

where for two months he made a study of the standardization movement and the manner in which European developments in this direction are likely to affect American industry.

He reports that the elaborateness of the organization for the work, its activity and the scale on which it is being carried out constitute a new development in industrial organization. Practically every important manufacturing concern in Germany is officially participating in the industrial standardization program of that country. More than a thousand German companies have formal standardization organizations within their own works.

The extent to which industrial life has been coordinated is shown by the fact that more than seven hundred national standards have been adopted. This includes only those in which several different industries are concerned, and which are approved by the central national body. In addition to this work of the central body, and closely correlated with it are no less than sixty-five special industry committees actively working on the subject.

A striking example is cited of the efficiency of national standardization as it has been developed in Germany, in the case of a rush order placed with German manufacturers for 200 locomotives for delivery to Russia. "Production of different parts was allotted to seventeen different manufacturers to be produced strictly upon the plan of interchangeable parts, no one manufacturer making a complete locomotive. No serious practical difficulty was encountered in filling the order. The inspectors made a test of the feasibility and accuracy of the plan by ordering a complete locomotive to be assembled from parts chosen at random from those furnished by the seventeen manufacturers. It proved to be ready for service immediately after assembly without the necessity of any disassembling for readjustment."

Standardization engineering is now a recognized profession. An interesting development of the last few years is the appearance of consulting engineering firms specializing in this work. There are now five such firms in Germany. The work is closely connected with industrial or efficiency engineering, in which there is a great and growing interest.

BAYER 205

As has been reported in *SCIENCE*, Professor F. K. Kleine, of the Robert Koch Institute of Infectious Diseases, Berlin, who has just returned to Europe, has been investigating the therapeutic properties of a drug known as "Bayer 205" in Rhodesia and the Congo in cases of human sleeping sickness and trypanosomiasis of domestic animals. *Nature* writes as follows: "It is well known that salts of arsenic and antimony are able in many cases to control these dis-

eases, but these remedies are far from satisfactory, and the remarkable results which were reported in Germany in 1922 in the treatment of experimental trypanosomiasis in animals and in dourine of horses with the new drug 'Bayer 205,' the composition of which has not yet been made public, aroused much enthusiasm. The completely satisfactory treatment of a human case in Hamburg, after arsenic and antimony had failed at the Liverpool School of Tropical Medicine, excited considerable interest. Other patients were treated at the London School of Tropical Medicine, and it became evident that in many cases the drug had a rapid action on the trypanosomes, and, so far as can be said at present, has effected a permanent cure. The one disadvantage is a certain irritative action on the kidneys, which, however, is not of a permanent nature. Professor Kleine was granted permission by the British Government to conduct experiments in Rhodesia, and the published accounts of his work show that the hopes which were entertained were fully justified, and that cures can be effected in a large percentage of natives suffering from sleeping sickness even in its advanced stage. As regards the trypanosomiasis of domestic animals, he has noted that it is only efficacious in ridding them of trypanosomes which are most closely related to those which produce disease in man. Experiments on the prophylactic action have shown that if cattle which are to be exposed to the bites of tsetse flies are given an injection of the drug before exposure, the chances of infection are reduced, and even if infection does occur its course is considerably modified. It is understood that Professor Kleine will, in the near future, give an account in London of his experiences."

THE METRIC STANDARDS BILL

AMONG the first bills introduced in the new session of the Congress are the Metric Standards Bills, providing for gradual adoption of the metric units of weights and measures in merchandising.

The metric bill was introduced in the House of Representatives by the Honorable Fred A. Britten, of Illinois, and in the Senate by Honorable Edwin F. Ladd, of North Dakota. The legislatures of these states, in company with many others, have petitioned the Congress to enact metric standards laws. More than 100,000 petitions, directly representing several millions of voters, are pending before the Congress, urging favorable action on adoption of the world units for weighing and measuring.

The simple decimal nature of the metric system is ingeniously stressed in the numbers of the metric bills themselves, Congressman Britten's being number 10 in the House and Senator Ladd's bill number 100 in the Senate.

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