

RESEARCH NOTE-I

EPIDEMIC OF KAIL LEAF STITCHER IN GALIS AND
MURREE FOREST DIVISIONS

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Blue pine (*Pinus wallichiana*) locally known as kail is a beautiful fastgrowing pine, naturally found between 1200 m and 3000 m elevation in the hills of Pakistan and Azad Kashmir. The tree which was well known for its resistance against insect pests has fallen pray to lepidopterous pests in the very recent years. In 1980 a new giant defoliator, *Biston regalis* Moore (Geometridae: Lepidoptera) attacked kail forests, denuding large patches of hill tops in beautiful tourist resorts of Murree in the Punjab (Pakistan) and Loon Bagla and Danna of Azad Kashmir. In 1984 microlepidopterous leaf stitchers caused defoliation of kail trees in patches in the Galis Forest Division at Chatri R. near Thandiani, Bagan near Nathiagali and Darwaza near Kuzagali in Hazara, N.W.F.P.

The sudden appearance of new insect pests reveals that the resistance to insect pests prevalent in blue pine was factually not an inherent characteristics of the tree. It was rather the majic of the biotic equilibrium of the undisturbed natural ecosystem excercised by a strong complex of biocontrol agents, the parasites and predators. During the past decade a large scale repeated sprayings of various toxic insecticides against codling moth on apples, adjoining the coniferous forest, took a heavy toll of parasites and predators resulting in the withdrawal of strong natural checks and free multiplication of insect pets. Blue pine defoliators are among those many insects which became serious in the field of forestry and agriculture as a result of indiscreminate spraying in the areas.

The problem of kail defoliator, *Biston regalis* Moore was solved during 1981-82 with hactic efforts by adopting mechanico-biological control operation. The new problem of kail leaf stitchers is under study and the following observations have been recorded so for:

It appears that the damage by leaf stitchers started at least a couple of years back and enormous populations was built up to cause wholesale defoliation of the trees in large patches during 1984. The microlepidopterous caterpillars were found feeding among kail needles stitched together with silken thread to make a bunch which ultimately dries up and falls to the ground. During May, 1985 the affected area was surveyed and collection of the insect was made from different localities. The immature stages were reared up in the laboratory at Peshawar which produced hymenopterous parasites and 3 moths, identified as *Aeolanthès sagulata* Family Xyloryctidae Order Lepidoptera.

A detailed study was undertaken during July, 1985 by setting up a temporary field laboratory at Khanspur. Samples (Bunches of needles) were collected from Thandiani, Dunga-gali, Kuzagali, Ayubia, Khanspur, Barian and Charehan (Murree) and examined to record

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living and dead stages of the pest for assessing natural mortality of the pest population due to biocontrol agents.

Following are the results:

EXTENT OF PARASITISM IN KAIL LEAF STITCHER POPULATION

Locality	Samples examined	No. of larvae/pupae found				Percent Parasitism
		Larvae		Pupae		
		Living	Parasitised	Living	Parasitised	
Thandiani	50	0	5	2	3	80
Dungagali	17	0	6	1	1	87.5
Kuzagali	573	0	66	0	1	100
Ayubia	315	0	27	0	1	100
Khanspur	570	0	42	0	1	100
Barian	50	0	6	0	0	100
Charehan	20	0	6	0	0	100
Total	1595	0	158	3	7	98.2

Out of 1595 samples 158 parasitised larvae, 7 dead pupae and 3 living pupae were found. An overall parasitism of 98.2% in the pest population was recorded. With a living pest population of 1.8% no more infestation was observed during July, 1985.

In the laboratory rearings 3 microlepidopterous moths emerged which are quite different from *Aeolanthes sagulata* recorded earlier. Seventy three hymenopterous parasites of 15 types emerged from the dead larvae/pupae which are directly responsible for suppressing the pests populations in Galis and Murree kail forests.

Observations on the pest population were continued upto end of October, 1985 but no sign of the pest was found in the entire area. New flush of needles had come up on the defoliated trees. It means that the pest population has been suppressed completely by the natural enemies and there is no danger of epidemic in near future.