

5/2 Developments in Agricultural Machinery

At the fourth annual inspection by the Agricultural Machinery Development Board held at the National Institute of Agricultural Engineering, Askham Bryan, on October 2, a number of interesting demonstrations were arranged to illustrate the work in progress at the Institute. The new sugar beet harvester on view incorporated several improvements on the model shown last year, notably the 'topper-picker' and 'sweeping wheel' which had undergone successful trials late in the previous season. The beet is topped while still in the ground, and beet and tops are delivered into separate windrows. No elevator chains or rollers are used, thus considerably reducing the wear from soil abrasion. Work in progress for the production of a simple machine for assisting in the harvesting of a variety of root crops such as swedes, mangolds, carrots or potatoes was also demonstrated, while the provision of an efficient potato digger suitable for the small grower was a further proposition undergoing investigation. The main exhibit in the plough section was a mounted one-way 3-furrow plough designed and built at the Institute. This 'reversible' type requires less skill in operation, leaves a level field without ridges or open furrows, and when direct-mounted should effect considerable saving in time and fuel. Combine harvesters have introduced problems of handling, drying and storing grain in bulk, and much research work at the Institute has been devoted to their solution. Among the range of machinery shown for use in conjunction with a small combine, were installations for the drying of grain by ventilation with slightly heated air during storage, and a modified form of the automatic drier that was a feature of the exhibit of last year.

5/3 Additions to the Irish Flora, 1939-45

SINCE the publication by Lloyd Praeger of "Irish Topographical Botany" in 1901, there have been seven supplementary papers which have kept our knowledge of the distribution of higher plants in Ireland up to date; the eighth of these (*Proc. Roy. Irish Acad.*, 51 B, (3), 27; 1946) is, as Dr. Praeger says, probably the last which will be published under his own name. Nevertheless, the number of records bearing a sign indicating that the author himself had seen either a plant in its locality or a specimen from there, is a remarkable tribute to the energy and capability of a botanist who has passed his eightieth year. The present paper contains first records for the forty vice-counties together with extensions and diminutions in the areas of interesting species. Unlike earlier lists, 'introduced' species are included. Of especial interest are the remarks concerning the North American *Myriophyllum alterniflorum* var. *americanum* and the South American *Margyricarpus setosus*, while the known ranges of such species as *Erica vagans*, *Sisyrinchium angustifolium*, *Naias flexilis*, *Eriocaulon septangulare* and several others show interesting extensions. The difficult species of *Allium* are elucidated, and the nomenclature of those species of *Hieracium* and *Euphrasia* which occur in Ireland are revised according to the schemes of Pugsley. The paper is concerned, too, with suggestions as to areas in which certain species and hybrids should be sought, indicating that the author, although a veteran, is still alive to future possibilities. This is shown, too, by his continued emphasis on the necessity for a biological survey by geologists, botanists and zoologists

of the extremely interesting Lough Neagh, where he is convinced that such a team would reap a rich harvest.

The Indian Forest Research Institute 7/1

THE annual report of the Forest Research Institute, Dehra Dun, for 1942-43 increasingly shows how the work continued to be interrupted by the War and its demands (*For. Res. Inst. Public.*, Vasant Press, Dehra Dun, 1945). The report, it is of interest to mention, is printed on paper made in the Paper Pulp Section of the Forest Research Institute from saplings of *Pinus longifolia* from forests not so very far distant. The first chapter of the report summarizes the work of the different branches, the remaining chapters giving the reports of the year's work by each branch. Most of the branches had to suspend all their ordinary work to deal with urgent demands of the Fighting and Civil Forces, the exceptions being botany and silviculture, though the rubber scarcity and search for supplies provided work for both of them. It is a curious fact that the individual 'branches' of a research institute acquire the habit of working in water-tight compartments. Dehra Dun was no exception. The president, Sir Herbert Howard, writer of this report, deplores this fact of the past and says that the War has forced co-operation upon the branches and sections, with valuable results, which it may be hoped will be maintained to the benefit of the Institute. Where all branches have been more or less closely engaged upon war-time research, reference to the report must be made for details.

It is remarkable that the so-called minor forest products of India have never received their recognition in the Institute as a separate branch with an officer in charge. Their importance and effect on India and its commerce can still be only suspected. For example, during the year 1942-43, among other things, a source of pectin from tamarind seeds which had previously been wasted was developed. This pectin gives excellent material for jellies, and its further development has given a gum of the tragacanth type which is the only material at present available for creaming rubber latex, for which it is entirely suitable. It has also been successful as a sizing material for textiles. The commercial possibilities of this are said to be very great. Suitable species for producer gas, and an investigation into various species as sources of rubber production has also occupied the activities of the branch.

4/6 Archæology of the Illinois River Valley

A REPORT on work done under the auspices of the University of Illinois in 1928, deals with the archæology of a small part of that State (*Trans. Amer. Phil. Soc.*, 32, Part 1: "Contributions to the Archæology of the Illinois River Valley"). By Frank C. Baker, James B. Griffin, Richard G. Morgan, Georg K. Neumann and Jay L. B. Taylor. Edited by James B. Griffin and Richard G. Morgan. Pp. iv+208+68 plates. Philadelphia: American Philosophical Society, 1941). Excavations were made in a number of mound-groups, and a village site was reconnoitred. Most of the mounds belong to the comparatively well-known Hopewell mound-building culture, a single mound-group belongs to a later phase, the Middle Mississippi, and the village site and one mound are ascribed to the Woodland-culture pattern, probably later still. The second part of the

report is devoted to a study of the fauna associated with the sites, and the third to some skulls from the Woodland-culture mound. The value of the report lies in supplementing our information about the distribution of the cultures found, and is enhanced by a map and classified list of archaeological sites in Illinois at the beginning. It would have been easier to follow had the descriptions of sites been arranged in some intelligible kind of order, segregating those of various cultures. The introduction says that it was impossible to include the maps and diagrams of the sites; the inclusion of at least some of them would undoubtedly have been an advantage.

Mineral-insulated Metal-sheathed Conductors

IN a recently published paper (*J. Inst. Elec. Eng.*, 93, Part 2, No. 34, Aug. 1946), Messrs. F. W. Tomlinson and H. W. Wright discuss the development and uses of metal-sheathed conductors employing as insulating medium highly compressed magnesium oxide powder. In consequence of the high-temperature stability and the good insulating properties of this material, these conductors have found wide application as electrical heating elements in radiant boiler-plates and as power supply cables in circumstances where the avoidance of fire-risk is of special importance, or where the ambient temperature or atmospheric conditions are too severe for other types of electric cable. The low dielectric loss exhibited by magnesium oxide at very high frequencies, combined with the other advantageous characteristics mentioned, has also enabled specially designed cables to be used for certain important radar purposes.

Status of Translations and Translators

IN his pamphlet "On Translations", reprinted from *Life and Letters*, Sir Stanley Unwin directs attention to some of the problems arising in translation from one language to another, and to inadequacies and inaccuracies still encountered, although during the past forty years the quality of translations into English and the status of translators have steadily improved (London: Allen and Unwin, Ltd. Pp. 8. 6d. net). Sir Stanley emphasizes that first and foremost the translator should be adequately paid, and payment for translation should be a first charge, taking precedence over the author's remuneration. The translator's name should always be given, provided it is his (or her) exclusive work, and it should be a universal practice to print, on the back of the title-page of any translation, the title of the original work. The best remedy for mistranslation and for deliberate tampering with the text is informed criticism; bad translations should be denounced. Authors should help by giving preference to publishers who take pride in the quality of their translations and maintain a high standard; but while the publication of translations is in general more speculative than the issue of original work, Sir Stanley does not agree that the publication of translations should be financed by governments. If, however, for commercial reasons any work of outstanding importance had remained untranslated for, say, five years, governments would be well advised to offer to bear the cost of translation, if a publisher was willing in that event to produce the work at his own risk and expense. The pamphlet also includes some notes on "Our Universal Language", which stress the importance of the new demand for British books.

Museums of To-morrow

DR. D. A. ALLAN's presidential address on the occasion of the Museums Association's annual conference at Brighton this year is reported in full in the *Museums Journal* of August. Under the title, "Museums—*Quatis Mutandis*", Dr. Allan advocates more teaching in the museum and less congestion of exhibits, and he is of the opinion that museums should not strive to increase already immense collections. "To perform its function adequately," he says, "each museum, large or small, must adopt a plan and work it out. It is not enough merely to tidy-up a museum; it must be put into working order; it must show less and teach more." He also appeals for the establishment of special museums to demonstrate the history and applications of British mechanical invention and engineering, mining and agriculture, and looks for the further development of folk museums so that there may be one to each distinctive region of the British Isles.

Economics of International Trade

IN Pamphlet No. 7, "International Trade", in the "Looking Forward" series issued by the Royal Institute of International Affairs, G. A. Duncan points out first that international trade between two countries really means a multitude of independent transactions linked by nothing more serious than the accident that their participants happen to live in two politically defined areas; hence, while all the problems, spurious as well as real, would still be there if the world was politically unified, they would not be linked up with political units and political power. He then attempts to set out the nature of the principal questions that arise on the assumption that one State, one supreme political government, embraces the whole earth. The complications introduced by the existence of sixty-odd sovereign and independent States are then considered, and the conditions precedent to the revival and growth of international trade in the post-war world are indicated. International trade, Mr. Duncan argues, consists of an economic substratum overlaid by a political scum. The economic reality is that the real welfare of the world's human population is a function of the optimum use of its diversified resources—mineral, vegetable, animal and human—under contemporary conditions of technical knowledge.

The optimum pattern, according to Mr. Duncan, is not a matter of merely technical comparison, but of economic balancing, taking into account differing valuations of resources in differing areas, and the correct distribution can only be determined by the empirical method of competition, which continually presents the dilemma of choice between immediate, localized and vocal loss, and more distant, diffused and inarticulate gain. The competitive process can only yield its dividends when it is allowed to proceed so far as possible on economic grounds. The political scum consists of the arbitrary importance attached to trade crossing political frontiers and to the significance of partial calculations about its component elements; the tendency to think of international trade as trade between definable political entities instead of an arithmetical accident; and the invasion of economic problems by notions of political power and prestige. The problem for economic statesmanship in the next few years, he concludes, is that of working out by common agreement a form and extent of political impositions upon international