June 30, and continue for four days of two sessions each, and that visits shall afterwards be paid to provincial centers. The administrative and social center of the congress will be at the house of the British Institute of Radiology in Welbeck Street.

ACCORDING to the *British Medical Journal* the annual general meeting and conference of the Institute of Industrial Welfare Workers was held at Swanwick, Derbyshire, from September 26 to 29. The subject of the conference was "The doctor and the psychologist in industry." Dr. C. S. Myers, director of the Institute of Industrial Psychology, spoke on the subject of "What psychology can do for industry," and was followed by Dr. W. F. Dearden, honorary secretary of the Association of Certifying Factory Surgeons, who dealt with the subject of "What medical science can do for industry." "The psychological and physiological aspects of accident prevention" was discussed by Dr. Millais Culpin and Dr. H. M. Vernon, investigator for the Industrial Fatigue Research Board.

THE American Institute of Chemical Engineers has received an invitation from Sir Arthur Duckham, president of the Institution of Chemical Engineers (England), to hold a joint meeting in England in July, 1925, following the Providence meeting of the American organization. The secretary is now canvassing the members to see whether a sufficient number would attend a meeting in England to make a joint session successful.

DR. A. W. GILBERT, Massachusetts Commissioner of Agriculture, has announced plans for bringing together world leaders in all lines of agriculture at some American university next July, for a month's school of instruction and discussion of problems of cooperation in agriculture. Dr. Gilbert is chairman of the committee that will arrange for the meeting.

ITALY'S National Exhibition of Pure and Applied Chemistry, which was to have been held this fall at Turin, has been postponed until spring. It was found that the task of assembling the exhibits was greater than had been estimated. Because of the postponement, however, the scope of the exhibition will be expanded.

THE Iowa Child Welfare Research Station has received a bequest of $10,000 in the will of the late Cora B. Hillis, of Des Moines, Iowa.

THE establishment in Philadelphia of a technical research bureau to investigate the problems of dyeing, yarn testing, designing and other details of production has been approved at the annual convention of the National Knitted Outerwear Association.

THE University of Colorado has received a gift of $5,000 and an assured income of $1,000 a year for the purchase of books in medical research, from Mrs. Charles Denison, of Denver.

SELECTION of Portland, Ore., for the new northwest reforestation experiment station has been recommended by E. H. Clapp, assistant forester in charge of research at Washington, D. C. The new station will be the center of the most extensive forestry experimental work in the United States. Study will extend to problems on private timber holdings as well as on the national forest areas, and will include growth of trees, protection of young trees from fire and methods of cutting and brush burning to insure reforestation. All the leading timber of the northwest will be served from the Portland office, if the recommendation is accepted.

A NATIONAL Cancer Institute at Lima, Peru, was inaugurated recently by the president of the republic. Dr. Eladio Lanatta, a local physician, who has been making a special study of radiography in the United States, has been placed in charge of the new institution.

UNIVERSITY AND EDUCATIONAL NOTES

DRURY COLLEGE, Springfield, Missouri, has received $100,000 from an anonymous donor.

BY the will of the late Mrs. N. F. McCormick, Tusculum College, Tennessee, will receive $100,000, Princeton University $20,000 and the Allahabad Agricultural Institute of India $3,500.

FOUR new buildings become available at Ohio State University with the opening of the fall quarter. The buildings represent an expenditure of more than $1,000,000 and include a new administration building, commerce building, Hamilton Hall and the journalism building.

FUH TAN UNIVERSITY, Kiangwan (Shanghai), China, has been given $100,000 for a psychology building. The building is to be of stone, three stories high, 50 ft. by 120 ft. Dr. Zing Yang Kuo, who was trained in psychology at Columbia University and the University of California, is head of the department of psychology at Fuh Tan University.

DR. LEMUEL H. MURLIN, for thirteen years president of Boston University, has accepted the position of president of DePauw University, Indiana.

THE trustees of Worcester Polytechnic Institute have offered the presidency of the institution to Rear Admiral Ralph Earle to succeed Dr. Ira N. Hollis, who handed in his resignation two years ago to take effect on the choice of a successor.

AT the University of Kansas Dr. Dinsmore Alter, formerly associate professor of astronomy, has been appointed professor of astronomy in the department of physics and astronomy. He spent the past academic year in study and research in the California Institute of Technology while on leave of absence from the University of Kansas.

PROFESSOR WILLIAM J. MILLER has resigned as head of the department of geology in Smith College to become professor of geology and chairman of the department in the University of California, Southern Branch, Los Angeles.

DR. SHEPHERD IVORY FRANZ has resigned his positions at St. Elizabeths Hospital and George Washington University and will be associated with the department of psychology of the University of California, Southern Branch, Los Angeles.

AT the University of South Carolina Dr. Laurence L. Smith has been appointed associate professor of geology and Mr. Fred R. Neumann instructor in geology.

DR. GEORGE N. BAUER has been appointed associate professor of mathematics at the University of New Hampshire.

DR. H. W. RICKETT, instructor in botany at the University of Wisconsin, has been appointed assistant professor of botany at the University of Missouri.

AT a recent meeting of the Board of Regents of the University of Nebraska, the following appointments to the College of Medicine were confirmed: Dr. Harold Gifford, professor of ophthalmology, emeritus; Dr. James M. Patton, professor of ophthalmology and chairman of department; Dr. O. M. Cope, assistant professor of physiology and pharmacology; Dr. Herman F. Johnson, clinical assistant in orthopedic surgery; Dr. A. R. Knode, secretary of the department of laryngology; Dr. Chas. F. Moon, instructor of obstetrics and gynecology; Dr. A. E. Bennett, clinical assistant in neurology; Dr. M. Grodinsky, clinical assistant in surgery; Dr. Walter Benthack, fellow in pathology. The regents also created the department of clinical investigation and Dr. Arthur D. Dunn was appointed professor and chairman of this department.

SIR GILBERT WALKER has been appointed professor of meteorology at the Imperial College of Science, England, in succession to Sir Napier Shaw.

DR. WILHELM STEPP, professor of internal medicine at the University of Giessen, who is doing research work at Baltimore, has been appointed professor at the University of Jena following the resignation of Professor Stintzings.

DISCUSSION AND CORRESPONDENCE

THE PRESSURE CAUSED BY A FLAME

PROFESSOR CARL BARUS[1] has recently described observations of what he at first took to be a pressure caused by the burning of the gas in an open flame, but which he now thinks is probably due to the increased viscosity of the heated gas near the point where it escapes from the orifice into the flame. This effect is one which I ran across a number of years ago,[2] and which at that time I attributed to a real pressure exerted by the flame.

My method was entirely different from that used by Professor Barus. I was feeding a small flame with gas from a small gasometer, and I noticed that when the flame was extinguished the gasometer bell fell more rapidly than when the flame was burning. The effect was the same as if the movement of the burning gas away from the point where it burned gave rise to a pressure.

Since Professor Barus's note appeared I have looked again for this effect, and in a couple of cases have examined roughly the magnitude of the effective back pressure. The gas was ordinary illuminating gas, and the nozzle at which the flame burned was a piece of glass tubing about 6 mm in inside diameter, drawn down at one end until the opening through which the gas escaped had a diameter of a little less than a millimeter. A number of readings of the height of the gasometer bell, taken while it was falling, showed that its rate of fall was nearly linear. The difference between the rate of fall when the flame is burning and when it is not burning may be surprisingly large. The following table shows the difference for two cases. It will be seen that when the gas was not

Condition	Rate of Fall, mm/sec.	
	Case 1	Case 2
Burning	0.084	0.140
Not Burning	0.126	0.189
Burning Again	0.082	0.141

burning the bell of the gasometer fell in the first case half again as fast as when the gas was burning. That is, in some way the burning slowed down the fall of the gasometer, as if the movement of the burning gas away from the point where it burned produced a pressure.

To get some idea as to the magnitude of this apparent pressure it is only necessary to reduce the load on the bell of the gasometer until the rate of fall when the gas is not burning equals the rate observed

[1] SCIENCE, 60, p. 137, August 8, 1924.

[2] Acoustic Repulsion of Jets of Gas, p. 29, Clark University Dissertation, 1913.