

in Washington for permission to place transmitting and receiving equipment on the top of its Pittsburgh building and at certain suburban situations. With this service available, any private or commercial telephone subscriber could converse with the occupants of a properly equipped motor-vehicle moving on the street or highway within a radius of fifteen miles. Each truck or motor-car equipped for the service would have its own telephone number, and would be reached through a special operator, who would handle these calls. It is to be known as the 'vehicular radio-telephone service' (*Elect. Rev.*, June 7).

The Bell Telephone Company's present plans include making the service available to public utility company vehicles and equipment, up to seven of its own vehicles. This would permit quick mobilization and centralized direction of motor vehicles in the event of major emergencies. There are at present limitations on the number of channels available. Otherwise, even at high cost, there would be an appreciable public demand for such telephone installations in privately owned cars. The limitation of the channels will restrict the spread of the service, but in the case of many hospital and police ambulances it should prove very useful.

#### Rising Cost of Generating Electricity

METHODS are being discussed by electrical engineers to meet the rising costs of generating electricity. Even before the War this was becoming a serious problem. In some cases it had rendered the raising of tariffs inevitable. It apparently was the only alternative to bankruptcy, and the War has certainly not improved the situation. The Electricity Commissioners not long ago published a list of these changes. According to the *Electrical Times* of July 11, Sir Percival Bower, chairman of the Birmingham Electricity Department, made a speech on July 2 in which he stated that his committee is anxious to avoid any increase in tariffs, notwithstanding the formidable increase in costs all round. A fairly large surplus on the last year's accounts is being carried forward to cover any emergency expenditure. Another way of coping with the rise in costs is proposed by Mr. F. H. Whysall of Belfast. If, he says, the department is to pay its way and have a reasonable balance for renewals and reserve accounts, it is impossible to maintain the present low level of charges to the consumer. He intends to recover these increased costs by an equitable method, taking into account the rise in prices of coal, stores and wages. The large consumer is easily assessed, he already has a coal clause in his agreement and he will now feel the effect of other rises in commodities or wages on a similar sliding scale. The principle cannot be applied so precisely to the ordinary consumer, but it happens that an approximation is fairly represented by charging him a round figure of 10 per cent extra for the present, prior to the inclusion of a similar kind of coal clause in his bill. As for the slot-meter house-holder, he will lose his five per cent cash discount.

#### Development of Rural Electrification in England

SINCE the War began, there is evidence that the sales in Britain of electric milling and dairy equipment have been increasing. In addition, many rural supply authorities find that inquiries as to costs and running expenses of various types of electric motors and pumps are being made on an increasing scale. On the other hand, the extensions to isolated farms will be both more difficult and more costly owing to the rise in the price of materials. In the *Beama* journal of May, it is pointed out that if the War continues for two or three years, it will be necessary for the Government to see that these extensions are carried out in the interests of the better utilization of farm labour. But a question of greater importance is the connexion of farms which are not making a full use of supply mains quite close to them. Just before the War, the most encouraging feature of rural electrification was the willingness of landlords to bear the capital cost of connecting up electric supply, the tenants paying the interest charges. There is also scope for the County War Agricultural Committees to facilitate the group interconnexion of farms. The sanction of the Ministry of Agriculture would have to be sought before these committees could act in this way. The Ministry would probably be sympathetic. Concern is being felt about the problem of threshing on isolated farms, which either possess no tractor or should be making the full use of the farm tractor when it may be desirable to thresh as well. Amongst problems which cripple development of electric power are the high rates customary in times of emergency, and also the cost of the necessary way-leaves negotiations which sometimes, for an isolated farm, cost as much as ten per cent of the total cost of giving supply to the farm.

#### Agricultural Literature

THE expansion of the Rothamsted Library since the first edition of a catalogue in 1926 has made a new edition necessary (Rothamsted Experimental Station, Harpenden. Library Catalogue of Printed Books and Pamphlets on Agriculture Published between 1471 and 1840. Second Edition 1940. Pp. 293+1 plate. 12s. Paper Covers; 15s. Cloth Covers). It has been compiled by the librarian, Miss Aslin, who has not merely listed a number of books, but has also added interesting notes on them and their authors. This edition contains two new sections, one including manuscripts and farm account books, the other listing the collection of prints of farm animals which the library possesses.

The catalogue only covers the period 1471-1840, as the books published since the latter date are too numerous to be included in one volume. The period selected is well chosen, for the dates marking its limits are milestones in the history of agriculture. In 1471 the first printed book on agriculture appeared, namely, the Augsburg edition of Petrus Crescentius' "Epistola in librorum comodorum ruralium", and in 1840 Liebig's "Organic Chemistry in its Application to Agriculture and Physiology" was published, thus definitely marking the end of the purely empirical

period of agriculture and the beginning of the application of scientific principles. The catalogue is excellently arranged for the use of students: an alphabetical list of English authors and translations is followed by a similar list of foreign authors and translations, and these latter are also catalogued under the headings of their respective countries. This publication is invaluable not only for students of agricultural history and bibliography, but also for students of horticultural history, since there are numerous references to the early herbals and to treatises on gardening, particularly on the cultivation and propagation of fruit trees.

### Springtime the Safest Time

UNDER this title the March issue of the *Statistical Bulletin*, which in spite of its austere title is remarkable for the sprightly character of its contents, illustrates the fact that life and limb are safer in the spring than at any other time of the year by the statement that, if all the year were April, the annual toll of fatal accidents in the United States would be 12,500 fewer than it has been in recent years. During the period 1934-37, the average number of deaths daily from accidents, particularly burns, falls and motor accidents in the United States was 285, whereas during the same years the daily average for April was 251, as compared with July, the worst month, when the average daily toll was 367. The deaths in March and May averaged only a few more daily than in April. In conclusion, the writer recommends that the spring should be the season not only for cleaning the house and making necessary repairs, but also for clearing out "the junk of the mind—the complacency of fixed daily habits which are fraught with hazards".

### Earthquakes Registered at Hong-Kong

DURING January, twenty-two earthquakes were registered at the Royal Observatory, Hong-Kong, the greatest number on any one day being four on January 6. The greatest shock recorded was probably that of January 17 at 1h. 21m. 25s. G.M.T., which exhibited a full complement of phases, and showed maximum amplitudes of 10.4 mm. on the north-south component and 8.7 mm. on the east-west component of the Milne-Shaw seismographs. The difference in arrival time of the primary and secondary waves for this earthquake was 5 min. 17 sec., which, according to Jeffreys' latest tables (*Mon. Not. Roy. Astro. Soc.*, Geophysical Supplement, 1939, June), on the assumption of a normal depth of focus gives an epicentral distance of just over 33° from Hong-Kong.

### Recent Earthquakes

THE United States Coast and Geodetic Survey in co-operation with Science Service and the Jesuit Seismological Association has determined the epicentres of the earthquakes of June 3 and 5. On the basis of reports from sixteen stations, the provisional epicentre of the earthquake of June 3 was lat. 25° N., long. 110° W., which is in the Gulf of California to the east of the island of San José. On the basis of

reports from twenty seismological stations, the epicentre of the earthquake of June 5 was lat. 68° N., long. 138° W. This is in the Richardson range of mountains in the extreme north-west of Canada. Both areas are susceptible to earthquake shocks, having experienced them in the past, and both the earthquakes were comparatively large. The first was registered at Kew on June 3 at 18h. 17m. 43s. G.M.T., and the second on June 5 at 11h. 10m. 59s. G.M.T. The second was the larger, having a maximum ground amplitude of 43  $\mu$  at Kew. Further moderately large earthquakes were registered at Kew on June 17, 18, and 22, also on July 1 and 6. Information is awaited from other observatories before details of these shocks can be given.

### Leverhulme Research Fellowships for 1940

THE trustees of the Leverhulme research fellowships have made awards tenable for varying periods up to two years, for research in the subjects indicated, to the following, among others: Prof. J. R. Bellerby, formerly Brunner professor of economic science, University of Liverpool, post-War economic reconstruction; Dr. R. M. Davies, lecturer in physics, University College, Aberystwyth, experimental investigations on turbulent flow in an air tunnel (renewal of present fellowship); Dr. A. G. Gaydon, Radiation Gas Research Fellow, Imperial College, London, a spectroscopic study of combustion processes in flames and explosions; Dr. N. A. V. Piercy, reader in aeronautics, University of London, mathematical theory of wing sections; W. H. Warburton, Fircroft College, Bournville, a survey of the North Staffordshire pottery industry.

### Announcements

MR. J. C. CROCKER has been appointed head of the Department of Chemistry, Chelsea Polytechnic, London, following the retirement on August 31 next of Mr. C. Dorée, who has held the post during the last sixteen years. Mr. Crocker has been senior lecturer on the staff of the Department of Chemistry for many years, during which time, in addition to taking his share in the preparation of a large number of students for their first degree in the University, he has done highly successful work in the training and direction of research students of the Polytechnic for the higher degree in chemistry of the University of London.

IT is announced by the Institution of Naval Architects that the Institution's Library has now been completed by the erection of the memorial to the late Sir Archibald Denny. The Library is situated at the offices of the Institution at 10 Upper Belgrave Street, London, S.W.1.

DR. FRED C. KOCH, professor of physiological chemistry at the University of Chicago and chairman of the Department of Biochemistry, has been appointed Frank P. Hixon distinguished service professor of chemistry in succession to Dr. Anton J. Carison, who will retire at the end of this year.