ability and host regulation[2]. Investigations on size or age of the hosts and their acceptance by the parasitoids have already been studied[1-7].

This study was conducted at 24 ± 1°C and 55 to 60% RH. To determine the effect of host age on parasitism, 30 larvae of *E. atomosa* of known age ranging between less than 1 day and 9 days old were exposed to a single-mated female of *D. trichoptilus* in an oviposition unit for 24 hr. Following the exposure, the larvae were removed into separate containers and the daily emergence of parasitoid from different lots were recorded. Each experiment was replicated five times and fresh pigeonpea pods and 20% honey were provided as food to the host and parasitoid respectively. The relationship between the age of the host larvae and % parasitism were examined by regression analysis.

Results are recorded in table 1. Emergence was not seen from 9–10 day old hosts. Maximum parasitism, 21.3% was recorded on 2–3 day old host larvae. There exists a significant ($P < 0.05$) correlation between the host age and the percentage of parasitism ($r = -0.6245$).

Lingren *et al*[4] studied the host age preference by *Campoletis chlorideae* Uchida towards four lepidopterous host species *viz Pseudoletia unipuncta* (Hawarth), *Trichoplusia ni* (Hubner), *Prodenia ridinia* (Cramer) and *P. praefica* Grote. Larvae (1–8 day old) of all hosts were susceptible for parasitism, 2–6 day old being the most acceptable. In the present findings 1–8 day old larvae of *E. atomosa* were susceptible, 2–4 day old were readily accepted and 2–3 day old being most suitable for parasitism. Cardona and Oatman[3] recorded 48% parasitism on 2–3 day old *Kieferia lycopersicella* (Walsingham) larvae by *Apanteles dignus* Muesebeck and 8–9 day old larvae remained unparasitized. *Phthorimaea operculella* (Zeller) larvae 3–4 day old were more suitable for maximum adult emergence of *Orgilus lepidus* Turner[6] and *Temelucha* sp[7]. In *Cotesia flavipes* (Cameron) maximum parasitism 42% was recorded on 7–8 day old host larvae[5]. In the present study 21.3% parasitism was seen with 2–3 day old *E. atomosa* larvae.

Table 1 *Maximum effective age of E. atomosa larvae for parasitism by D. trichoptilus. Total number of hosts in each case is 150.*

Host age in days	Total number of parasitoids emerged: Male	Female	Mean number of parasitoids emerged per replicate	Percentage of parasitism
0–1	8	4	2.40	8.0
1–2	10	5	3.00	10.00
2–3	20	12	6.40	21.33
3–4	18	8	5.20	17.33
4–5	13	7	4.00	13.33
5–6	8	3	2.20	7.33
6–7	5	3	1.60	5.33
7–8	3	2	1.00	3.33
8–9	1	0	0.20	0.67
9–10	0	0	0.00	0.00

Each host age groups was replicated five times, each replicate consisted of 30 larvae of *E. atomosa*.

20 November 1984; Revised 8 April 1985

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MYCETOCYTES IN *AEGYPOECUS PERSPICUUS* (PHTHIRAPTERA)

A. K. SAXENA and G. P. AGARWAL*

Department of Zoology, L. M. Govt. Post-Graduate College, Rishikesh, Dehradun, (India)

**Department of Zoology, Banaras Hindu University, Varanasi 221 005, India.*

SOME Mallophaga, specially the nonhaematophagous species show an interesting symbiotic association with bacteria[1-7]. The symbionts occur in special cells called mycetocytes. The best studied species in this respect is *Columbicola columbae columbae* (infesting pigeon, *Columba livia*)[2-4]

In this study, another ischnoceran species *Aegypoecus perspicuus* (infesting white scavanger vulture, *Neophron percnopteri*) was found containing 45–80 mycetocytes packed with symbionts. These cells are found among the fat bodies. Individual mycetocytes are oval, spindle- or pear-shaped cells measuring 72 to 94 μ in length and 43 to 80 μ in width. They are uninucleate, green coloured and contain many densely packed brown coloured, rod-shaped symbionts measuring 1.4 to 1.8 μ. In the adult female the mycetocytes are concentrated towards the posterior end, near the oviduct and vagina. The ovarial ampulla (terminal end of lateral oviducts, where the fifth egg stalk is attached) also harbours a large number of similar symbionts. But these symbionts occur freely in ovarial ampulla and do not seem to be arranged in the mycetocytes, hence filial mycetomes (as shown in *C. columbae columbae*[4]) are not structured. They stain darker than those present in the abdominal mycetocytes.

As the ripe egg passes through the oviduct the symbionts pass into the egg and reach the centre, losing their staining ability. At the time when midgut is undergoing formation (during embryonic development), the cell limits appear around the symbionts and embryonal mycetomes are formed. Now these embryonal mycetome swarm out and penetrate the midgut. From there, they wander further through the fat bodies under the hypodermis, to take their position in the abdomen. When the third instar larva of female readies itself to metamorphose into the adult, the mycetocytes begin to wander towards the abdominal end (because in adult female the mycetocytes are concentrated towards posterior end). The manner in which the symbionts are able to reach the ovarial ampulla in *A. perspicuus* could not be studied.

It seems that the phenomenon of endosymbiosis is also exhibited by *A. perspicuus* which is purely a feather feeder. In *A. perspicuus* the mycetocytes are present in adult females unlike *C. columbae columbae* in which, it is reported that all the mycetocytes are used up during formation of filial mycetomes in ovarial ampulla[4]. Examination of crop content of a number of specimens of this louse reveals no host blood in it. It is believed that in ischnoceran Mallophaga the symbionts provide a substance which helps in digestion of feather keratin. However, in another nonhaematophagous ischnoceran, *Lipeurus lawrensis tropicalis* (infesting the poultry bird, *Gallus domesticus*) mycetocytes do not occur. Symbionts were not detected in any part of gut[8] or reproductive system[9]. On the other hand mycetocytes have been reported in *Lipeurus baculus*[3]. It seems that endosymbiosis occurs in some species of Mallophaga, being absent in others.

14 November 1984; Revised 28 February 1985

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ANNOUNCEMENT

THE K A A S AWARDS 1985

The Karnataka Association for the Advancement of Science invites applications from young scientists (below 35 years of age as on 31.12.1984) belonging to Karnataka who have carried out original and creative work in the fields of Physics, Chemistry, Biology, Mathematics and Geology. The Award carries a cash prize of Rs 2000/- and a citation. Eligible candidates are requested to contact the Secretary, The Karnataka Association for the Advancement of Science (Regd), Mathematics Building Annexe, Central College, Bangalore-560 001 for details. Last date for receipt of Applications is **1st September 1985.**