

Some 200 organizations have working relations with the Bureau of Standards, and nearly 1,000 industrial experts advise with it in its research programs.

The public values in this cooperation are reflected in estimated annual savings ranging from \$1,000,000 for the perfection and adoption of the Stoddard solvent formula to \$50,000,000 to the dental profession and the public, resulting from the improved technique for making gold inlays, whereby it is assured that the inlay will have form and size identical with the cavity.

Recently the bureau, which by law is the research arm of the department's aeronautic work, established the first radiobeacon for the first national airway. A lane of radio is in effect fixed in the air to a given destination. An indicator tells the pilot at all times whether he is on or off course, in what direction and how much.

Development of a reliable radio-communication system between the plane and the ground, and further perfection of some forty instruments, each telling some factor essential to perfect flight, are other achievements in this field.

The fixing of radio-frequency measurements with unprecedented precision through quartz blocks kept at constant temperature mark progress toward perfect radio reception. This advance makes possible the measured control of frequencies to within 1 or 2 parts in 100,000.

Through refined apparatus and method the properties of steam are being redetermined as the basis of a new era in the utilization of steam. Early results promise a new order of precision in steam research and engineering.

Electrical units may now be defined and realized in mechanical units more exactly than otherwise, thus enabling the basing of such electrical units upon their original definitions instead of upon values adopted as expedients. Fundamental researches in this field are giving all electrical measurements a simpler and more exact basis.

Measurement as a universal means of research and standards as the basis of applying service to industry are making notable headway. Shop and purchase standards are increasingly being based on measured data as to the needs to be met and less on opinion.

#### BEQUESTS OF THE LATE PAYNE WHITNEY

THE appraisal of the estate of the late Payne Whitney was made public on November 22. The value of the whole amounts to \$194,328,514.

Among the public beneficiaries, New York Hospital, of which Mr. Whitney was vice-president, receives the largest gift of the total of nearly \$60,000,000 left to charities, institutions and organizations. In the last two years before his death Mr. Whitney gave the hospital \$1,367,056, while in his will he left thirty-three parts of the residuary estate, which had been divided into 300 parts, the bequest amounting to \$18,632,176. The list of debts included \$135,920 under an agreement made with the hospital in 1925 and \$97,500 under a promise in 1927 to build a residence at Bloomington Hospital for the general psychiatric director.

New York Hospital will benefit further under the clause of the will giving forty-six parts of the residue, or \$25,972,134, to the trustees, the elder and the junior Ledyard and Edward W. Sheldon, president of the United States Trust Company, to apply the principal or income "for the furtherance or development of such charitable, benevolent, hospital, infirmary, public educational, scientific, literary, library or research purposes as said trustees shall in their absolute discretion determine to be in the public interest." The testator, however, suggested that "it would be agreeable" to him if the trustees used the fund "for the aid or development of such of the above enumerated purposes as I have been interested in during my lifetime."

The trustees submitted to Deputy Commissioner Stephenson a statement of their decision as to this fund, in which they said they had "carefully considered" the best means of disposing of the forty-six parts in order to carry out Mr. Whitney's intentions as expressed in his will. They were close friends of the testator, they said, and were "much impressed" by his suggestion that the fund should be used to aid the organizations in which he was interested during his lifetime. Because Mr. Whitney died "suddenly and unexpectedly" only a short time after his will was made, the trustees said they believed that before his death he "had not become interested in any institutions other than those to which he specifically gave some of the shares of the residue."

"After full consideration of the matter," said the trustees, "we have decided that the capital shall be distributed among the New York Hospital, Cornell University, for the maintenance and support of Cornell Medical College; the New York Public Library, Astor, Lenox and Tilden Foundations; the Groton School, Yale University and the Nassau Hospital."

The shares left under the will to these organizations, other than New York Hospital, were appraised as follows: New York Public Library, \$6,210,725; Cornell University, \$2,823,657; Yale University, \$2,823,657; Groton School, \$1,129,272 and Nassau Hospital, which got only one share, \$564,611.

The trustees said in their statement that they would determine later the manner in which the capital of the \$25,972,124 fund should be distributed "among some or all of the institutions."

#### SCIENTIFIC NOTES AND NEWS

THE National Academy of Sciences has awarded its Daniel Giraud Elliott medal for the "most meritorious work in zoology or paleontology" to Professor Edmund B. Wilson, of Columbia University, for the third edition of his "The Cell in Development and Heredity." The Comstock prize for the most impor-

tant research in electricity, magnetism and radiant energy during the past five years was awarded to Dr. Clinton Joseph Davison, of the Bell Telephone Laboratories. The awards were presented at the dinner of the academy held on November 20 in connection with the Schenectady meeting, the address of presentation in the case of the Elliott medal being made by Professor Edwin G. Conklin, of Princeton University, and in the case of the Comstock award by Dr. John J. Carty, vice-president of the American Telephone and Telegraph Company.

PRESENTATION of the gold medal of the Holland Society was made in New York City on November 23 to Dr. R. A. Millikan, of the California Institute at Pasadena. The medal was given for his "achievements in the field of physical science." Dr. Fenton B. Turek made the presentation.

A NATIONAL monument is planned by the National Aeronautical Association to be erected at Dayton, Ohio, in honor of Orville and Wilbur Wright.

PROFESSOR CARL L. A. SCHMIDT, chairman of the department of biochemistry of the University of California, has received a research award of \$750 from the National Society of Sigma Xi.

DR. HERBERT L. WHITMORE, research engineer of the Bureau of Standards, has been awarded the 1927 James Turner Morehead medal by the Acetylene Association, the presentation of which was made in Chicago.

DR. ROSS AIKEN GORTNER, professor of agricultural biochemistry in the University of Minnesota, has been elected an honorary member of the Des Moines Academy of Medicine in recognition of his contributions to the chemistry of vital phenomena.

ON his twenty-fifth anniversary as dean of the college of engineering of the University of Wisconsin, a banquet will be held in honor of Professor Frederick E. Turneaure. Professor E. R. Maurer, head of the department of mechanics, will preside at the dinner which will be given on December 11, and Professor D. W. Mead, head of the department of hydraulic engineering, will be the principal speaker.

THE governor-elect of New York State, Mr. Franklin D. Roosevelt, called a non-partisan conference on November 24 to consolidate suggestions for handling the farm problem in the state. The conference was attended by about twenty farm organization leaders, agricultural authorities and the heads of several state departments, whose work is connected one way or another with farm relief. Members of the conference included Dean A. R. Mann, of the College of Agriculture; Dr. C. E. Ladd, director of extension of the

College of Agriculture, and Dr. G. F. Warren, head of the department of agricultural economics of Cornell University; Dr. Mathias S. Nicoll, Jr., state commissioner of health; Dr. F. P. Graves, state commissioner of education, Dr. U. P. Hedrick, director of the Geneva Experiment Station and Dean Franklin Moon, of the State School of Forestry, Syracuse.

DEAN ANSON MARSTON, of the Iowa State College, was elected president of the Association of Land-Grant Colleges, at the concluding session of the Washington meeting held on November 23.

EFFINGHAM B. MORRIS has been elected president of the Academy of Natural Sciences of Philadelphia. He succeeds Dr. T. Chalkley Palmer. The election of Thomas S. Gates to the board of directors is also announced.

NELSON ANTRIM CRAWFORD, director of information in the Department of Agriculture, has resigned and will be succeeded by M. S. Eisenhower, administrative assistant and secretary to the Secretary of Agriculture.

LIEUTENANT COLONEL HAMERTON, who was for some time assistant director of pathology at the British War Office and who was a member of the Sleeping Sickness Commission appointed by the Royal Society and worked in Uganda and Nyasaland with Sir David Bruce in 1908-10, also serving in Iraq and at Aden, has been appointed to succeed Dr. H. H. Scott as pathologist to the Zoological Society, London.

ROY CHAPMAN ANDREWS arrived in London on his return from his explorations in the Gobi Desert on November 21, sailing for the United States on November 23.

DR. W. B. FORD, professor of mathematics in the University of Michigan, has been granted leave of absence for the current academic year and will travel in Europe. Representing the Carnegie Endowment for International Peace, he will lecture at the Universities of Leiden and Utrecht, the University of Brussels, the Universities of Lille and Grenoble and the University of Pisa.

DR. HOMER L. DODGE, dean of the graduate school and professor of physics at the University of Oklahoma, will spend his sabbatical leave of absence in England. He and his family sail on December 13 for London, where they will reside for several months. Dr. Dodge will study educational conditions in England, with particular reference to the adaptation of graduate study to social and economic needs.

PROFESSOR JOSEPH VALASEK, of the University of Minnesota, is spending his sabbatical year in the study of X-rays with Professor Siegbahn at Upsala, Sweden.

DEAN DEXTER S. KIMBALL, of Cornell University, gave the principal address on the occasion of the hundredth anniversary of the Ohio Mechanics Institute, which was celebrated on November 23 and 24.

ON December 17 and 18 there will be held at the Gayley Chemical and Metallurgical Laboratories of Lafayette College, Easton, Pennsylvania, the third "Plasticity Symposium," with ten papers on various problems of flow. The speakers are expected to include Dr. Albert E. Dunstan, of London, and Dr. Markus Reiner, of Jerusalem.

DR. JOSEPH S. ILLICK, state forester of Pennsylvania, represented the commonwealth at the fourth New England Forestry Conference held at Portland, Maine, on November 15 and 16. Dr. Illick spoke on the "Recreational Opportunities of the State Forests of Pennsylvania."

AT the tercentenary celebration of the birth of Marcello Malpighi, held on October 19 at the Academy of Medicine of Cleveland, Professor Giuseppe Franchini, director of the institute of tropical medicine of the University of Bologna, spoke on "The Life and Work of Marcello Malpighi." Another feature of the celebration was an exhibit of Malpighi's discoveries by the department of anatomy of Western Reserve University School of Medicine, including the alveoli of the lung, Malpighian tufts in the kidney, the Malpighian bodies in the spleen, the pigment layer of the skin and the capillary circulation. Professor Franchini exhibited early books, medals and autographs.

A MEMORIAL meeting for Captain Roald Amundsen, Arctic and Antarctic explorer, will be held under the auspices of the Geographic Society of Chicago in Orchestra Hall, December 14, at 8:00 P. M. Addresses will be made by President Charles Hull Ewing, Dr. Horace Bridges and others. December 14, the anniversary of Amundsen's discovery of the South Pole, has been named the official day of mourning and memorial by the Norwegian government.

AT the inauguration of Dr. Harvey Nathaniel Davis, former professor of mechanical engineering at Harvard University, as third president of the Stevens Institute of Technology at Hoboken, New Jersey, a bronze tablet was unveiled of Dr. Alexander Crombie Humphreys, second president of the institute, who died last year.

DR. FRANK C. WAGNER, president of the Rose Polytechnic Institute, was killed on November 21 when his automobile was struck by an Indianapolis train. Dr. Wagner had been a member of the engineering department since 1896 and became president of the institute in 1923.

## UNIVERSITY AND EDUCATIONAL NOTES

THE Agricultural Engineering Building at the University of California's Branch of the College of Agriculture at Davis, erected at a cost of \$140,000, was dedicated on November 12.

HARRIMAN DORMITORY, the fourth structure to be erected in Wesleyan University's \$1,250,000 building program on the Johnston quadrangle, was recently dedicated.

EDWARD F. ALBEE, president of Keith-Albee-Orpheum, has given \$100,000 towards the \$2,500,000 endowment sought by St. Stephen's College to enable it to develop adequately as a unit of Columbia University.

*Nature* reports that the new buildings for the departments of physics and chemistry of University College, Cardiff, Wales, have been completed and the transference of classes and equipment to the new quarters is practically accomplished. Dr. Norman Thomas has been appointed professor of engineering in succession to Professor A. J. Sutton Pippard (resigned). In the Welsh National School of Medicine, Professor J. H. Dible has been appointed professor of pathology and bacteriology in succession to Professor E. H. Kettle (resigned).

DR. GEORGE RAYMOND GAGE, who has lately been associate professor of botany at De Pauw University, is now at Vanderbilt University as associate professor of biology.

FRANCIS M. DAWSON, for the last six years professor of hydraulics at the University of Kansas, has resigned to accept a professorship of hydraulics at the University of Wisconsin.

---

## DISCUSSION

### THE INTERNATIONAL UNION OF BIOLOGICAL SCIENCES

As president of the International Union of Biological Sciences I should like to suggest some considerations about this union in order to inform those countries which up till now have not yet become members.

As I know that several countries have not joined for the reason that the scientists of the Central Powers were excluded, I might begin with the statement that this exclusion has been completely withdrawn. In its meeting of June 29, 1926, the International Research Council not only took away the former barrier, but it *invited* Germany, Austria, Hungary and Bulgaria to become members of the council and of the unions attached to it. Also it may be fit to mention that at the last meeting of the council on July 13,