the range of jurisdiction of so-called natural laws. Descartes (1596–1650), while admitting that some of the processes of the organism were physical or chemical in nature, was the first to insist upon a sharp dualistic separation between any such physical and chemical processes and the rational soul. Present-day vitalism dates from Stahl's (1660–1743) *anima sensitiva* rather than from Descartes' *âme raisonable.* In contrast to this we may put the other division of biological thinkers who maintain that there is no supernatural element in the processes in living organisms. This position has been stated most graphically by Goodrich; "The metabolic process in living matter draws in inorganic substance and force at one end, and parts with it at the other; it is inconceivable that these should, as it were, pass outside the boundaries of the physico-chemical world, out of range of the so-called physico-chemical laws, at one point to reenter them at another."

The second group of thinkers have sometimes been called mechanists, and to some it might appear that the dichotomy, as it has been presented, includes all possibilities. But the organicists hold a different opinion. They say that neither mechanism nor vitalism contains the answer to the biological riddle. There may be others beside myself who have been sorely puzzled to find their place in the scheme.

Suppose that we let vitalism stand as it is, for if the organicists deny that they are vitalists, no one has a right to put them there against their will. Certainly, Claude Bernard was not a vitalist. And a third category of organicism, coordinate with the other two, does not seem easy to establish. It seems worth while, then, to look a little more closely at our second category, which is commonly designated by the term "mechanism." Most biologists will recall