in accuracy. With more upper-air data, obtained by self-recording instruments borne by balloons and airplanes, greater accuracy in forecasting now becomes possible.

The radiometeorograph has several advantages over the airplane as a weather explorer. It can go higher —10 to 20 miles above the earth, which is well up into the stratosphere. It can take off in weather that grounds planes, thus supplying observations at critical times in weather history. It reports its findings instantly, doing away with the hour or longer wait for the return of the recorder. The radiometeorograph, however, does not provide information on the direction or velocity of the wind. New observation technique now being developed in the laboratory will add this information.

Tests at two Weather Bureau stations last year proved the value of the radiometeorograph in making daily upper-air soundings. The essential parts of various models used last year and of the one to be used this year are the same—a unit that responds to atmospheric changes and a radio transmitter that reports the atmospheric changes as sound signals, which are picked up at ground stations of the Weather Bureau. The official announcement reads in part as follows:

> The weather-sensitive elements of the new radiometeorograph are several strands of human hair, which tighten or loosen as the air around them becomes drier or more moist, and a small glass tube filled with sulphuric acid which responds to changes in temperature. Last year's radiometeorographs were kept running by a special clockwork. This year's model depends on changes in atmospheric pressure to make it run. The decrease in atmospheric pressure as the instrument rises moves a small switch arm over a series of equally spaced electrical contacts, separated by insulating strips. The contacts are spaced so that a decrease in air pressure equivalent to several hundred feet of elevation makes the switch arm move from a contact to an insulating strip. The next decrease makes it move to the next contact, and so on until the carrier balloon bursts and the radiometeorograph, attached to a small silken parachute to break the fall, drops back to earth. In nine times out of ten, at stations in well-populated regions, it is recovered and returned to the Weather Bureau.

## THE NEW LABORATORY OF CHEMICAL ENGINEERING AT THE CASE SCHOOL OF APPLIED SCIENCE

THE Board of Trustees of Case School of Applied Science has authorized the immediate construction of the first unit of a new laboratory of chemical engineering, which when completed will cost approximately $750,000. The first unit will comprise about 40 per cent. of the ultimate structure and will cost upwards of $300,000. Construction will be started this summer and the schedule calls for completion in advance of the second semester of the college year.

The building is to be of brick and steel construction. The main portion is to be 64 by 100 feet and four stories in height, with a two-story extension 45 by 55 feet to house large pieces of equipment and to provide special protection against risks of fire or explosion. The first unit will be at the southeast side of the campus adjoining the present electrical building in space now used as a parking area. Later extensions are to occupy the site of the latter building, which it is hoped to replace by a modern laboratory on the southwest front of the campus. Until the final unit of this building can be erected, the present chemical laboratory will be kept in service. Dr. Carl F. Prutton, head of the department of chemical engineering, made an extensive survey of college and industrial laboratories before deciding on plans for the new building. He will have charge of the selection and arrangement of its special equipment.

The unit to be constructed at the present time will provide principally for the distinctly engineering features of the department. The basement will include a large industrial process laboratory 80 by 40 feet, additional grinding, drying and research laboratories, an instrument room, and maintenance and repair shop. The extension will have 35 feet of headroom with a balcony at the 17-foot level covering about half the area. Special booths of reinforced concrete will be provided for experiments involving inflammable, explosive or high pressure reactions.

The first floor of the main structure will have a large senior laboratory of 45 by 85 feet where plant development problems and thesis projects will be handled. This laboratory will provide for sixty-four men at the beginning and provision is made to expand its capacity to eighty. A complete shop will be provided where students may construct their own apparatus. A furnace room for heat reaction experiments, a precision weighing room, research rooms and offices will also be on this floor. The two upper floors will provide an organic laboratory 60 by 45 feet with an ultimate capacity of ninety-six students, a fuel laboratory 60 by 20 feet, a laboratory of physical chemistry, recitation rooms, offices and research laboratories. Distilled water apparatus and ventilating equipment will be placed in a penthouse on the roof. Contaminated air from the laboratories will be completely renewed every four minutes. Unit steam heaters will be employed during the winter months.

## THE FIFTH INTERNATIONAL CONGRESS FOR APPLIED MECHANICS

THE fifth International Congress for Applied Mechanics, which is held every four years, will meet at

the Massachusetts Institute of Technology from September 12 to 16, under the presidency of Dr. Karl T. Compton, president of the institute. An attendance of three hundred members is expected. The last session of the congress was held in 1934 at the University of Cambridge.

Much of the work of the congress will be conducted at various technical sessions, at which international leaders in the field will present reports on their latest research and participate in informal discussions with other delegates. There will also be several general lectures designed to give a comprehensive rather than specialized view of the major problems of applied mechanics. The official languages of the congress are English, French and German.

To facilitate the presentation of technical papers the field of applied mechanics has been divided into three sections. One will deal with structures, elasticity, plasticity, fatigue, strength theory and crystal structure. A second section will concern hydro and aero dynamics, gas dynamics, hydraulics, meteorology, waterwaves and heat transfer. The third division will focus attention on the dynamics of solids, vibration and sound, friction and lubrication and wear and seizure.

The new Wright Brothers Memorial Wind Tunnel for aeronautical research at the Massachusetts Institute of Technology will be dedicated and numerous other exhibits of engineering equipment and demonstrations of research apparatus are being arranged. At the close of the congress delegates from foreign countries will be given the opportunity to visit the research centers of the East. These will include a trip to Washington to visit government laboratories, one to the Langley Memorial Laboratory of the National Advisory Committee for Aeronautics at Langley Field, Virginia, and others to the large industrial plants and research laboratories of Pittsburgh, Detroit, Niagara Falls and Schenectady.

Among those expected to participate are:

Professor K. Federhofer, of the Graz Technical School, Austria; Professor L. Baes, of the University of Brussels; Professor K. Popoff, of Sofia, Bulgaria; Professor K. Koerner, of the Prague Technical School, Czechoslovakia; Professor V. Bjerknes, of the University of Oslo; Professor E. Nicolai, of the Polytechnical Institute, Leningrad, and Professor H. U. Sverdrup, of the University of Bergen.

*From England:* Professor L. Bairstow, of the Imperial College, London; Professor R. V. Southwell, of the University of Oxford, and Professor G. I. Taylor, of the University of Cambridge.

*From France:* Professor E. Hahn, of the University of Nancy, and Professor E. Jouguet, Professor J. Pérès and Professor P. Villat, of the University of Paris.

*From Germany:* Professor R. Grammel, of the Stuttgart Technical School; Professor L. Prandtl, of the Kaiser Wilhelm Institute, Göttingen; Professor F. Koerber, of the Kaiser Wilhelm Institute, Dusseldorf, and Professor E. Trefftz, of the Dresden Technical School.

*From Italy:* Professor C. Guido, of Torino, and Professor Tullio Levi-Civita, of the University of Rome.

*From Holland:* Professor C. B. Biezeno and Professor J. M. Burgers, both of the Delft Technical School, and Professor E. B. Wolff, of the University of Amsterdam.

Professor Jerome C. Hunsaker, head of the department of mechanical engineering of the Massachusetts Institute of Technology, is secretary of the congress. Dean H. M. Westergaard, of the Harvard Graduate School of Engineering, is chairman of the committee in charge of the arrangements for the meeting.

## THE INFANTILE PARALYSIS FOUNDATION

THE following account is given of the Infantile Paralysis Foundation in the *Journal* of the American Medical Association:

Basil O'Connor, New York, president of the National Foundation for Infantile Paralysis, in a letter addressed to President Roosevelt on June 21 announced the appointment of a general advisory committee and four subcommittees to advise the foundation on the allotment of its funds. At that time Keith Morgan, New York, chairman of the Committee for Celebration of the President's Birthday, presented to the President a check for $1,010,000 as the principal instalment of the funds raised in the 1938 celebrations. It is expected that about $50,000 more will be added when the auditor's report is completed. The general committee has the following members:

Dr. Irvin Abell, Louisville, Ky., president of the American Medical Association.

Dr. Philip Lewin, associate professor of orthopedic surgery, Northwestern University Medical School, Chicago.

Dr. Thomas Parran, surgeon-general, U. S. Public Health Service, Washington, D. C.

Dr. Max Minor Peet, professor of surgery of the University of Michigan Medical School.

Dr. Thomas M. Rivers, director of the Hospital of the Rockefeller Institute for Medical Research, New York.

Dr. Rivers is chairman of the subcommittee on scientific research, of which the members are: Dr. Donald B. Armstrong, Metropolitan Life Insurance Company, New York; Dr. George W. McCoy, U. S. Public Health Service, Washington, D. C., and Dr. Karl F. Meyer, Hooper Foundation, University of California, San Francisco. Dr. Parran heads a committee on public health which will give aid in time of epidemics; members are: Drs. Don W. Gudakunst, state health officer of Michigan, Lansing, and George H. Ramsey, health commissioner of Westchester County, White Plains, N. Y. Dr. Peet is chairman of a committee on