

According to the provisions of the Britten-Ladd bill, the buying and selling of goods, wares and merchandise will be in terms of the metric units after a period of ten years. Manufacturers are to use whatever measures they choose in production, the bill providing "That nothing in this act shall be understood or construed as applying to the construction or use in the arts, manufacture or industry of any specification or drawing, tool, machine, or other appliance or implement designed, constructed or graduated in any desired system." This safeguards manufacturing interests. Hundreds of great industrial concerns are urging the metric legislation on this basis.

Rules and regulations for the enforcement of the metric act are to be made and promulgated by the United States Secretary of Commerce.

THE SECRETARY OF AGRICULTURE ON THE WEATHER BUREAU

In his report of the Weather Bureau operations during the last year, presented to Congress, Secretary Wallace, of the Agricultural Department, says:

A new significance is attached now-a-days to the weather factor in all human conduct and operations. For centuries a topic often convenient to fill lulls in conversation and for other purposes, the present and prospective weather for a continent, almost for the whole world, is now spread before the public twice a day in all the newspapers, weather maps and a multitude of bulletins and advices.

The United States leads the world in the utility, practicability and extent of this public service, and even the smallest progressive nation recognizes that an organized public weather service is now quite as much a necessity as, say, a postal service or a police force. This is a growth and development of the last fifty years.

In the United States the general public takes the work of its Weather Bureau more or less as a matter of course. In early years its forecasts and prognostications were not taken very seriously, and its popular sobriquet of "Old Probabilities" was suggestive of the humorous estimate in which its work was generally held.

Recognizing its limitations, undismayed by the onslaught of its critics, confident of the wonderful possibilities of its useful public service and its ability to make it worth while to the nation—to make its work pay back to the nation in economic benefit many hundreds of dollars for one expended on the maintenance of the work—the bureau struggled on, bettering and extending the service little by little and in many ways.

Every paper carries the message of present and prospective weather, and for those who need fuller details special bulletins convey everything known and ascertainable.

The shippers of perishable foods and products are told of the hot and cold waves their shipments will encounter en route to any destination. To the great centers of population this foreknowledge permits the saving of

many thousands of dollars annually in losses either of products or by damage claims, or both.

Severe cold waves, heavy snows and general storms are forecast well in advance, and livestock is sheltered, provisions made for maintaining traffic, snows removed without embarrassing blockades, and every precaution taken to minimize the ill effects which would overtake every community visited unawares by these atmospheric phenomena.

Orchards are protected from frosts, and fruits and agricultural crops are saved.

In the flooded areas of the great waterways advices are given many hours, often days, and sometimes weeks in advance of the crest stages, generally to the fraction of a foot, which the flood will attain.

Only the merchants, the engineers in control of river operations and the agriculturists whose acres are subject to possible inundation are able to speak from personal experience of the accuracy and value of the flood warnings of the bureau.

On the Great Lakes vessels are often compelled to make shelter or tie up at dock during stormy conditions. It has been stated that any delay of this character entails an economic loss of from \$50 to \$100 per hour per vessel. Ignorance of the status and progress of such storms on the part of the navigators leads to an embarrassing dilemma. To leave shelter too soon is to incur hazard of storm damage. To delay unnecessarily is to suffer excess of per hour loss. The local official of the Weather Bureau steps in at this point and with his command of the weather situation he is able to broadcast advices to shipping which literally save many hours of ships' time with practically no losses in safety and security.

With the advent of the practical navigation of the air a whole new service is now demanded, a service of flying-weather forecasts and weather advices to aviators. This compels the bureau to extend its observations and measurements above the surface into the free air, which is being done in a very limited way at the present time by means of kites and little so-called pilot balloons.

THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

THE fortieth anniversary of the American Institute of Electrical Engineers will be celebrated at the annual meeting which will be held in Philadelphia from February 4 to 8. The meeting is expected to be of unusual interest and importance.

By wire and radio from Chicago, Boston, New York and Washington, President Markham, of the Illinois Central; President Maher, of the Norfolk & Western; President Budd, of the Great Northern Railway, and Vice-president Buckland, of the New York, New Haven & Hartford, on the evening of Tuesday, February 5, will address a nation-wide audience in addition to those gathered in the Metropolitan Opera House in Philadelphia.

On Monday evening, February 4, the story of the development of a profession which started only forty

years ago and now ranks in accomplishment and influence with any in existence will be told. Members of the small group of electrical engineers who formed the pioneer organization of the institute will speak. Elmer Sperry, Elihu Thomson, T. C. Martin and J. J. Carty will address the meeting. These addresses will be followed by the presentation of the Edison medal to John W. Lieb.

The new Moore School of Engineering of the University of Pennsylvania will be dedicated on the afternoon of February 6, when members of the institute will be the honorary guests of the school.

In all nine technical sessions will be held, at which more than forty papers will be presented and discussed. These will cover transmission, superpower, industrial applications of electricity, electrical machinery and electrophysical subjects.

A trip is planned for Friday afternoon to the works of the Bethlehem Steel Company. Afterwards the visitors will be entertained at Lehigh University as guests of the Lehigh Valley Section of the Institute.

The social aspects of the meeting have been well provided for, reaching their climax in the annual dinner-dance on Thursday night. Headquarters will be at the Bellevue-Stratford Hotel.

SCIENTIFIC NOTES AND NEWS

THE prize of \$1,000 offered by a member of the American Association for the Advancement of Science for a notable contribution to science reported at the Cincinnati meeting has been awarded to Dr. L. E. Dickson, professor of mathematics at the University of Chicago, who has developed a far-reaching general theory of the arithmetic of any rational algebra. The titles of the papers read by Professor Dickson, at Cincinnati, were: "Algebras and their arithmetics," "On the theory of numbers and generalized quaternions" and "Quadratic fields in which factorization is always unique."

THE Bôcher memorial prize for mathematical research was awarded at the New York meeting of the American Mathematical Society to Professor George D. Birkhoff, of Harvard University, for his memoir on "Dynamical systems with two degrees of freedom."

DR. L. O. HOWARD, chief of the bureau of entomology of the Department of Agriculture, has been awarded the cross of chevalier of the legion of honor by the French government in recognition of his services to world agriculture.

MAJOR GENERAL GEORGE O. SQUIER, head of the Signal Corps, United States Army, since 1917, was retired from active service, on December 31, at his own request.

DR. A. PARKER HITCHENS, of the Army Medical School, Washington, was elected president of the Society of American Bacteriologists at the twenty-fifth annual meeting, held at Washington. Professor Hutton Harris, Queen's University, Kingston, Ont., was elected *vice-president*; Dr. J. M. Sherman, Cornell University, *secretary-treasurer*, and Dr. E. B. Fred, University of Wisconsin, and Dr. I. C. Hall, University of California, *members of the council*.

DR. MORRISON R. VANCLEAVE, superintendent of nature study in public schools of Toledo, was elected president of the American Nature Study Society at the recent Cincinnati meeting.

PROFESSOR S. I. BAILEY, of Harvard University, returned on December 29 after two years absence at the Harvard Observatory at Arequipa, in Southern Peru, where he studied problems relating to observations of the southern sky.

TEMPORARY appointments to the staff of the Peking Union Medical College have been made as follows: Dr. L. Emmett Holt, clinical professor of the diseases of children, Columbia University; Dr. C. U. Ariëns Kappers, director of the Central Dutch Institute of Brain Research in Amsterdam; Dr. William T. Councilman, Shattuck professor of pathologic anatomy, Harvard Medical School; Dr. Adelbert Fuchs, clinical professor of ophthalmology at Vienna, and Dr. William W. Cort, associate professor of helminthology, School of Hygiene and Public Health of the Johns Hopkins University.

PROFESSORS J. J. ABEL, of the Johns Hopkins University; M. H. Roger, dean of the Paris medical school; S. Recasens, dean of the Madrid medical school, and Lustig, of Florence, were recent visitors at Buenos Aires. During their stay Professors Abel and Roger were appointed honorary members of the biologic society, and Professors Roger and Recasens were made members of the academy of medicine. A special session was held by the academy as a tribute to Ramón y Cajal.

AT the meeting in New York of the American Mathematical Society, officers were elected as follows: *Vice-presidents* for one year, Professor E. V. Huntington, Harvard University; for two years, Professor T. H. Hildebrandt, University of Michigan, and Professor J. H. M. Wedderburn, Princeton University; *secretary* for two years, Professor R. G. D. Richardson, Brown University; *treasurer* for two years, Professor W. B. Fite, Columbia University; *librarian* for three years, Professor R. C. Archibald, Brown University. President Oswald Veblen's term expires in 1924.

DR. GEORGE H. BIGELOW, director of the Pay Clinic of the Medical School of Cornell University, son of