

exist, was much less reassuring from the point of view of the central planning recommended in the Uthwatt report and endorsed from all quarters. Much is being done, however, said Lord Reith, with regard to the preparation of designs, and the supply of materials for post-war use, by standardization, economy of design and the use of alternative materials. He hopes to give an account of such activities and to make a more definite statement later, but assured the House that the need and urgency of the problem is realized and that the Government shares his view that the problems of peace are much more serious than the problems of war.

Chemical Society: New President

Dr. W. H. Mills, recently elected president of the Chemical Society, has for a long time been one of the outstanding figures in the scientific world: his influence on chemistry at Cambridge has been profound. An independent thinker, his researches bear no resemblance to those of his teachers: he founded a 'school', but he never had a 'team'. A paper by Mills is something to be read not only for instruction, but also for the intellectual pleasure it gives. His work on the cyanines, the photographic sensitizing dyes, was largely responsible for settling their chemistry, to which his former student, Dr. Hamer, has added so much. But it is for his stereochemical work that Mills is best known. In 1910 and 1914, with Miss Bain, he demonstrated the configuration of the doubly linked nitrogen atom, adding compelling evidence in 1923, with Schindler, and in 1931 with Saunders. The proof, with Warren, of the tetrahedral configuration of the ammonium ion compares for elegance with the proof, with Quibell and Lidstone, of the planar configuration of the 4-co-ordinated platinum and palladium atoms. The resolution of an allene, with Maitland, was also a remarkable achievement.

Mills's stereochemical investigations, in succession, of restricted rotation in naphthalene, quinoline and benzene derivatives, with Elliott, Breckenridge, Kelham and Dazeley are highly important. Reference must also be made to the 'Mills-Nixon' effect; to the mechanics of the Beckmann change; to a theory of absolute asymmetric synthesis; and to Mills's supreme skill with molecular models, by means of which he never fails to entrance an audience.

Dr. Dorothy Wrinch

DR. DOROTHY WRINCH has been appointed to a research professorship jointly by Smith, Mt. Holyoke and Amherst Colleges, in Massachusetts, to conduct a lecture and seminar course for advanced students on structure problems in the biological sciences. Dr. Wrinch is widely known for her exploratory work in mathematics, physics and biochemistry. During the past six years she has been working as a research fellow of the Rockefeller Foundation and has made an extensive study of the chemistry and physics of the proteins, the results of which have been published from time to time in *NATURE* and in other scientific journals. Her research work on the structure

of proteins, especially their two- and three-dimensional patterns, has attracted much attention. A distinctive feature of the new approach to the problem of protein structure which is employed by Dr. Wrinch is that it is based on the study of live proteins, while most previous structural studies have been conducted with dead proteins such as hair and silk, or with proteins which have lost their native configuration. Dr. Wrinch's views on the structure of globular proteins, based on the cyclol hypothesis, have provoked intense controversy, and while they are still by no means generally accepted, the discussion of their implications has provided a valuable demonstration of the interrelations of biology, chemistry, physics and mathematics.

Evaporation in the Sugar Industry

THE first meeting of the session of the Newcomen Society was held on October 8. Two papers were read, the first by Messrs. N. Deerr and A. Brooks dealing with the "Development of Evaporation in the Sugar Industry", and the second by Mr. S. Withington on "Automobiles in 1830". There were three phases in the progress of the practice of evaporation, it was said, the first reaching back to the time when evaporation was conducted over a direct flame, the second phase being marked by the use of steam-heated appliances and the boiling of syrup under reduced pressure, while from this was developed the present practice of multiple-effect evaporation in a series of vessels. The review of Messrs. Deerr and Brooks ranged all over the world, and reference was made to many inventors, manufacturers and plants. One outstanding event was the patenting in 1813 by the Hon. Edward Charles Howard (1774-1816), a cadet of the ducal House of Norfolk, of the vacuum pan, a master patent appearing complete and successful in operation in its first trial. The first crude idea of multiple-effect evaporation was to be found in a patent of 1826. One of the chief improvers of the practice was Norbert Rillieux, who was born at New Orleans in 1806 and died in Paris in 1894. In 1934 persons connected with the sugar industry all over the world placed a tablet to Rillieux in the State Museum in New Orleans. Multiple-effect evaporation is to-day used not only in the sugar industry but also in others in which large quantities of liquids are dealt with.

Influence of War on Surgery

MR. V. ZACHARY COPE gave a Chadwick Lecture on October 7 in which he discussed the influence of war on surgery. Surgery, or the handicraft of healing, he pointed out, has always been an art, but only recently a science. In pre-historic and historic times up to the time when Harvey discovered the circulation of the blood, surgery was a crude art, and for the most part surgeons learnt their lessons on the battle-field. When first there began to be an anatomical and physiological basis for surgery, it was upon the battle-field that trials of various discoveries were made. Antiseptics were given their first big trial in the Franco-Prussian war. Modern wars are upon

so large a scale that they provide unparalleled opportunities for the trial of new remedies, and the intensive research necessitated by the demands of war may concentrate within a year what would usually take ten years to do. The War of 1914-18 led to great advances in surgery. The prevention of tetanus by prophylactic administration of specific serum was standardized, and the treatment of shock and hæmorrhage by blood transfusion made readily available.

Moreover, the treatment of wounds underwent great changes during 1914-18. Antiseptics put into a wound were found to have little effect, and it was soon shown that the best results were obtained by excising the damaged parts of a wound. There is no doubt also that the same war was the chief means of putting thoracic surgery upon its present sound foundation. Even more striking was the rapid and wonderful development of plastic surgery whereby hideous deformities of the human face were remedied. In the recent Spanish Civil War, the main contribution to the advance of surgery was the discovery by Trueta that wounds treated by excision and encasement in plaster of Paris healed better than those which were treated by splinting and daily dressing. This was a useful application of the Winnett-Orr treatment and could be applied to simple wounds, to wounds of joints, and to open fractures. The present War has already provided some important contributions to surgery. The work of Colebrook on the local antiseptic action of the sulphonamide group of drugs, and the experimental results of Zuckerman's researches on the effect of blast, are noteworthy.

Vitamin B₁ in Buds of Trees

LARGE quantities of vitamin B₁ have been found in the buds and leaves of many common American trees by Prof. P. R. Burkholder and Prof. E. W. Sinnott. Using a constant-temperature tissue culture laboratory, they found heavy concentrations of the substance in the buds of oak, red maple, horse chestnut, elm, sycamore and white pine trees. Although vitamin B₁ is now produced by synthetic chemical processes, this discovery points to a large natural source of vitamin B₁, and this finding may offer a clue to the source of essential vitamins for many forest animals, according to Prof. Burkholder. The vitamin seems to be formed in the young leaves and growing points of the shoot, whence it is transported to the roots and various portions of the plant.

Experiments in which basswood and maple trees were ringed in the spring show that almost no vitamin B₁ has appeared below the ring in midsummer. Yet huge quantities of the vitamin have been found above the ring. This seems to indicate that ultimately a ringed tree may die not only from lack of food but also from vitamin starvation. These researches show that most green plants contain sufficient amounts of the vitamin for their normal growth. The amount of essential minerals in the soil and sunlight apparently influence the amount of B₁ which green plants are able to produce. Vitamin B₁ is heavily concentrated in the buds, according to Prof. Burkholder, just as it is in grain.

Health of Paraguay

IN the July issue of the *Boletín de la Oficina Sanitaria Panamericana*, Dr. Ricardo Odriosola, Minister of Health for Paraguay, states that organized public health work in his country began on August 16, 1889, with the creation of the National Health Council, which was merged in 1917-18 with the National Public Assistance and Welfare Commission (created in 1915) to form a Department of Health and Welfare. This was succeeded on June 15, 1936, by the present Ministry of Health, with its five departments—Public Health of the Capital, Rural Hygiene, Hygiene, Child Welfare and Odontology. Paraguay's most serious problems at present are surveys of the causes of death and the system of school lunches, to which 15 per cent of the municipal income has been assigned, and which are now being supplied in eighty towns. Leprosy comes next in importance. Compulsory vaccination against typhoid fever has been introduced. Malaria has become increasingly severe, and fourteen sanitary commissions have been organized to combat it by distributing quinine, oiling breeding-places of mosquitoes and draining swamps. Hookworm disease is also being combated.

Announcements

DR. A. EICHORN, director of the Animal Diseases Station, Beltsville, Maryland, has recently visited Great Britain for consultations with the Ministry of Agriculture and Fisheries and the Agricultural Research Council. He has visited several institutes concerned with problems of animal health, and discussed with members of the staff the experience in Great Britain and in the United States in the control of various diseases of livestock. It is hoped that the liaison thus established between American and British veterinary scientists will be continued and extended.

THE following appointments have recently been made in the University of Sheffield: Miss A. R. Murray, assistant lecturer in chemistry; Mrs. Margaret G. Happey, assistant bacteriologist; Mr. H. I. C. Page, assistant demonstrator in radio physics.

THE following appointments and promotions have recently been made in the Colonial Service: D. J. Billes, agricultural superintendent, Gold Coast; P. L. Bradley, agricultural officer, Nigeria; H. M. Tickler, agricultural officer, Northern Rhodesia; M. S. Parry, assistant conservator of forests, Tanganyika; J. McCulloch, veterinary officer, Nigeria; G. C. Weatherhead, veterinary officer, Uganda; A. B. Killick (deputy director of agriculture, Tanganyika), deputy director of agriculture, Kenya; G. W. Lock (agricultural officer), senior agricultural officer, Tanganyika.

ERRATUM. In the letter entitled "Constitution of a Sulphonamide" in *NATURE* of October 4, p. 409, Mr. M. A. Phillips referred to "a tautomeric mixture of the forms II and III"; this should read "forms I and II".