

NEWS AND VIEWS

Finland and the U.S.S.R.

HOSTILITIES between these countries have ceased, and a peace has been signed which gives the U.S.S.R. substantial territorial gains. Finland loses much of her industrial and agricultural areas by this treaty, and nearly half a million of her population are being transferred from the ceded territory to other parts of Finland. The country has suffered a grievous blow, not through any lack of valour, but through the overwhelming military power of the U.S.S.R. Now the Finns have turned with characteristic courage and energy to the task of reconstruction. Towns and houses destroyed by aerial bombardment have to be rebuilt, new towns created for the transferred people, and the whole of the economic life of the country has to be restarted under the new conditions, while the defence of the new frontiers must also be organized. The Finns have saved their freedom, and on this the nation will rise again. The help in men, money and materials still so sorely needed will surely not be grudged by right-thinking peoples who have watched the struggle of this gallant democracy.

Water Pollution Research

THE Department of Scientific and Industrial Research has opened a new Water Pollution Research Laboratory at Watford equipped for work on the problems of water supply, sanitation, and the recovery and utilization of valuable materials from trade effluents of many kinds. Plans for building a research station for work of this nature have been postponed by the War, but temporary accommodation has now been obtained. Although no central research station has hitherto been available for the work of the Water Pollution Research Board, many investigations have been carried out in the last few years, on behalf of the Board, in other laboratories. Among other important work, it has been shown that certain clays and glauconitic sands found in Great Britain yield material capable of softening hard water, and that certain synthetic resins can be used to remove dissolved salts and other substances from water.

The Board has also co-operated with industry in the investigation of river pollution by beet sugar and milk factory effluents. Another important investigation was that on the effect of the discharge of sewage into the estuary of the River Mersey on the deposition of silt and other solid matter in the estuary, and an investigation is now in progress at a branch laboratory in Birmingham, in co-operation with the Birmingham Tame and Rea District Drainage Board, which has indicated that the capacity of percolating filters for treating sewage can be increased by at least 50 per cent. Communications intended for the Director of Water Pollution Research should be addressed to the Water Pollution Research Laboratory, Langley Road, Watford, Hertfordshire.

Radioactive Standards

RELIABLE standards of weak radioactivity are required in a number of fields of work; for example, by geologists, geophysicists and cosmologists concerned with the radioactive content of the materials of the earth's crust; by biological and medical investigators employing the technique of radioactive indicators or internal artificial radioactivity therapy; and in studies of radium and thorium poisoning. A committee of the United States National Research Council is endeavouring to facilitate the needs of such workers by preparing a series of feebly radioactive standards which will be analysed at a number of laboratories equipped to make such measurements. These standards will ultimately be deposited at, and certified by, the National Bureau of Standards at Washington, D.C., to be issued as working standards to investigators who may desire them.

The standards in preparation are: (1) *Radium standards*, comprising 100 c.c. solutions in sealed flasks, for use as emanation standards; and 5 c.c. solutions in sealed ampoules for use as gamma-ray standards. (2) *Thorium standards* in the form of sealed ampoules containing sublimed thorium chloride for use in preparing standard thorium solutions. (3) *Standard rock samples* consisting of a variety of finely ground minerals of certified radium and thorium content, which may be used in fusion techniques for checking methods of extracting radon and thoron from rock samples.

Drug Addiction

IN a paper read at an evening meeting of the Pharmaceutical Society on March 12, Dr. Walter B. Kennedy, a member of the Poisons Board and formerly professor of physiology in the University of Baghdad, made some interesting references to the influence of habit-forming drugs brought to his notice in the Near East and elsewhere. A topical and important aspect of drug addiction is the problem of maruanha, the name by which the hemp plant, *Cannabis sativa*, is known in the United States. Maruanha, said Dr. Kennedy, is destructive of the moral sense: "Under its influence there develops a ruthlessness rarely encountered under other conditions, and a spurious courage, or rather a complete disregard for danger and consequences which results in horrible crimes of violence—often devoid of motive. An additional danger is that the addict is often led into indulgence in the white drugs, morphine, heroin and cocaine". Another exotic drug which has lately found its way to Europe is mescal or peyote, obtained from a Mexican cactus. It is an inebriant producing even more brilliant and prolonged hallucinations than does hashish.

Dr. Kennedy referred to the excessive use of endocrine products of which evidence was seen occasionally; he mentioned in this connexion the

fashion which swept through a girls' school of taking thyroid for the purpose of securing lithe figures, a fashion which had serious results in several instances. There is a wide gap between maruanha and thyroid and a still wider one between the former and aspirin. "I may surprise some," said Dr. Kennedy, "if I refer to aspirin as a drug which gives rise to habit, and without being dogmatic I would merely give my opinion that it does". Another form of addiction, he said, was provided by certain medicated wines. Many people delude themselves with the idea that when a wine was 'medicated', it was somehow free from the stigma of what is picturesquely called the 'demon drink'. But there is no excuse for maruanha and no quarrel with the penalty which may be imposed in the State of New Jersey upon traffickers in this woeful drug, namely, thirty years imprisonment and a fine of ten thousand dollars.

Twenty-five Years of Transcontinental Telephony

It is recalled in the *Laboratories Record* of the Bell Telephone System that on January 25, 1915, just twenty-five years ago, the first transcontinental telephone call was made across America and the east and west were united. President Woodrow Wilson talked from the White House across the country testifying to the nation's pride "that this vital cord should have been stretched across America as a sample of our energy and enterprise". The inventor of the telephone, Alexander Graham Bell, in New York, repeated across the continent to San Francisco the first words ever heard over a telephone, namely, his call to his assistant, "Mr. Watson, come here, I want you," to the same T. A. Watson who had heard them in the garret workshop in Boston in 1876. That ceremony ushered in transcontinental service twenty-five years ago. At that time it cost 20.70 dollars to call San Francisco from New York. Now it costs 6.50 dollars for a station to station call and only 4.25 dollars after seven in the evening and all day on Sunday. In 1915 it took about half an hour, on the average, to make a connexion; now most calls are put through without 'hanging up'. The Bell System concludes by saying: "These are measures of progress in the never-ending effort of the Bell System to give faster, clearer, more useful and courteous service to the people of the United States".

Development of the Battery Vehicle

In an article contributed to the *Electrical Review* of February 16, J. H. Cansdale states that during the last six years the number of battery vehicles has been rapidly increasing, and war-time conditions will most probably create a very much greater demand for them. In 1933, the number of battery vehicles registered in Great Britain and Northern Ireland was about 1,400, and it is estimated that the number at the beginning of this present year was about 6,500. Any service with short runs and frequent stops, particularly with loads between five and thirty cwt., is suitable for the battery vehicle. A large proportion of tradesmen's and similar services in towns and suburban districts comes within this

category. The great advantages of the electric vehicle in lower running and maintenance costs are now augmented by the absence of restriction on the use of electric power for battery charging, in contrast with the present petrol restrictions.

The design of modern battery vehicles has been modelled closely on automobile practice. The weight of the battery necessitates a rather heavier frame, and special provision has to be made for accommodating the battery crates and for their easy inspection and removal. Four-wheel brakes are standard, and the drive to the back axle is by means of a propeller shaft with either a double-reduction bevel or worm gear. Pneumatic tyres of the medium pressure type have been found to give the best results by combining smooth running with economical power consumption. All the principal battery manufacturers now market special traction types able to withstand vibration and to provide heavy starting currents. Of the two principal types available, the lead-acid cell is most usually employed as its first cost is less than that of the alkaline battery. On the other hand, the latter has a life of about nine or ten years, whereas a lead-acid cell lasts only three or four, so that the difference in cost is levelled out. Owing to its higher internal resistance, the alkaline cell has a lower efficiency. For the small delivery van of the 12-15 cwt. class, the normal range of battery capacities is from 129 to 290 ampere hours. Capital costs are heavier than for an equivalent motor vehicle, but the life is approximately double, and both maintenance and running costs are considerably reduced.

Indian Sculpture and Architecture

THE Madras Government Museum has recently issued two publications, one of which is a guide to the archaeological galleries of the Museum and is intended as an introduction to South Indian temple architecture and sculpture, while the second contains an illustrative series of photographic reproductions of examples of Indian sculpture, mostly southern, for use with the guide ("Guide to the Archaeological Galleries". By Dr. F. H. Gravely and C. Sivaramamurti and other curators. Madras Government Press. Pp. v + 48 + 4 plates. 8 annas. "Illustrations of Indian Sculpture, mostly Southern, for use with the Guide to the Archaeological Galleries". By Dr. F. H. Gravely and C. Sivaramamurti. Pp. ii + xlv plates. Rs. 1.8). In the introductory remarks anticipating the text of the Guide, the principle is laid down that "The display of museum collections to the public aims at fostering a deep and intelligent interest in the universe of which we form a part, especially our immediate surroundings", and it is added that the arrangement and display of this section of the Museum's exhibits have been attempted in such a way as to help visitors "to recognize for themselves the general affinities and probable period of temples and sculptures they see outside". With this praiseworthy objective, the authors sketch briefly the history of Indian art from the time of Asoka and in the centuries before our era down to the 'modern' period, with