

should relate to this subject. There are also investigations in root development, biennial bearing, double grafting, non-setting of blossom, pruning, thinning, manuring, variety trials, fruit breeding, and many other problems. Extensive research in plant physiology, biochemistry, plant pathology and entomology is carried out in relation to the outdoor investigations. A noticeable feature of the preliminary research reports is the evidence of strong correlation between all branches of the research station. The influence of stock on scion, for example, is being investigated from different angles by the pomologists, the physiologists and the biochemists. Section 4 is a collection of articles which are intended to portray the results of the Station's scientific work in such a way that they may be used by practical fruit-growers. This is a very necessary activity of any research institution, and it is gratifying to note its increasing volume from year to year in East Malling's annual reports.

#### Hannah Dairy Research Institute

THE fifth annual report of the Hannah Dairy Research Institute describes the work being carried out at Kirkhill, Ayr, and its commercial and practical applications. The chairman of the Council of the Institute is Sir Robert S. Rait, principal of the University of Glasgow, who succeeded the late Sir Donald MacAlister. The work of the Institute has received increasingly wide recognition as shown by the requests received for its publications from all over the world. At home, the advice of the Institute is frequently sought in solving various practical dairying problems. Work has been carried out on the relative nutritive value of different proteins for milk production, on methods of eradication of bovine tuberculosis and the means by which the risk of milk-borne disease can be reduced to negligible proportions, and on the production of condensed and evaporated milks and canned cream. It is of interest to note that the basis of the Institute's experimental eradication scheme of bovine tuberculosis, namely, the provision of free tuberculin-testing and free advice to owners of dairy herds, has been recommended by the Committee on Cattle Diseases, Economic Advisory Council. The results of the experimental scheme have clearly demonstrated the feasibility of effecting a marked reduction in the incidence of tuberculosis amongst dairy cattle. The Institute appeals for funds to wipe out the present indebtedness and to provide an endowment fund which will produce an income of £2,000 a year.

#### Research on Preservation of Wood

VOL. 4 of the *Journal of the British Wood Preserving Association* has recently appeared (Printed for the Association, 166, Piccadilly, London, W.1. 1934). Sir John Stirling Maxwell has been re-elected chairman. The work of the Association has been maintained at the high standard set when it was founded, and the *Journal* records a number of interesting papers and discussions during the year dealt with. In view of the fact that bungalows and houses constructed entirely of Empire timbers are now to be seen under construction in Great Britain, Mr. O'Hea's

paper on timber buildings proved of considerable interest. Mr. O'Hea dealt with the three distinctive types of timber buildings in the three main parts of the world where they are commonplace, namely, the North American continent, Scandinavia and Russia, and then discussed the timber building in England. Other papers dealt with wood preservation in the service of the Post Office, the use of treated timber in railway stock construction and an excellent paper on the research institutes and forest products laboratories in which work on the preservation of timber is being carried out.

#### Mining in South Australia

WE have received from the South Australian Department of Mines a review of mining in that country for the half year ending December 31, 1933 (Adelaide: Government Printer, 1934). There is little of permanent interest about this review, but it states that the various Mining Acts have now been consolidated, a new Act to regulate mining on private lands has been passed, and further that copies of the regulations under the Mining Acts were gazetted on March 22, 1934, and can be obtained from the Department of Mines; although the publication under review has condensed some of the more important regulations, those interested are advised to refer to the full text of the regulations. It is stated that the most interesting development is the increase in the production of gold, which is more than double that of 1932, this increased output being of the greater importance on account of the greatly increased value of the gold produced. It appears from the statistics that the total value of mineral produced in 1933 shows a marked increase over the production for 1932.

#### Greenkeeping Research

THE Board of Greenkeeping Research has recently issued its Report for 1933. Most of the Board's activities are centred round its Research Station at St. Ives, Bingley, Yorks, where experiments on the qualities of various lawn grasses are in progress. During 1933, plots of *Poa annua*, *Agrostis* and *Festuca rubra* have received special investigation in order to determine their suitability for golf green purposes. Manurial experiments have been correlated with yield data. Various compounds are being tried as worm eradicators, whilst the success of the St. Ives leather jacket exterminator (a standardised emulsion of Jeyes' fluid and orthodichlorobenzene) must be very gratifying to its originators. The establishment of greens by means of vegetative propagation is receiving considerable attention, and the aeration of turf is a subject for further experiment. Advisory work is growing, and the financial statement shows a small surplus. Attention is directed to the *Journal* of the Board, which is published twice a year and may be obtained from the Station.

#### Our Nearest Neighbour

WHEN the star Proxima Centauri was discovered by Innes to have a parallax of 0.88", he realised that

this value implied that it is the closest star to the solar system, and gave the star its present name. The nearest competitor is  $\alpha$  Centauri, which has a parallax of  $0.76''$ . Subsequent measurements, however, have failed to confirm Innes' value of the parallax of Proxima, and in Schlesinger's Catalogue a weighted mean value of  $0.802'' \pm 0.050''$  is given. This still makes Proxima nearer to us than  $\alpha$  Centauri; but the parallax has recently been determined both at the Yale Observatory at Johannesburg and at the Royal Observatory at the Cape of Good Hope, the results being  $0.783''$  and  $0.758''$  respectively. The name given to Proxima is accordingly seen to be in grave danger of losing its justification, and it appears possible that  $\alpha$  Centauri is after all the closest neighbour of the solar system in space.

#### Fireball of October 11, 1934

At 10 h. 29 m. p.m. of October 11 a very brilliant meteor appeared over eastern Yorkshire. Mr. A. King, 53 Victoria Road, Ashby, Scunthorpe, Lincolnshire, received nineteen observations, ranging in place from Durham in the north to Chipping Campden in the south-west and Brentwood in the south-east. The total light of the fireball, in Yorkshire and north Lincolnshire, was probably greater than that of the full moon. From the best observations, the following real path is found: Began, 94 miles over 3 miles E.S.E. of East Malton, Yorks.; mean deviation 2.0 miles. Ended, 50.8 miles over 5 miles N.E. of Brigg, Lincs; mean deviation, 0.8 mile. Earth-point, near Boston. Length of visible track, 58 miles; speed, 21 m.p.sec. Radiant,  $\alpha$ ,  $252.3^\circ$ ;  $\delta$ ,  $+75.8^\circ$ , in Ursa Minor. The speed, allowing for air resistance, was of the parabolic order; hence, corrections for zenith attraction and diurnal aberration were applied to the observed radiant, and an orbit computed, on the assumption of parabolic velocity. The corrected radiant was  $249.6^\circ + 74.9^\circ$ , and the orbit:  $\iota$ ,  $56.3^\circ$ ;  $\pi$ ,  $15.6^\circ$ ;  $\Omega$ ,  $197.9^\circ$ ;  $q$ , 0.998. The meteor left a streak along its track, extending from 77 miles high to 56 miles over 2 miles S.S.E. of Barton-on-Humber. The upper portion quickly vanished, and the part from 69 miles over  $4\frac{1}{2}$  miles N.E. of South Cave, Yorks, to end as given above (mean deviations, from three observations, respectively 1.8 m. and 1.9 m.), drifted in an east-north-east direction, taking up, in 3 minutes, a position extending in a curved line from 73 miles (dev. 2.0 m.) over  $3\frac{1}{2}$  miles, roughly east of Beverley, to 58 miles (dev. 3.0 m.) over West Hull, the forward point of the bend (one third way from the lower end) being above 1 mile N.W. of Sutton, Hull; height, 64 miles (dev. 3.4 m.). The corresponding rates of drift were thus 168, 156 and 186 miles per hour.

#### Grants for Metallurgical Research

THE Council of the Iron and Steel Institute awards annually a limited number of grants, each not exceeding £100, from the Andrew Carnegie Research Fund for metallurgical research work. The object of the scheme is to enable students of academic or industrial experience to conduct researches on

problems of practical and scientific importance relating to the metallurgy of iron and steel and allied subjects. Candidates, who must be less than thirty-five years of age, must apply before the end of next January on a special form to be obtained from the Secretary of the Institute.

#### Aviation and Public Health

THE Third International Congress of Sanitary Aviation will be held at Brussels on June 11-17 at the time of the Universal International Exhibition. The subjects for discussion at the Congress, which has been organised by the Aero-Club of Belgium, of which Dr. Charles Sillevaerts is president, are as follows: utilisation of private and commercial aeroplanes for sanitary objects; collaboration of public services and private organisations for the utilisation of sanitary aviation in peace time; organisation and working of first aid in public aerial transport; and help afforded by aviation in times of calamity. Moscow, Leningrad, Kiev, Odessa, Kharkov, Minsk, Baku, Sverdlovsk, Irkutsk and Khabarovsk have recently been provided with aeroplanes intended to convey first aid to patients in out of the way districts which have no doctors or have been rendered inaccessible by floods, storms and the like. The aeroplanes can be summoned by wireless, telegraph or telephone.

#### Leipzig International Industries Fair

THE Leipzig Spring Fair 1935 will be open on March 3-10. The Samples Fair closes at noon on March 9, but the Engineering and Building Fair will be open until March 10. The Textile Fair closes on the evening of March 6. The "Bugra" (Book Trades) Machine Fair closes at noon on March 9. The section representing the optical, photographic and cinema industries, which has hitherto been housed in the Gymnasium at the Frankfurter Tor, is being included in the Engineering and Building Fair, and its exhibits will be arranged in Hall 12 (Dome Hall). This will make the Leipzig Fair more self-contained, a fact which should be appreciated. It is announced that the Machine Tool Hall (Hall 9) has been booked up completely, and further exhibits have overflowed into Hall 11. In the Electrotechnical Hall, too, all space available has been booked. General mechanical engineering will be well represented, there being large increases in the department of Diesel engines and foundry machinery. Manufacturers of gas appliances are arranging a special exhibition on a large scale in the Building Trades Hall.

#### National Academy of Medicine in Spain

THE second centenary of the foundation of the National Academy of Medicine was celebrated at Madrid on December 10 by an exhibition of books and documents dating from the fifteenth century, including treatises on plague and bloodletting and commentaries on Hippocrates, and by an address on the history of the Academy by the librarian, Dr. Goyanes.