

drive the fan is only nine hundredths of a horsepower, and its capacity is a third of a cubic metre per second. The electrical vehicle used for transporting the degasser is operated by an 80-volt battery. According to recent experiments, an area contained by a circumference of about 300 metres and covering sewers approximately 1,000 metres in total length can be degassed in 10–15 minutes. It was proved that the ordinary method of circulating fresh air in the system was useless and sometimes dangerous.

Effects produced by Ultra-Sonic Vibrations

AN abstract of a paper read by Dr. L. A. Chambers of the School of Medicine of the University of Pennsylvania to the Institute of Radio Engineers, on the effects produced by intense sounds on liquids, has been issued by Science Service, of Washington, D.C. The intense sounds produce impacts on the liquids comparable to mechanical blows and make changes in them which will sometimes be useful in science and industry and should prove most useful in the field of medicine. Dr. Chambers uses sound vibrations having a frequency of 1,200 cycles per second and an intensity which is at least equal to one hundred times that of a large orchestra when playing together. These vibrations are produced by electric oscillators and kindred devices. When milk has been subjected to these vibrations, it acts as if it were purely homogeneous. The cream cannot be made to separate from it, and it is stated that it is now more digestible. Rapid progress is being made in the field of medical research, and it has been shown that certain organisms are killed by the pressure pulses. Dr. Chambers' researches have shown that these intense mechanical vibrations will be most useful for the preparation of serums. Whisky subjected to this treatment aged very rapidly. Samples subjected to it for seven hours produced a whisky which experts stated to be equivalent to one which had been aged in the wood for four years in the usual way.

Forests in the Canadian Prairie Provinces

A FOREST SERVICE BULLETIN, No. 88, has been issued under the auspices of the Department of the Interior, Canada (Ottawa, Printer to H.M. the King, 1936) entitled "Forest and Forest Industries of the Prairie Provinces" by J. D. B. Harrison of the Division of Forest Economics. The Prairie Provinces occupy a part of the interior continental plain of North America and have thus many characteristics which differentiate them from other parts of the Dominion. A National Forest Inventory was commenced jointly in 1929 by the Dominion and provincial forest authorities but had to be retarded owing to the general economic situation; in spite of this it has proved possible to collect a large amount of information on the subject of these Prairie Provinces and this the author summarizes in the present bulletin. A brief but comprehensive review of the principal factors affecting the forests, together with a description of the forests themselves, is given. The dominance of agriculture as the principal industry of the region is emphasized, and questions

of population and of communications dealt with, in order to place the forest resources in their proper economic perspective. Sufficient historical material is included, in the appropriate chapters, to explain the course of events leading up to the present situation. The bulletin is written by an economic research officer from the purely economic point of view. It is, however, none the less disquieting to observe that the forests of a country are still mainly regarded from the point of view of what they can be made to yield in produce to man, whilst the protection they offer to mankind as a whole, and to certain of the natural resources of the country, are so little appreciated until almost irretrievable damage by over-exploitation has been done.

Agricultural Statistics

THE International Institute of Agriculture, Rome, has now published the sixth of its economic commentaries, "The World Agricultural Situation in 1934–5" (price 25 lire). As in the preceding issue, the volume is divided into two parts, the first of which deals with world agriculture and the second with the individual policy and conditions in the different countries. Both sections contain a wealth of interesting material of which it is impossible to give more than the briefest outline. Under the first heading, an analysis is made of the more important changes and trends in world economy as influenced by national planning, together with a survey of the market conditions of the principal agricultural crops and livestock. The year under review was a period of adjustments and adaptations involved in the carrying out of schemes of planning and control rather than a period of new initiations in economic organization, the outstanding feature being the increasing development of economic autarchy, which in theory stands almost universally condemned. The effects of this tendency, economic, political and technical, are discussed at length, and it is shown that greater stability is now being sought by the formation of large economic combinations between countries usually with close political associations. Further, the various forms of industrialization that are taking place in the so-called agricultural countries are shown to be producing far-reaching repercussions upon international economic relations. The information in the second part is principally concerned with Government measures for farm relief and the economic conditions of agriculture prevailing in the various countries. More than thirty countries are considered, information with regard to Austria, Portugal and Portuguese Colonies being included in this issue for the first time. Data for Argentina and Poland which were omitted in the last issue of the commentary are again included.

Medical Centre for Moscow

A LARGE medical centre which will include the All-Union Institute of Experimental Medicine, the institutes of the State Health Department, the Second Moscow Medical University and a traumatological institute, will be built on the outskirts of Moscow

between Pokrovskoye-Streshnievo and Khoroshevsky Serebrianny Bor in 1937. Among the buildings already under construction on the site are the Epidemiological and Microbiological Institutes of the State Health Inspection Department, veterinary stations for horses, laboratories where horse serums and vaccines will be prepared and a department to house small animals for experimental purposes. The Traumatological Institute will have a children's clinic for the study of common injuries, especially those sustained in street accidents. An Orthopædic Department, a special jaw clinic, and a large department for mechanical therapy are also included in the plans for this Institute. The buildings of the All-Union Institute of Experimental Medicine will be commenced next spring and will occupy a site of 1,000 acres. The Institute will also serve as a post-graduate medical school.

Gold Coast Surveys

THE report of the Gold Coast Survey for 1935-36 (Accra, 1936. 1s.), while recording a steady development of useful work, lays stress on the want of resources for the adequate survey of the Colony. It is the difficulty which most colonial surveys have to face and represents the results of a short-sighted policy. The greater part of the Northern Territories is completely unmapped. In the south and in Ashanti only part of the primary triangulation is completed. Development of prospective mining areas is liable to be checked by want of geological surveys, which cannot be carried out without a topographical map. Air surveys have been considered, but the two difficulties are much densely forested country and a lack of fixed points from which to work. Another urgent matter is the extension of geodetic levelling. An old network of levels exists, but requires checking with modern standards of accuracy.

Steam Locomotives and Small Craft

FROM the Association of Engineering and Ship-building Draughtsmen come two pamphlets—"Steam Locomotive Design" by D. Patrick (London: The Draughtsman Publishing Co., Ltd. 4s.) and "Small Craft Types" by John A. Mavor (*ibid.* 3s.). The former discusses the design of component parts and includes all the more important details, except the boiler and its attachments. An earlier publication dealt with preliminary design, and the present work carries it on from the point at which wheel arrangements, cylinder sizes, etc., have been determined, and, with the above exception, practically completes the subject in relation to engines of normal design. In his pamphlet, Mr. Mavor gives general descriptions and data of the humbler types of craft including trawlers, tugs, lightships, dredgers, etc., and explains the special features and working conditions peculiar to each. The main outlines of their design are presented, and the methods are indicated by which the forms of structure, machinery and fittings are adapted to meet the different conditions under which these ships are navigated and operated.

Catalogue of Fishes

GÜNTHER'S "Catalogue of Fishes in the British Museum" was issued in 1859-70, and has long been out of print. The great work of Cuvier and Valenciennes was never finished, and Günther's is the only complete systematic monograph of the group in existence, and is therefore indispensable to ichthyologists. The time that has elapsed since Günther prepared his catalogue has seen the collection on which it was based quadrupled, and the number of known species about doubled; these factors alone would make the preparation of a revised edition a heavy task, and if to them be added the necessary study of the numerous systematic monographs and faunistic memoirs that have appeared since the catalogue was published, it is clearly one that no man could hope to complete. In these circumstances, to meet an evident demand, the Trustees of the British Museum have decided to reissue the "Catalogue of Fishes" in its original form, and at the original price of £3 9s. for the complete work in eight volumes. It will be available early in 1937.

Pathology and Bacteriology at Leeds

THE annual report of the Department of Pathology and Bacteriology of the University of Leeds, recently issued, by Profs. M. J. Stewart and J. W. McLeod, gives an account of the teaching and research work and routine examinations conducted in the Department during 1935. The research work includes the systematic investigation of industrial pulmonary affections, studies on new growths, and an investigation of types of the diphtheria bacillus present in six thousand cases of diphtheria occurring in England, Scotland, Ireland and Germany. Prof. R. D. Passey contributes a summary of researches carried out in the Department of Experimental Pathology and Cancer Research.

The Indian Earthworm

TEN years after its first appearance, Prof. K. N. Bahl's monograph on *Pheretima*, the Indian earthworm, has passed into a second edition (Lucknow: Lucknow Publishing House, 1936). That is sufficient to indicate that the work has found its place as a guide to teachers and students of Indian zoology, as one of the excellent series of Zoological Memoirs on Indian Animal Types, projected and edited by Prof. Bahl. The first edition was favourably reviewed in NATURE (119, 557; 1927), and the second is even better in that the author has revised the text and incorporated new information and illustrations.

Birds of Agricultural Importance

THE Ministry of Agriculture and Fisheries has issued, bound in an attractive folder, a group of twenty-three "Advisory Leaflets", dealing with the agricultural activities of common British birds. Several of these have already been referred to in NATURE. The price is 1s. 6d. net.