

Research in Animal Husbandry in India.

THE *Proceedings* of the Animal Research Workers' Conference held in New Delhi in February of the year 1936, which has just been issued is a publication of great interest and brings together the results of research work now in progress in the different provinces in connection with animal diseases, animal nutrition and cattle-breeding. Animal Husbandry in India including Veterinary medicine has long suffered from the lack of appropriate provision for research work and one is certainly gratified to find evidence now of a great and welcome change taking place. The *Proceedings* bear ample testimony to the change that has thus come over, and the papers read and the discussions thereon cover a very wide ground indeed, numbering twenty different subjects in all. To some of these we make a brief reference below.

In the important and at the same time very difficult matter of the establishment and maintenance of pedigree herd-books in India, Bombay is reported to have made a good beginning, the details being explained by the Live-Stock Expert of Bombay. Its success and popularity is shown by the fact that such pedigree cattle fetched from 15 to 20 per cent. more than the unregistered ones in the weekly sales. Only some 2,100 animals have so far been registered and we should have appreciated it if the cost incurred had been given, so that some idea of what the cost of introducing it over large areas may be obtained. Intestinal parasites in sheep and cattle which cause a great deal of havoc in many parts of India, forms the subject of another paper together with the methods of combating the pest. Copper sulphate and Kamala have been found the most efficient remedies and they are recommended for a wider trial. Mineral deficiencies and the diseases due to that cause have been further investigated and the improvement resulting from the addition of half a pound of sterilised bone-meal to the ration is reported to have been striking. The account of the work of the Cattle Farm in Hissar on the improvement of fodder supplies by various methods is of much interest as well as the points elicited in the discussion relating to the increase due to manuring with superphosphates and the use of molasses in the making of silage. Apparently no work has been done on the new A.I.V. process of silage-making. The subject of inoculation against rinderpest in which results of outstanding practical importance have been achieved comes in for further discussion. An interesting contribution is the reference made to the use of dried vaccine now being experimented with in Burma. The discussions bring out considerable differences of opinion about the merits of the different methods in use at present, both in regard to their immunity value and their suitability to oxen and buffaloes alike, which only shows the need for further research even in a subject on which one

was encouraged to believe there was comparative certainty. Animal Nutrition Research in Coimbatore deals with many fundamental points on some of which conclusions different from accepted ones have been arrived at. The protein requirements of working animals, mineral metabolism of young and dairy stock, and the effect of manures on the composition of the grain, especially in the protein make-up, are all of great interest and it is a pity that the author could not attend the Conference and the papers could not therefore be discussed. Bovine tuberculosis is the subject of another paper and the discussions have centred round the selection of an efficient diagnostic agent. Doyle's disease of fowls, bovine surra, congenital blindness in calves, canine diseases, hump sore, and John's disease, are other matters of veterinary interest discussed.

The experience of the Mysore State in the breeding of sheep for wool, chiefly through cross-breeding with imported Merino stock, forms interesting reading together with the report on this work by the Technical Adviser on Wool, Mr. J. Addyman, who inspected the flocks. Blow-fly attack which, it was emphatically stated, was a limiting factor in sheep improvement elsewhere was reported to be non-existent in Mysore. The experiment appears to us to be eminently deserving of being taken up by the Imperial Council of Agricultural Research for being worked as a major subject. The improvement of goats is another important subject discussed. Seeing that the goat is an exceedingly hardy animal, and is both a milk and a meat animal, differing in this latter respect from the cow (at any rate as far as the Hindu population is concerned) one would really like to see an adequately large scheme of improvement launched. We note that no mention at all was made of Angora goats in this connection. In the subject of dairying the Imperial Dairy Expert brings together an elaborate list of problems for research on various aspects of the dairy industry in this country; it strikes us however that even with our present knowledge a good deal more could be done for the milk supply of cities than is the case at present. The Pusa method of pre-milking and udder massaging with the resulting improvement is described in another paper, though the discussions revealed neither enthusiasm nor support for the methods. Having had occasion however to see these animals in their new home in Delhi, one must say the experiment is promising and deserves to be given a wider trial.

The *Proceedings* comprise a very commendable record of work both in volume and variety and what gratifies us more is the policy of "full steam ahead" which unless we are much mistaken, is discernible in its pages.