

## Research Notes.

### Seedling Abnormalities in Cotton.

In the course of recording routine observations on cotton seedlings raised at the Agricultural Research Station, Nandyal, the authors have come across during this season a few cases of morphological abnormalities. As these are of botanical interest and do not seem to have been recorded before, a brief account of them is presented in this note.

The abnormalities observed relate to variation in structure, attachment and number of the cotyledons. They are of four different types.

Case I. A single rotund cotyledon was observed on the top of the hypocotyl, the attachment resembling the peltate condition of the lotus leaf. The fringe was raised all round resulting in a basin like structure. The part of the axis immediately below the attachment was slightly swollen. These were observed in two seedlings of *G. Indicum*. Ten days after sowing the plants did not make any further growth and remained in that condition for about a month when the normal plants attained 6 or 9 inches in height. In one seedling a small sprout appeared from the bulged portion below the attachment. Attempts to induce further growth in the seedlings by special attention proved futile, and as the cotyledons showed signs of drying up the seedlings were pulled out and preserved in formalin.

Case II. In an *Indicum* seedling two cotyledons and the radicle were all the development observed ten days after sowing. The plumule was entirely absent. Failure to grow was not due to insect injury. There was also no mark to indicate that the plumular bud was arrested in growth. It was believed that this defect is congenital and not developmental. The seedlings remained stunted for another week when signs of wilting necessitated pulling it out for preserving in formalin. The cotyledons were thick, succulent, brittle and broader than normal.

Case III was a Cambodia (Co. 2) seedling in which the cotyledons were found fused together from the bases of their stalks to form a sort of open sheath surrounding the stem. The fused cotyledon was shifted to a side, large in size and fan-shaped in out-line. The terminal bud was replaced by a few short branches bearing minute leaves. The plant withered away soon.

Case IV. This was a strange freak in Cambodia seedling where three leaf-like structures with distinct stalks appeared in the cotyledonary node. While two of these had the normal shape the third was smaller in size elliptic-truncate in out-line. The extra growth seemed to be a meristic variation. It is learnt that a similar type of abnormality was once observed in Cambodia by the cotton specialist, Coimbatore and more recently in two plants of *herbaceum* cottons. Seeds from these plants were reported to have given rise to normal plants only. It may be mentioned that Cases I, II and IV are comparatively rare.

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### A field mite as a household pest in South India.\*

As far as the writer is aware there does not occur any previous record of any field mite appearing as a household pest in S. India. Of course there are mites very well known as skin parasites of men and domestic animals like cattle, dogs and birds found all over the world, but the present case appears to be one where what is apparently a field mite was noted to appear in swarms in a house and cause considerable inconvenience to the inmates of the same. In July 1936, the

\* Paper read at the Indian Science Congress, 1937.



upper rooms in a new house in R. S. Puram, Coimbatore, were found infested by swarms of a mite crawling along the floor, the walls and even the bedsteads and clothings in them. It was during the night time that these were found more numerous and very active. At night they were even noted crawling over the bodies of sleeping persons and causing very great annoyance. Curiously enough these creatures were not noted to cause anything more than mere mechanical annoyance by crawling over the bodies of persons; they did not prick the skin or cause any irritation or itchings like parasitic mites. Although they were not such, yet the annoyance was sufficient enough to drive the inmates from those rooms.

Attempts to find out what they feed on were not successful. The mites increased to such numbers in the house that the inmates had to vacate the whole wing of these infested rooms for a week and sleep elsewhere. The rooms were fit for occupation only after they were thoroughly washed with crude oil emulsion or phenyle. After an interval of a few months the pest again appeared in the same house though not on such a serious scale as on the first instance. The creatures are very tiny specks of life like very small spiders a greenish brown colour and the adults measure less than a fourth of an inch. It appears as though it was an abnormal migration of the creature from some natural habitat, but attempts to find out the place from where these first came into the house have not so far been successful. The idea of this paper is simply to record such an occurrence not previously known in S. India. As far as the writer can make out the mite appears to belong to the family Tetranychidae in which are included most of the plant feeding forms known as "red spiders" brown mites etc.

The occasional invasion of dwellings by the clover mite (*Bryobia pratensis* G.) has been recorded from the U. S. A., by Miller and in Canada by Gibson and Twinn, but a comparison of the description of the clover mite with the subject of this paper shows that the two do not belong to the same species. It will be interesting to quote Miller's remarks on the peculiar house infesting habit of the clover mite as :

"A habit peculiar to the species is that of entering buildings during the fall. The exact prompting of this migration is still to be determined although heat probably plays a major role. Nymphs and adults will swarm into houses, spend the entire winter there and in the spring pass to the outside. I have observed this on several occasions. There was no food supply in the form of green plants available yet thousands of the mites remained alive throughout the winter of 1923 in a cold basement room."

The exact identity and systematic position of the mite is being studied and it is hoped to record these facts in a future contribution.

- Ref. (1) Miller A. E. "An introductory study of the Acarina or mites of Ohio."  
(2) A. Gibson. "Household insects and their control" and C. R. Twinn.  
Book No. 112 new series, pp. 73, Dept. Agr. Ottawa.

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## ABSTRACTS

**An Improved Cotton Picker.** A much improved, more efficient cotton picker has been recently invented by Rust and Rust in America. It is reported to be capable of doing the work of a hundred pickers.

The new machine strips cotton even from the unopened bolls of the cotton plant. It has also a 'Mechanical gleaner' on it which salvages any dropped cotton. It is more compact so that it can get between narrow rows of cotton plants. (*Science Supplement*, Vol. 84 No. 2186).

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