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Some adaptations in the habits of the Red Hairy caterpillar—*Amsacta Albistriga* W.

by

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Introduction: The red hairy caterpillar has been recorded as a very serious past of the dry crops in most of the rainfed tracts of the Madras State, for the past five decades. It occurs freely on the red sandy loam areas. Despite its polyphagous habits, the insect shows a marked partiality for groundnut on which the destruction wrought is often severe. Commencing from the earlier rains, a majority of the adult moths emerge during the early stages of the crop and the emergences may be spread over about half a dozen batches. The damage is at its worst when the caterpillars are two to three weeks old. In some cases, there is a second brood, presumably from the short cycle larvae, the adults emerging two or three months later, during the North-east monsoon rains. The essential prerequisite for the mass emergences is the receipt of copious showers, which are necessarily followed by the bountiful supply of food material for the progeny.

From a perusal of the records, the pest has been severe over most parts of the Madras State and some of the adjoining areas. A careful study of these areas has revealed that certain marked variations exist from tract to tract, in the seasonal climatic and other environmental factors. The local agricultural practices, having necessarily to be adjusted according to these factors, the pest also has adapted itself, to a perceptible degree, in its season of occurrence, feeding habits, nature and extent of damage, etc., and the following notes on these aspects may be of some interest.

Broad classification of the infested areas: The areas chronically infested by *Amsacta* can be broadly classified into the following zones, according to the peculiarities in the seasonal and climatic conditions. (1) South Arcot, North Arcot and Salem; (2) Madurai and Ramanathapuram and (3) Pollachi (Coimbatore district).

1. *South Arcot, North Arcot and Salem:* These districts are characterised by a particularly severe summer, which extends up to July. Occasional thunder showers are received during May—

June when the land is ploughed and kept ready. The crops mostly groundnut and a little of cumbu or cholam are sown with the receipt of some sharp showers during June—July and the subsequent progress of the crops depends upon the periodical rains which are usually received upto September. Heavy emergences of the moths may take place after every precipitation but all those prior to about a week or fortnight of the sowing are practically harmless, for the following reasons :

There being no vegetation — cultivated or wild — worth the name prior to the sowing in these areas, the moths lay their egg-masses almost anywhere in the open, like the surface of the soil, clods of earth, stones, bits of wood and occasionally the scanty vegetation available. Bulk of the eggs are destroyed by the scorching heat of the Sun and the rest by the subsequent ploughings. The few caterpillars that might hatch out from the stray egg-masses eventually die for want of food. Real damage is however wrought by the later emergences, during July and August, the grown-up caterpillars being noted about a fortnight after each emergence. The North-east monsoon sets in by about October when the precipitation is heavy and continuous. Consequent to these rains, minor emergences, evidently from the short cycle larvae, are often noted. But these are of no consequence, since the groundnut crop gets strongly established by that time, with the pods well-developed underground.

2. *Madurai and Ramanathapuram :* These tracts do not evidently have the benefit of the earlier showers and the sowings of the dry crops are, therefore extended upto August — September. Concomitant with this. the moths emerge later and the pest is encountered in alarming proportions by August — October.

3. *Pollachi (Coimbatore District) :* This tract presents certain peculiar features. Previously, groundnut was being sown by May and the pest noted by June. The sowings of late, have been advanced by about a month taking advantage of the earlier showers. The seeds are generally sown by April and the moths of *Amsacta* emerge with these sowing rains and the caterpillars are rampant during May — June. A more important point to be stressed here is that, unlike the other tracts the sowing rains are received in the form of intermittent mild showers and the weather also is very mild. The celubrious climate, coupled with the continuous drizzles, practically eliminate the natural destruction of the egg-masses by the sun, as it happens in other tracts. Incidentally, the very same factors

also encourage the rank growth of wild vegetation on the bunds, fence and waste lands near about. The moths readily seek shelter amidst these weeds and lay their eggs on them. The larvae, on hatching, feed freely on a variety of weeds like *Commelina benghalensis*, *Rhynchosia minima*, *Portulaca* sp. as well as on a number of grasses like *Chloris barbata*, *Pennisetum sp.* etc., until such time the groundnut crop grows up when they transfer their activities to the standing crop in the field.

Some interesting habits: Even when the caterpillars enter the groundnut field they first attack the cowpea plants which are sown in lines with groundnut and take to the latter after the plants are about three weeks old. This observation is in conformity with the common belief among the cultivators of this tract that the red hairy caterpillars do not feed on very young groundnut plants. They breed freely on young cholam, reducing the leaves to papery structures and if the crop is young it is completely destroyed and resowing will have to be done. That freshly-hatched red hairy caterpillars freely breed on crops other than groundnut has been observed by Sri S. Ramachandran (1950) and Kundam and Patel (1956), in Punganur (now in Andhra State) and Bombay areas respectively. In Punganur moths that emerge after the rain have been observed to lay their eggs on the soil, weeds etc., and the young caterpillars that hatch out infest the tender germinating *ragi* crop, cotton etc., and cause considerable damage to these crops rather than to the groundnut crop. In Bombay, the moths have been noted to lay their eggs on hedge plants and the young caterpillars that hatch feed on these hedge plants. However later on when the cultivated crops have germinated, they migrate to the field and become full grown.

Yet another interesting fact in Pollachi area is the severity of the second wave of the caterpillars. Heavy emergences of moths, evidently from the short cycle larvae, take place after the North-east monsoon and the caterpillars cause serious havoc to horsegram, cotton etc., which are grown by about that period.

It has to be admitted that the mention of the second wave of the emergences from the short cycle larvæ is based on some cursory observations made by the workers on this field some years ago and this has to be confirmed by detailed study.

One more interesting fact about the feeding habits of *Amsacta* is that fields which have had a heavy emergence of the moths, escape severe damage as also observed by Ramachandran (1950). The adults

do lay their egg-masses in plenty on the standing crop. The caterpillars, on hatching, just scrape the leaves and feed on them for a few days, without any serious harm to the plants. They assume the more serious feeding phase about a fortnight later, by which time they completely desert the original field and march off in their millions to the neighbouring areas.

Control: The latest method of control evolved to tackle the pest, in its most vulnerable stage, is to give a liberal dusting of BHC 10% a week after each emergence. The principle envisaged is that the caterpillars would have just hatched out and would be in their gregarious feeding phase for three or four days and that a timely application of the insecticides would annihilate the pest in its young caterpillar stage before it would cause any damage. The fact that a large number of the caterpillars concentrate on the bunds and waste lands under conditions as are prevalent in the Pollachi area, may also be taken advantage of to control the pest effectively and economically by treating these areas also.

Control of grown up caterpillars with other insecticides like Toxaphene 20% dust and parathion is also possible but they are very costly compared to the BHC 10% treatment.

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