

### Estuary Channels and Embankments

IN the Vernon-Harcourt Lecture delivered at the Institution of Civil Engineers on December 8, Dr. Brysson Cunningham discussed "Estuary Channels and Embankments". The two chief objects of the engineering treatment of estuaries are the regulation and improvement of the navigable channel and the protection of adjacent low-lying land from tidal inundation. From the point of view of navigation, defects arise from three main causes: (1) a shifting, unstable channel; (2) a narrow bed, with inadequate depth of water; and (3) a bar. In carrying out estuary training works for the removal or amelioration of the first defect, certain principles have to be observed in order to avoid risks and possibilities involved in the confinement of the stream within a definite course. The design of different types of wall was considered by Dr. Cunningham. As regards shallowness of the river bed, the principal remedy, although not of a permanent nature, is dredging by means of floating plant of various types. The cause and origin of bars were next discussed, and the peculiar conditions attached to dredging operations in exposed situations were set out with particulars of some of the latest and largest dredgers engaged on that class of work. Dealing with estuary embankments, Dr. Cunningham pointed out that in the case of the Thames alone, there are more than 40,000 acres of serviceable marshland, utilized for a variety of purposes, which have to be protected at high water in this way, while, in the maritime provinces of Holland, whole districts lie so low as to be permanently below sea-level. The embankments on the Thames, the Trent and at the mouths of the Schelde and the Maas were illustrated and the nature of their construction explained, including the design of sluices for dealing with the drainage of inland water.

### Television on a Large Screen

ACCORDING to reports in *The Times* of December 8 and 10, two demonstrations have been given recently of the reproduction of the London television programmes on a large screen. In the first case, Mr. J. L. Baird showed the B.B.C. television programme on a large cinema screen. The receiver utilized a cathode ray tube, on the luminescent screen of which a small picture, 2 in. square, was first formed. This was then projected optically on to the large screen to give a picture about 8 ft. by 6 ft. At all times the picture, it is stated, was quite clear as viewed from both the front and the back of the theatre; the focus was good and there was never sufficient interference to disturb the enjoyment of the audience. The second demonstration was given by Messrs. Scophony Ltd., using the pioneer optico-mechanical methods developed by that company. In this case, two receivers were available, one giving a screen picture 6 ft. by 5 ft. suitable for a medium-size hall, and the other being a home receiver providing a picture 2 ft. square. The first receiver was demonstrated to a large audience, who saw a very acceptable reproduction of the afternoon television programme. The pictures were free from flicker and were bright

enough to be seen in comfort by everyone present. It seems likely that these two demonstrations will mark a new stage in the progress of the technique of television reproduction.

### Thermionic Valve Data

THE modern thermionic valve has now become of world-wide importance, not only in connexion with radio broadcasting, but also in its many applications in scientific and commercial instruments, and in industrial processes. Unfortunately for those who have to make constant use of valves of the usual receiving type, their popularity and rapid advances during the past decade have resulted in a multifarious range of valves for different purposes. In spite of several earnest attempts, no satisfactory means of classifying these valves has been standardized, and the various manufacturers have accordingly adopted different and arbitrary codes for designating the types of valves which they supply. Amidst this confusion and in the absence of adequate co-operation between manufacturers in different countries, it is natural to find that the number of types is constantly increasing and is now quite unnecessarily large. Pending the time when more uniformity is arrived at, however, the *Wireless World* has been fulfilling a useful public service for the past ten years by issuing a list of valve types with the appropriate technical data. A search through these lists reveals in a striking manner not only the growth in the number of valves, but also the increasing amount of information which is needed about a valve in order to select a suitable type for any purpose. The issue of the *Wireless World* of November 25 contains the latest of these lists in the form of a nineteen-page supplement. The data here provided cover more than 900 current valve types, both British and American, as many as fourteen numerical characteristics being given for some of the valves. A useful guide to valve bases is also provided. Such a publication cannot fail to be of great utility to all scientific and technical workers who make use of the modern thermionic valve.

### Accessions to the British Museum (Bloomsbury)

AMONG the accessions to the collections of the British Museum (Bloomsbury) announced in December are a number of antiquities from the Near East and Egypt. Of these, among the more noteworthy are those obtained by Mr. M. E. L. Mallowan's excavations of last season on sites in northern Syria. Clay tablets from Chager Bazar, dating from about 2000-1900 B.C., deal with accounts, mostly relating to corn. Although the names of the months are Babylonian, the tablets appear to indicate that the district was then under the dominion of Assyria. Objects from another site, Brak, are of considerable importance in the prehistory of western Asia, as they include black-on-white pottery, similar to that found by Sir Leonard Woolley at Atchana near the mouth of the Orontes, and bearing out his conclusion as to the international importance of that region as an emporium linking the Mediterranean and the

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interior of western Asia. Brak has also afforded from its early levels objects belonging to a Sumerian civilization of the Archaic period, revealed in this area for the first time. Among other accessions are the now famous inscriptions on potsherds from Lachish, which are deposited by the Wellcome Trustees. These inscriptions, the Lachish letters, are the earliest known example of written Hebrew, and refer to events mentioned in the Bible and relate apparently to the siege of Lachish by Nebuchadnezzar. The Egypt Exploration Society, at the instance of Dr. Alan H. Gardiner, has presented to the Museum the antiquities allotted to it from the Society's excavations on the site of Sesebi in the Egyptian Sudan, which were exhibited at the Society's rooms in July last. It will be remembered that these excavations are of special importance for the light they throw on the earlier years of Akhnaton's rule.

#### Introduction of Plants into British Colonies

THE Colonial Office has performed a useful service to growers and exporters of plants and also to the British Colonies, by the issue of a digest of the legislation on plant introduction in force at the end of December 1936 (London: H.M. Stationery Office, 1937; 1s. net). Introduced pests and diseases have occasionally done much damage: instances cited are 'brown hardback' (*Phytalus Smithi*), causing serious losses to the sugar planters in Mauritius; the 'wither tip' disease, largely responsible for the ruin of the lime industry in Dominica; and the 'witchbroom' disease of cacao, now causing so much havoc in Trinidad. Since then, in 1876, Malta first instituted an ordinance "to prevent the introduction of diseases affecting agricultural produce", enactments have grown in number and diversity, and there is now real need for their comprehensive survey, such as is rendered possible by this publication, with the view of gradually simplifying procedure and introducing where possible more legislative uniformity.

To this end the third Imperial Mycological Conference, held in London in 1934, urged the adoption of a uniform type of health certificate throughout the Empire; and a standard form accepted by all Colonial Governments appears in the appendix to this summary. Furthermore, the geographical grouping of some Dependencies permits a measure of common action in these matters which has great practical advantages, and the colonies of West Africa have entered into a plant exchange convention under which each Dependency enacts similar legislation. A similar convention now links the Union of South Africa, Southern Rhodesia and the Belgian Congo, to which Northern Rhodesia and Nyasaland have since become parties. Proposals have also recently been approved for a similar arrangement in respect of East African Dependencies, and the necessary legislation is under consideration. This useful summary may supply the basis upon which further common action may be based that may lighten restrictions upon trade without removing

the necessary check upon the control of distribution of disease.

#### Manchester Scientists' Peace Association

THE Manchester Scientists' Peace Association, which has recently been formed with the objects of co-ordinating the influence and efforts of men of science of the Manchester district in the cause of peace, and of promoting a scientific and objective attitude to peace problems, held its first public meeting in the Milton Hall, Manchester, on December 13. The meeting was addressed by Prof. H. Levy, who stressed the importance of applying scientific methods to problems involving social relationships. He asked his audience not to be frightened by the feeling that the interaction of science and society is a political issue; politics it may be, but it is none the less amenable to attack as an objective problem. The professional politician, educated as a rule in the classical tradition, is frequently unable to appreciate this, and the entry into politics of more men of scientific training is most urgently required. But whether actively engaged in politics or not, the scientific man, especially if he has brought children into the world, cannot evade the responsibility of ensuring to the best of his abilities that the powers of science are used for the benefit, and not for the destruction, of the coming generation. A general meeting of the M.S.P.A. is to be held on January 17, at which a constitution will be proposed, officers elected and a programme of activities discussed. Particulars can be obtained from the provisional honorary secretary, Mr. D. C. Henry, The University, Manchester.

#### Impacts of Science

IN his Streatfield Memorial Lecture on October 15, entitled "Chemical Changes and Chances", Sir Martin Forster described some of his early experiences and the development of science in his early years which not only give a vivid and happy picture of Streatfield's personality but also afford a highly suggestive glimpse of the reactions of discoveries and personalities in the same period. He recalls being assured in November 1892 that all the most important discoveries in organic chemistry had been made, and then refers briefly to the way in which Nef, Claisen, Fischer, Pope and others rapidly enlarged our ideas of valency, intramolecular change, the configuration of sugars, the Walden inversion, etc. In discussing the reactions of science on industry, Sir Martin stresses the factor of the reaction of personality to background, and the rarity of finding a brain in which chemical and commercial instincts are co-equally powerful. He endorses Mr. Cronshaw's conclusion regarding the languishing of the dyestuffs industry in Great Britain and repudiates the unjustified condemnation of the business man in which chemists sometimes too readily indulge. On the contrary, he asserts that, in his experience, business men take reasonable trouble to ascertain the facts with which they have to deal, and he cites examples of benefits which the world enjoys through their enterprise.