

been an increasing appreciation of the value of the progeny test. To assist breeders in this matter, the Hertfordshire Institute of Agriculture held on November 20 an auction sale, the catalogue of which is before us, of a number of young bulls, sons of "proven sires": this term connotes a bull whose unselected daughters are considered to have given a satisfactory yield. This enterprise is to be commended, though it is legitimate to wonder whether, in view of recent research, too much emphasis is not being laid upon the paternal grandsire of the heifers which the purchasers of these young bulls hope to breed. Greater value would be attached to the sale if daughters of proven sires were also on offer. Inevitably it has not been found possible to set a high standard, and critics of the catalogue should lay less emphasis on the fact that the average yields of the daughters of these seven proven sires have in no case reached 1,000 gallons, and rather be content with the fact that there has been made available an array of not only interesting but also reliable facts. There would, however, appear to be no excuse for describing as a proven sire a bull whose daughters' average yield was only 800 gallons and some 15 per cent less than that of their dams. Some officially recorded pigs were also sold. While this was not the first sale of this nature, the venture is likewise to be commended since it demonstrates a resolve on the part of some breeders to work, not by eye alone, but by scientific methods based principally on the rate of live-weight increase and carcass measurement. In view of the reorganisation of the pig industry in Great Britain, the movement is a timely one.

The Smithfield Club

THE effect of music upon fatted cattle, sheep and pigs will again be tried at the London Smithfield Club show in the Royal Agricultural Hall, Islington, on December 4-8 next. Milch cows have given a greater volume of milk under the influence of soothing music. This year, scientific investigators in animal foods and nutrition at Smithfield Show are to see whether beasts, which usually lose weight when appearing in fat stock exhibitions, cannot be made to maintain their rate of daily growth, when band music produced from gramophones and loudspeakers is played to keep them from becoming upset by the mobbing received from visitors. The King has entered 29 head of fat cattle, sheep and pigs, and the Prince of Wales, the Duke of Rutland, the Countess of Lonsdale, Lady Loder, Lord Danesbury and Lord Derby will also submit stock before the judges.

Annual Report of the Meteorological Office

THE annual report of the Director of the Meteorological Office to the Air Council for the year ended March 31, 1933, deals with the seventy-eighth year of the Meteorological Office. Details of the work of the various branches of the Office show that requests for meteorological information have again increased substantially in number over those received in the preceding year. The reorganised forecast branch at Adastral House, Kingsway, alone dealt

with nearly sixteen thousand, and the numerous local centres of the aviation branch, with more than thirty-seven thousand, without counting weather reports passed to aircraft in flight. The British climatology division disposed of more than two thousand general or scientific inquiries for particulars of past weather, many of which were required for legal purposes. The report states that the year has been one of consolidation of the numerous changes and developments of the years since the War, and that the figures quoted illustrate the general appreciation shown of the increased facilities for the provision of meteorological information that have resulted therefrom. The advancement of meteorological knowledge by research has not been neglected as a result of attention to the immediate needs of the public, a number of special investigations being carried out, for example, at Kew; the importance of the work of the expedition to Fort Rae, North West Territories, Canada, in connexion with the programme of the Second International Polar Year, has led to the inclusion of a special section giving an account of that work. This shows that success has been achieved in maintaining autographic records of the magnetic elements, of atmospheric electricity and of the more ordinary meteorological quantities, as well as in the ambitious scheme of auroral study. Although great doubt had been felt as to the chances of retrieving instruments carried by sounding balloons, several have been recovered with records reaching well into the stratosphere.

Secondary Sections of the British Grid System

NEARLY all the British grid operates at a pressure of 132 kilovolts. Two sections operate at 66 kv. and 33 kv. respectively, and there are a few relatively unimportant sections which operate at smaller pressures. In a paper read to the Institution of Electrical Engineers on November 9, Mr. C. W. Marshall describes the 66 and 33 kv. sections. In the scheme of the Central Electricity Board, there are 221 miles of 66 kv. lines and 1,319 miles of 33 kv. lines. Unlike the main grid, these subsidiary lines are mainly used for transmission purposes. The standard conductor material from which they are made is steel-cored aluminium. The minimum clearance between any line conductor and the earth in still air under maximum temperature conditions (50° C.) is 20 ft. If they have to cross Post Office lines then, whenever possible, the P.O. lines are interrupted and cables substituted for them at the crossing. If this is not possible, a guard is provided under the power lines. In this case the minimum clearance between guard and Post Office lines is 3 ft. and between guard and power lines 4 ft. When the power lines cross a railway, the minimum clearance is 24 ft. above rail level. Lattice steel towers are the standard for all the Board's 66 kv. lines and, with one exception, for all the 33 kv. lines also. During the period of the activities of the Board, the development of cable technique has been very rapid. The first cables were made with solid dielectrics, the single core oil duct type came next, then the three

core oil duct and finally the 'gas pressure' three phase cable. Operating experience is still too scanty to allow definite conclusions to be drawn as to their relative merits. Hitherto they have only been used in situations like central London which preclude the use of overhead lines.

Kaiser Wilhelm Gesellschaft

NEARLY forty pages of parts 21-23 of *Die Naturwissenschaften*, 1933, are devoted to an account of the activities of the Kaiser Wilhelm Gesellschaft during the period April 1932 until March 1933. The financial stringency has been felt during the year just as much as it was last year, and research work has had to be cut down to a minimum in several departments. It has also affected the membership, which has fallen from 829 to 786. At the headquarters—Harnack House—five evening lectures on scientific subjects and five of a popular character have been delivered, and four have been given in other towns of Germany. Many members of the staff have also been invited to address scientific gatherings outside Germany, and several have accepted permanent posts in the United States, Switzerland and Sweden. 230 foreign men of science have during the year put up for short periods at Harnack House, as compared with 242 the previous year, and 190 meetings of other societies have been accommodated as against 212 during the previous year. 445 additions have been made during the year to the library. Information of this general nature is followed by a short account of the work done in each section of the Association and a list of the publications emanating from it.

History of Fever Treatment in London

In an article entitled "Willan and Bateman on Fevers" in the October issue of the *British Journal of Dermatology*, Dr. J. D. Rolleston maintains that Robert Willan (1757-1812), in addition to being the father of British dermatology, was also a pioneer in epidemiology at a time when infectious diseases were more prevalent and severe than at the present day. In addition to his work on vaccination, of which he was a warm advocate, and his observations on scarlet fever and measles, by his work on cutaneous diseases and his reports on diseases in London in 1796-1800, Willan played a prominent part in the establishment of the first fever hospital in London. Apart from the smallpox hospital at King's Cross, which had been in existence since 1746, at the beginning of the nineteenth century, London did not possess a fever hospital of any kind, and it was mainly in consequence of the prevalence of typhus fever at the end of the eighteenth and beginning of the nineteenth centuries that hospitals under the name of 'houses of recovery' were established throughout the country. They were first opened at Chester, Manchester, Liverpool, Norwich, Hull, Dublin, Cork and Waterford, and later, owing to the advocacy of Willan and other distinguished physicians, the example set by the provinces was followed by London. In 1802 the Society for Bettering the Condition of the Poor fitted up in Gray's Inn

Road a private house as a hospital for poor patients, to which Willan was appointed the first physician, and was succeeded two years later by Bateman, who held the post for twelve years.

Need for Flexibility in International Agreements

MR. W. WATKIN DAVIES, in an article on "Justice in International Affairs" published in the *Hibbert Journal*, 31, No. 4, argues that justice in the international sphere, based on treaties and conventions, is not adequate, and the machinery which enforces it is likely to develop into the most abominable tyranny, if it is not supplemented by something else. In a world where changes occur in different countries at different times, it is folly on the part of statesmen to make peace settlements which they declare to be final, without at the same time providing for future prevention of political and economic grievances. Changed circumstances give rise to legitimate national aspirations. Mr. Davies gives examples from past and from contemporary history to show how changes in population render geographical boundaries unsatisfactory. Remedies other than acquisition of new territory, such as increased efficiency in production or colonisation, are of little avail at present because of the prevailing economic nationalism. There remains one way out: for nations sooner or later to take their fate in their own hands and break the law, by resorting to war. If economic and political hostility is to be avoided, flexibility must be introduced into our international system. An institution must be set up—it already exists in a very crude form in the League of Nations—the task of which will be to revise treaties from time to time, and to readjust national boundaries, redistribute economic resources, regulate migration in the interest of the world as a whole, and generally to reconsider every reasonable national aspiration. The way is indicated by Article XIX of the Covenant.

Man and Machine

In the *Quarterly Review* for October 1933, Mr. W. F. Watson contributes an interesting article on "The Machine and its Purpose" in which he combats the view so often taken for granted that machinery involves dull, monotonous work which 'dehumanises' the worker, robs him of interest in his job and crushes individuality. The machine, he admits, continually encroaches on the sphere of certain crafts and changes the form of others, but at the same time it has created new crafts involving a high degree of skill, initiative and individuality, such as that of jig, tool, fixture, mould, die and gauge makers. Passing on to consider the machine operator, he argues that a person who controls a machine with ease, skill and precision is the master of that machine, not its slave. The man who is master of his job, no matter how elementary it be, must of necessity take some interest in it. Moreover, modern industrial investigations such as those of the National Institute of Industrial Psychology have led to an appreciation of the importance of the 'human factor' and have shown how to counteract the effects of monotony.