

TABLE I
Changes in chlorophyll 'a' and 'b' and total chlorophyll
mg/g Fresh Weight

No.	Virus	Host		Chloro- phyll 'a'	Chloro- phyll 'b'	Total chlorophyll	Chl. 'a' Chl. 'b' ratio
1.	Mosaic	Sathgudi	Healthy	0.4291	0.1824	0.6115	2.357
			Diseased	0.1995	0.0702	0.2697	2.843
			% reduction	53.0	51.0	56.0	
2.	Yellow Corky Vein	"	Healthy	0.4544	0.1504	0.6048	3.023
			Diseased	0.4166	0.1358	0.5524	3.068
			% reduction	8.3	7.6	8.5	
3.	'Sankhu tegulu' (unidentified)	"	Healthy	0.3787	0.1759	0.5546	2.153
			Diseased	0.0421	0.0211	0.0632	1.998
			% reduction	88.8	88.0	88.6	
4.	Infectious variegation	Lisbon lemon	Healthy	0.1515	0.0789	0.2304	1.920
			Diseased	0.1296	0.0662	0.1958	1.958
			% reduction	13.7	16.1	15.0	

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**EPHESTIA CAUTELLA (WALKER) (PHYCITIDAE ;
LEPIDOPTERA) INFESTING STORED GARLIC
(ALLIUM SATIVUM)**

IN August, 1972, heavy infestation of *Ephestia cautella* was observed on garlic stored in a basket at Solan (1500 m.a.s.l.), Himachal Pradesh. This garlic was stored in May, after proper drying. A review of literature revealed that some lepidopterous larvae infested stored garlic in Hawaii and Philippines as early as 1915 (Banaag *et al.*, 1961; Ehrhorn, 1917 and 1926; Maskew, 1915 and 1918).

However, from India so far there is no record of *E. cautella* infesting garlic in stores, as far as the authors know. In the present investigations it was observed that the larvae generally started boring the bulb from the base and continued feeding inside the bulblets. The outer skin of the bulblet was found intact while the whole bulb from inside was consumed. Yellowish brown excreta was also seen near the point of entrance. The newly hatched larvae were offered bulblets, pricked at a number of places, for feeding. The larvae were seen entering the holes thus made and also fed inside. After two days excreta was seen coming out of the holes thereby indicating that the larvae were feeding

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inside the bulblets. In heavy infestation the whole bulbs/bulblets were consumed (Figs. 1 and 2).



FIG. 1. Damaged garlic bulb.

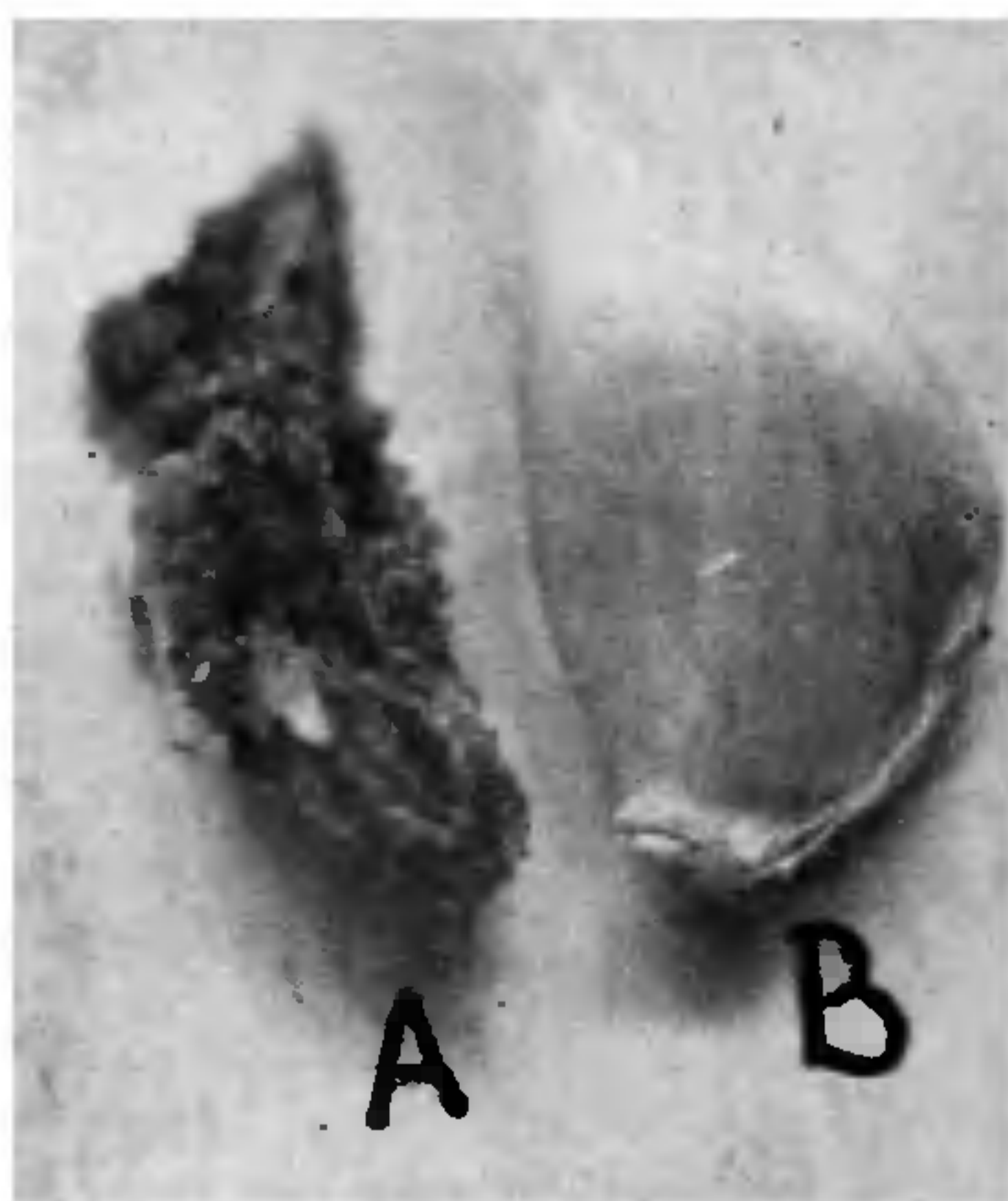


FIG. 2. A. Damaged bulblet. B. Healthy bulblet.

A culture of *E. cautella* was maintained in the laboratory at $27 \pm 1^\circ\text{C}$ in an incubator, throughout the year. It was found that this pest required about one month for completing one generation. At room temperature the insects entered hibernation during October and adults were seen emerging from the hibernating pupae during next April.

The identification of the insect was confirmed by the Commonwealth Institute of Entomology, London.

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ON THE FORM OF GILLRAKER SERRAE IN THE INDIAN *ILISHA*

WHITEHEAD (1967)¹ described the form of gillraker serrae as a distinguishing character in the species of *Setipinna*. The form of gillraker serrae in the Indian species of *Ilisha* is described in the present note. A slight but recognisable difference is recorded in different species. The genus *Ilisha* is under review by the author and six species are recognised from the Indian waters, viz., *Ilisha megaloptera* (Swainson)⁵, *I. sirishai* Seshagiri Rao³, *I. filigera* (Valenciennes)², *I. elongata* (Bennett)², *I. whiteheadi* Seshagiri Rao⁴ and *I. melastoma* (Schneider)⁵. The form of gillraker serrae in these species has not been described so far.

Examination of gillrakers in the six species of *Ilisha* revealed that the serrae do not form distinct clumps as in *Setipinna taty* or *S. phasa*¹. However the size and arrangement of serrae vary in the different species of *Ilisha*. In *I. megaloptera* the serrae on the upper surface of the gillraker are relatively larger, less numerous and crowded into groups with distinct gaps. Very few serrae are present on flanks. In *I. sirishai* the serrae are relatively smaller, numerous, uniformly distributed over the upper surface, descending on to the upper 1/4 of the flanks. In *I. filigera* the serrae are present in two or three rows on the upper surface with a few larger serrae towards the tip. A row of serrae is present on the lower flank of the gillraker. In *I. elongata* the serrae are more