

ON THE POPULATION TRENDS OF *ANEUROTHRIPS PRIESNERI* BHATTI
(INSECTA : THYSANOPTERA) FROM THE LEAF GALLS OF *CORDIA OBLIQUA*

T. N. ANANTHAKRISHNAN AND S. SWAMINATHAN*

Zoological Survey of India, Calcutta.

ABSTRACT

Populations of *Aneurothrips priesneri* Bhatti inducing galls on the leaves *Cordia obliqua* Willd., (Boraginaceae) have been studied in relation to the gall development.

Earlier studies on the ecology and population dynamics of gall thrips communities are restricted to the tubuliferan galls discussing the host-parasite and host-predator interactions with reference to *Schedothrips orientalis* in *Ventilago maderaspatana* galls (Ananthakrishnan and Swaminathan, 1977) as well as their role in relation to gall development as in *Gynaikothrips flaviantennatus* induced *Casearia tomentosa* galls (Raman *et al.*, 1978). The present study reports the populations of a gall making terebrantian, *Aneurothrips priesneri* inducing galls on the leaves of *Cordia obliqua* (Ananthakrishnan and Jagadish, 1969 ; Ananthakrishnan, 1978 ; Krishnamurthy *et al.*, 1977), with a view to assess the periodicity, population interactions and their role in pathogenicity.

MATERIALS AND METHODS

Populations of the gall maker were analysed from 10 samples of galls from a local tree by random sampling method.

OBSERVATION AND DISCUSSION

The individual gall has a life of 80 days (Fig. 1) with the gall maker population active upto 40 days. The galls are initiated with the feeding effect of 1—2 adults as observed in the 2—5 day old gall ; the population reached the maximum of 110 in 10 to 30 days of gall development and commenced to decline by the 40th day after which there was no population.

The gall maker—*Aneurothrips*—was restricted to summer months (March to July, 1978) (Fig. 2), with a few adults establishing the population by the last week of February, and displaying two generations in about 130 days—each manifested for approximately 50—60 days and the two separated by a gap of about 10—20 days. The overall population build-up in the field was as follows : (i) the larval population was high (210/10 galls) by the 10th day of population initiation (10th March 1970), (ii) the adult (242/10 galls) and

* Entomology Research Unit, Loyola College, Madras.

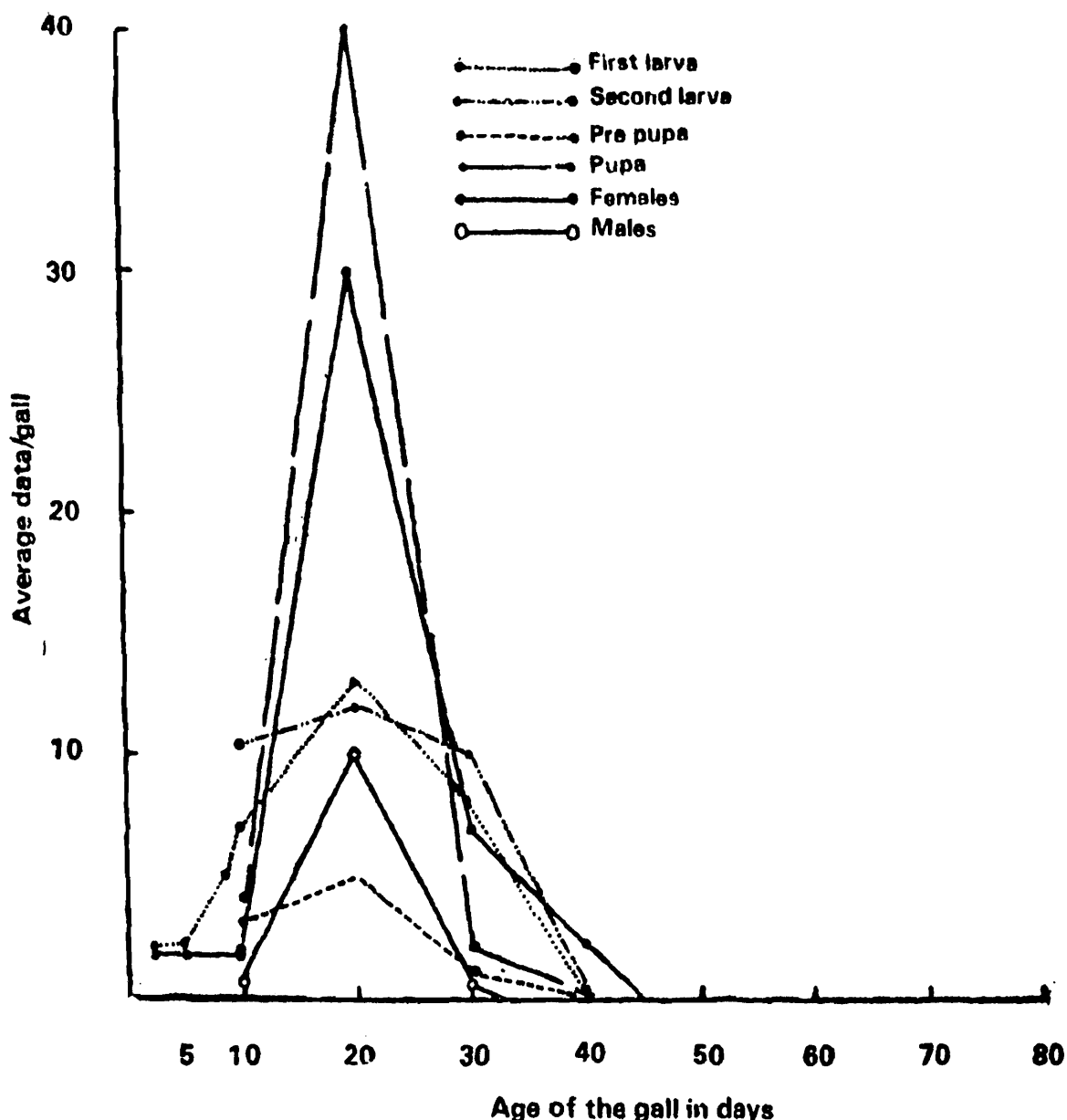


Fig. 1. Population trend of the gall maker in the context of gall development.

pupal (68/10 galls) populations reached the maximum in 20 days (20th March 1978), (iii) by 40th day the entire population started declining, (iv) the population including all developmental stages was maintained at a considerably low level from the 50th to 60th day (third and fourth weeks of April 1978) during which period a spider population was observed (1–2/10 galls), (v) again there was an increase in the population of all stages from 70th day (10th May 1978) with an another peak by the 80th day (20th

May 1978) (172 larvae, 190 pupae and 160 adults / 10 galls), and (vi) finally the population declined by the 90th day (30th May 1978) with the adult population maintained at a low level (2–3/10 galls) till the 130th day (10th July 1978).

The average total population of the gall maker was seen to be 12 per gall inclusive of first and second larvae, pupae and adults with the minimum of 0.2 per gall as observed on the 130th day and maximum of 52.2 per

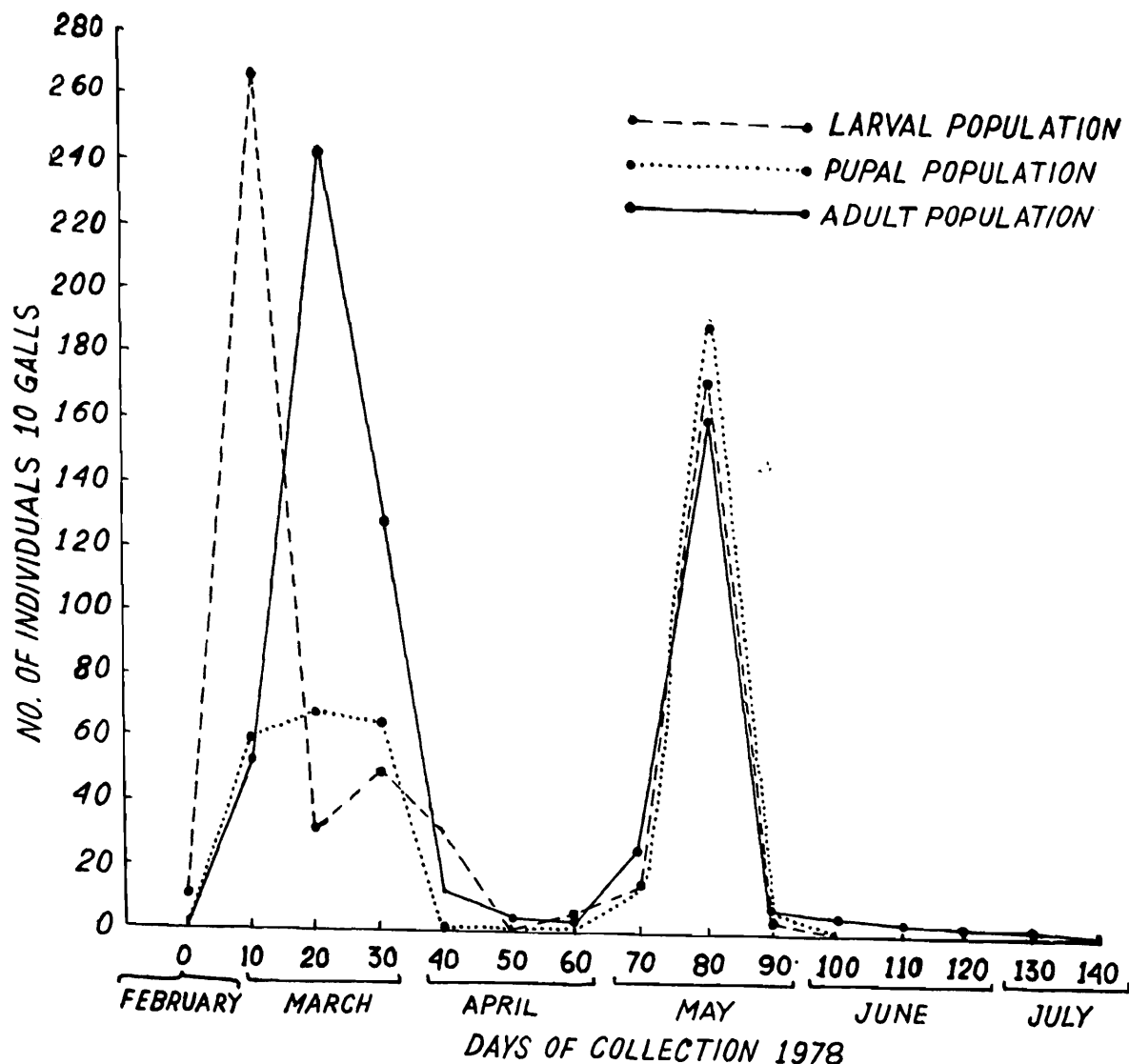


Fig. 2. Overall population trend of *Aneurothrips priesneri*.

gall as observed on the 80th day. The total count for each month during the peak population period indicated that the immature stages were always higher than the adult stage which could be attributed to high mortality during developmental stages. Throughout the study, the average sex ratio was 1 : 1.8 (male : female) the females outnumbering the males. By the 130th day in most of the galls, the larvae, pupae and adults (30-40/10 galls) were found to be infected by an unidentified entomogenous fungus. Population of the predator species *Montandoniola mora-*

guesi (Anthocoridae) (Muraleedharan and Ananthakrishnan, 1971 ; Muraleedharan, 1973 ; Raman *et al.*, (1978) and *Androthrips* (Ananthakrishnan and Varadarasan, 1977) were weak *i.e.*, 1 and 2-5/10 galls respectively during the period from the 40th to 50th day (May 1978).

The populations of gall tubulifera (species of *Gynaikothrips* and *Schedothrips*) were generally known to occur between summer and autumn months (July to September) (Ananthakrishnan and Swaminathan, 1977 ; Raman *et al.*, 1978), but *Aneurothrips* population

TABLE I. Total count of immature and adult stages/month and sex ratio.
(average for 10 galls)

Months for 1978	Immature stages	Adult stages	Sex ratio Male : Female
February	10	6	1 : 2
March	539	434	1 : 1.6
April	35	17	1 : 2
May	402	193	1 : 2.7
June	—	10	1 : 2.3
July	—	2	1 : 2
Total	986	662	Mean 1 : 1.8

was evident only during summer months. The total duration of this terebrantian was restricted to a 3-4 month period, which is lesser than that of the other two tubulifera reported viz. *S. orientalis*, 12 months and *G. flaviantennatus*, 8-9 months. Besides, the great deal of interaction between the gall makers, and their parasites and predators, known in tubuliferan gall communities, was lacking in the case of *Cordia* gall community.

ACKNOWLEDGEMENT

Thanks are due to the University Grants Commission for the award of a research grant during the tenure of which the work was done.

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