

Farming in the U.S.S.R.

FARMING in Soviet Russia is the title of a recent interesting article by Sir John Russell (*J. Min. Agric.*, 44, 1063). The natural conditions of this vast territory vary from arctic to sub-tropical, and the agricultural products are in consequence correspondingly wide, ranging from rye, flax and potatoes in the north, through wheat, sunflower and sugar beet in the temperate zones, to oranges and tea in the sub-tropical regions. The preponderance of grain cultivation and the small production of animal products is the chief general feature of Russian agriculture, a characteristic shared by other non-tropical continental regions such as Canada, but the distinguishing mark of the Russian system is that it is planned by a central authority, and the production of certain quantities of the various products are allocated in turn to the constituent republics, regions and collective farms by their appropriate managements. There are two types of farm, namely, the State and the collective farm. The former are managed by State officials, and the employees receive a definite wage in money. The collective farm, on the other hand, is a new departure in agricultural organization. The entire land, live stock and implements are pooled and the whole is worked as a single unit under a committee of management. Workers are allotted certain duties and their achievement is reckoned in terms of 'labour days', a standard day's labour of ploughing or milking, for example, being assessed by the committee. After the Government's claim on the produce has been fulfilled, the remainder is divided between the workers on a basis of their 'labour days', that is, their wages are in kind only. Some 98 per cent of the sown area is now in collective farms, and the peasants appear more contented than previously, so quite apart from political and social issues, the progress of this new system will be closely followed by all interested in agriculture.

Fuels for Heating and Hot-water Supply

MR. H. L. PIRIE, in a paper presented at a joint meeting of the Institute of Fuel and the Institute of Heating and Ventilating Engineers on December 1, discussed the suitability of British coal and its derivatives for heating and hot-water supply. Selection of fuel must be dependent entirely on the purpose in view, available supplies and apparatus. Gas and electricity may be regarded as coal derivatives and present certain advantages over both coal and coke for specific requirements. Nevertheless, fuel and appliances must be considered together if efficient performance is expected. Open fires, continuously burning stoves, hot-water boilers, central heating boilers and steam boilers all require special types of fuel. Mr. I. Lubbock, at the same meeting, assessed the advantages of fuel oil for heating and hot-water supply. Summarily these are: comparatively small space occupied by plant and fuel, rapid and easy filling of storage tanks, which, by suitable piping may serve two or more widely separated boiler houses, cleanliness, lack of smoke, flexibility of supply to meet the needs of varying atmospheric conditions, elimination of standby losses, automatic control, and

thermal efficiency. Admittedly, gas and electricity may possess in many cases similar advantages, but they should all be taken into account in fuel selection. Fuel oil is moreover suitable for widely different types of installation. For example, it is now extensively used in office buildings, cinemas and theatres, churches, factories, hotels, trains, garages, flats, and houses, and the types of boiler which it is possible to install in these places are of necessity highly divergent. It is not claimed that fuel oil is better in every case than any other fuel, but it is claimed that oil as a fuel for central heating and hot water should be considered on its own merits in relation to other fuels.

Archæology in the University of London

CHANGES of no little importance for archæological studies are announced in the examination arrangements of the University of London. In and after 1939 no examination for the degree of B.A. in honours in archæology will be held; but archæological subjects will be added as optional or special subjects in the B.A. honours examination in classics, Greek, Latin, Arabic, Chinese, Hebrew, Indo-Aryan, Persian and history. Further, the subject of "Prehistory of Western Europe" is added to the list of subjects which may be taken at the B.A. (General) examination. In view of the very marked progress and development in method of prehistoric studies relating to western Europe in recent years the inclusion of this subject in the general arts curriculum is especially noteworthy, marking an advance in status among academic studies. Similarly at Oxford, by a decree of Congregation, geography and anthropology jointly have been elevated to the dignity of a 'faculty'.

University of London: Progress since 1900

IN his report on the work of the University during the year 1937-38, Dr. H. L. Eason, the recently appointed principal, briefly reviews the progress that it has made since it became a teaching university in 1900 (University of London. Report of the Principal on the Work of the University during the Year 1937-38. Pp. 13. London: University of London). The number of candidates for examination increased sevenfold to 46,000, their fees tenfold to £188,000, the expenditure of the University, exclusive of grants dispensed to schools, institutions and departmental institutes, tenfold to £247,000. There are now in the schools and institutions of the University 240 professors, 160 readers and 945 recognized teachers; the roll of internal students reading for degrees and diplomas comprises 13,730 names, whilst the registered external students number 10,771. Of the 4,863 candidates for degrees in 1937, 3,074 were internal and 1,789 external. The principal recalls words used by Lord Haldane in 1920: "It ought to be the chief centre of learning in the entire Empire, . . . Here ought to be concentrated the highest talent, the highest level in that passion for excellence of which I have spoken, the highest atmosphere, such as only can come in a great capital at the heart of a great country." More and more, says the Principal, does the University approach this ideal. Among the

notable events of the past session was the inauguration of a Research Fund to which the University Court resolved to appropriate not more than £5,000 a year, from which grants are to be made for specific projects for research.

Research in Tropical Medicine

THE Medical Research Council is offering up to three junior fellowships immediately, for award to qualified medical men wishing to receive training with a view to careers in research work in tropical medicine. The fellowships will be tenable for three years. The first year will be spent at a school of tropical medicine; the second in doing research in the same or some other institution at home; and the third largely in work under direction at some centre in the tropics. The stipend will be at the rates of £300, £400 and £500 per annum in the successive years, with an additional allowance during service abroad and necessary expenses. In three years' time, at least one senior fellowship will be available for candidates who have held the junior fellowships. This will be awarded for a further period of three years, carrying stipend at the rate of £600-£750 per annum, with an additional allowance during service abroad and expenses. The time will be spent mainly in research work in the tropics. The Council is also prepared to consider immediate applications for senior fellowships from candidates who have had adequate experience in research work, whether already specially trained in tropical medicine or not. The Council further intends to establish in due course, as suitable investigators become available as the result of the fellowship scheme, permanent and pensionable appointments for research work in tropical medicine, including senior posts. Further information can be obtained from the Secretary, Tropical Medical Research Committee, 38 Old Queen Street, London, S.W.1.

Rich Display of the Aquarids

MOHAMMED A. R. KHAN, Begumpet, Deccan, carried out observations of the η Aquarids on May 1-5, the total time of observation being 3^h 45^m. During this period he saw 37 Aquarids and 32 sporadic meteors. The Aquarids are described as moving with long, white, evanescent trains, and the maximum display took place on May 2. In 1935 the maximum occurred on May 5 and was not so rich as this year. An interesting and important note is added by the observer. In some cases, not only with the Aquarids, but also with the sporadic meteors, the meteors grew considerably brighter towards the end of their course. One Aquarid, starting with a scarcely visible nucleus, developed a long voluminous train, glowing with a beautiful apple-green luminescence, towards the end of its flight. A sporadic meteor which was moving rather slowly developed a bright coma of reddish-green colour, attaining a magnitude 3 at maximum. These facts are important in connexion with a photograph of a meteor shown by Mr. E. H. Collinson at the meeting of the British Astronomical Association on March 30. It was suggested by some members that the bright portion of the photograph was the beginning of the path, but those who were experienced

in meteor work did not corroborate this view. The observations from Begumpet confirm the usually accepted fact—that meteors generally brighten up towards the end of their flight.

The Night Sky in June

THE summer solstice on June 22 brings the shortest night lasting, in the northern latitude of Greenwich, less than 7½ hours, according to the sun's setting and rising, and a little more than 3 hours if twilight (nautical) be taken into account. The moon is full on June 12^d 23·8^h and new on June 27^d 21·2^h U.T. A lunar conjunction takes place with Jupiter on June 19^d 3^h: with Saturn on June 22^d 15^h and with Venus on June 30^d 14^h. Venus, a bright star in the evening western sky, sets at about 22½^h, preceded by Mars. Jupiter rises before 0^h after June 10; its present stellar magnitude is about -2·1, as compared with -3·4 for Venus. Saturn is reappearing in the skies as a morning star, and in the middle of the month rises after 1^h. About 21^h in mid-June, Arcturus stands out conspicuously on the southern meridian. Lower in the south at this time will be found Spica just west of the meridian and Antares on the east. Antares, with a radius 450 times that of the sun's, has an average mean density of only 1/3,000 that of air at N.T.P. From a radiant not far from Antares come the slow-moving fireballs known as Scorpiids. Two interesting double stars in Bootes may be noted— ϵ Bootis, having the euphonious name of *Pulcherrima*, is a beautiful double the components of which, separated by 2½", are a 3rd magnitude yellow star and a blue star of magnitude 6½. ξ Bootis, with a period of about 160 years and an orbit of great eccentricity, comprises a yellow star (mag. 4·7) and a purple star (mag. 6·6) separated by about 4½". α Herculis provides another finely coloured pair—a mag. 3·0 orange star and a blue green mag. 6·1 also separated by 4½". Between η and ζ Herculis may be seen a nebulous spot of light which is the well-known globular cluster in Hercules. The stellar population of this spherical system is not less than 50,000 stars; these occupy a volume of space (500 light years across) which would be able to contain the greater number of our naked-eye stars.

Announcements

THE degree of doctor *honoris causa* has been conferred by the University of Athens on Sir James Frazer in recognition of his distinguished contributions to Greek classical learning.

SIR FREDERICK HOBDAY, formerly principal and dean of the Royal Veterinary College, will give a course of six lectures entitled "A Comparison of Diseases in Animals and Men" at St. George's Hospital Medical School, London, at 5 p.m. on Mondays from May 30. They will be open to medical and veterinary practitioners and students without fee.

THE following Royal Society lectures have recently been announced: June 16, Bakerian Lecture by Prof. C. K. Ingold, professor of chemistry in the University of London, on "The Structure of Benzene"; June 30, Croonian Lecture by Prof. A. N.