

College Farm won quite easily the blue and green ribbons. The prize was given more for the appearance than for the yield. The coveted prize of His Excellency the Governor for the best cow at the market was won by Mr. Ranga Raju's cow of Saidapet Kerry strain. This has been purchased for the Farm and it ought to be an acquisition for the College Dairy.

Out of the prizes allotted for the creations of Viswamitra, the Farm halfbred Delhi buffalos won the first and second prizes. Against their habit, dhobies were punctual on that day with their steeds and one of the donkeys trotted away with the only prize offered for that class. There were only two wool bearing sheep out of the half a dozen that appeared on the show ground. The next class was the arch enemy of the Forest. It was evident from the type represented that sufficient encouragement is not given to goat rearing and breeding. Our Farm friend came out with a yellow ribbon.

There were ploughing demonstrations for the ryots to see and magic lantern lectures for the benefit of the hearers and the spectators. At the appointed time, His Excellency the Governor arrived at the dais erected in the show ground for the occasion. Having introduced himself as a farmer and cattle breeder, His Excellency gave some sound and practical suggestions to the cattle owners and distributed the prizes to the winners. His Excellency evinced great interest in all that he saw at the Show.

A. M. Richards.

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### **Pulse Beetles (a review).**

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Bulletin No. 6, Entomological Series, of the Mysore Agricultural Department, by Mr. Kunhikannan, M. A., F. E. S., Senior Assistant Entomologist, Bangalore, treats about the pulse beetles attacking stored pulses. The first part of the Bulletin deals with the

details of life-history and with the habits of one of the principal pulse beetles. The function of the prothoracic plate found in the newly hatched grub was till now more or less obscure, but Mr. Kunhikannan's observations on this point give a definite explanation as to the exact purpose served by that structure. There are various other points which bear evidence to the accuracy of the work, but, it is to be feared, will be uninteresting to non-entomological readers. However, the latter part of the paper which mainly deals with his very interesting observations and experiments regarding certain new methods of control of store pests will not fail to arrest the attention of any reader—least of all that of the practical agriculturist. Above all, it will serve to teach a lesson to some of us, who, with the half-knowledge resulting from the grafting of western thought on an eastern mind, are supercilious enough to speak of the ryot as steeped in ignorance and of his methods as effete and useless, for his experiments were devised to test the general practices and beliefs in vogue among the Mysore ryots and have amply served to show that the ryot—ignorant though he be according to western ideas—is yet the inheritor—an unreasoning inheritor, if you like—of the traditions of an experience and a wisdom dating back to unknown centuries.

The remedy universally suggested by Entomologists for controlling the pulse beetles is fumigation of the seed before storage or whenever it was found infested. The chemicals generally used for fumigation are either Hydrocyanic acid gas or Carbonbisulphide, the one a dangerous explosive and the other a deadly poison; both of them were therefore thought unsafe to be recommended for the use of the ryots who are as a rule small producers and store their pulses through the year in their huts for purposes of seed or consumption. It was therefore felt necessary that remedies should be devised that were less expensive and more suited to the conditions of the ryot. With this object in view, the author studied the practices already in vogue among the Mysore ryots.

He found the following methods in practice:—

In all cases the ryots store their pulses after thoroughly drying in the sun for three days.

1. The pulses are stored in earthen pots or in large bamboo bins smeared with clay. After storing, the lid is not opened and the grain is drawn off when wanted from a hole at the bottom which can be closed by a coconut shell from within. The top layer is by this arrangement not much disturbed.

2. The pulses may be stored in gunny bags tightly filled up or in "moodais" which are spherical bundles of grain encased by ropes of straw.

3. The surface layer pulses may be treated with castor oil or the surface may be covered by a top layer of ragi or samaj several inches deep.

4. The storage of pulses with a few drops of mercury placed in a soapnut shell.

All these methods were tried by the author at the Insectary at Bangalore. He found that the first three methods though not absolutely effective, were on the whole sufficiently efficacious in practice. During the course of certain experiments he made in connection with a test of these methods, he accidentally discovered the principle underlying all of them, whereby (he declares) "the wisdom of the methods of the ryot became clear at once." The principle depends upon the habit the beetles have after emerging from the grains—of always trying to force their way up till they reach an open space at the surface. Here they pair and the females lay their eggs on the surface layers. If the pulses are packed tight in a bag or a "moodai" so as to leave no empty space they are unable to pair and hence die without laying fertilised eggs or if the top layer is treated with castor oil or covered by a layer of ragi, the beetles are prevented from going back to the healthy grain below.

Following this principle he advocates the use of a thick layer of sand at the top and the drawing off of the necessary grain from a hole at the bottom. It is interesting to note that a similar discovery has been made simultaneously and independently at Pusa also.

The experiment with mercury appears when tried in small jars holding a few seers to have been a marvellous success. The author declares, however, that in large receptacles holding 100 seers or more it was not so effective "even though emergence was reduced by about three-fourths.

Experiments to find out which stage of the insect was affected showed that the effect was on eggs in which the protoplasm was observed to become disintegrated. How mercury effects the eggs, whether this property is due to its vapour or whether the phenomenon is of an electric nature or one connected with emanations as in radium, are all problems to be solved by a trained Bio-Chemist. Is it not wonderful that a few drops of mercury should have the property of affecting the eggs of an insect? Is it not even more surprising that this interesting piece of knowledge should have been derived from the ignorant ryot?

Y. R.

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### Extracts.

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The Government of Madras have approved of starting an industrial laboratory at Coonoor and sanction for a period of one year the following staff for the laboratory :—

- (1) One chemical assistant on a pay not exceeding Rs. 150 per mensem.
- (2) One laboratory attendant on Rs. 20 per mensem.
- (3) One clerk-accountant on Rs. 30 per mensem and
- (4) Two lascars on Rs. 10 per mensem.