Pupal parasitization of Anaphaeis aurota Fabricius (Lepidoptera: Pieridae) infesting Capparis decidua (Forsk.) by Brachymeria albicrus (Klug) (Hymenoptera: Chalcididae)

ANKITA GUPTA* and SHRAVAN M. HALDHAR1
National Bureau of Agriculturally Important Insects, Post Bag No. 2491, H. A. Farm Post, Bellary Road, Hebbal, Bangalore - 560 024, Karnataka, India.
*Corresponding author E-mail: drankitagupta7@gmail.com
1Central Institute for Arid Horticulture, Beechwal, Bikaner - 334 006, Rajasthan, India

ABSTRACT: During the surveys conducted in CIAH Farm and in Desnok, Bikaner in the month of November and December, 2010, Capparis decidua (Forsk.) commonly known as kair was found to be heavily infested with Anaphaeis aurota Fabricius commonly known as Pioneer or Caper white. C. decidua is a bushy shrub used in landscape gardening, afforestation and reforestation in semi desert and desert areas and it provides assistance against soil erosion. The grown caterpillars of A. aurota easily strip off the branches, devouring leaf after leaf causing great damage. The pupae of A. aurota were found to be parasitized with Brachymeria albicrus (Klug). B. albicrus has been earlier reported from southern India, Orissa and from Haryana as Brachymeria kurukshetraensis Farooqi, Husain & Ghai. B. kurukshetraensis Farooqi is a junior synonym of B. albicrus. The mean per cent parasitization of Pioneer butterfly by B. albicrus at CIAH farm and at Desnok, Bikaner was 49.5 and 47.5 respectively and the mean per cent emergence of the mature adult parasitoids from the parasitized pupae was 15.5 and 14.0 respectively.

KEY WORDS: Capparis decidua, Anaphaeis aurota, Brachymeria albicrus, pupal parasitoid

During the surveys conducted in Rajasthan, Brachymeria albicrus (Klug) was found parasitizing A. aurota infesting C. decidua. The present investigation was carried out to find out the mean per cent parasitization of the A. aurota by B. albicrus in Rajasthan and Karnataka, India.

Surveys were carried out in the CIAH Farm, Bikaner, in Desnok, Bikaner and at Bangalore, Karnataka during 2010 for the pest infestation on C. decidua. Collection of pupae was done in the first and third week of November and December respectively. A total of 200 pupae were hand collected from C. decidua from each locality and kept in separate jars covered with clean muslin cloth. The pupae of A. aurota were then observed for the parasitoid emergence. The collection of A. aurota larvae was also done from Bannerghatta, Bangalore to study the seasonal and colour variation due to geographic distribution of the pest. The pest and parasitoids were identified in the Biosystematics, Biodiversity & Biosafety Laboratory at NBAII, Bangalore using the systematic keys provided by Kunte (2000) and Narendran (1989) respectively.
During the investigation it was found that the fully grown caterpillars of *A. aurota* easily stripped off the branches, devouring leaf after leaf causing great damage. Due to seasonal variation, geographical distribution and sexual dimorphism, there was a marked difference in colour of wings and thickness of veins of *A. aurota*. The females were larger with thicker and broader veins, apex and outer margins, while the males had thinner black bands.

The pupae of *A. aurota* were found to be parasitized by *B. albicrus*. This is the first report of this parasitoid parasitizing *A. aurota* infesting *C. decidua* from Rajasthan. *B. albicrus* has been earlier reported from southern India (Narendran, 1989), Orissa, and Haryana as *Brachymeria kurukshetraensis* Farooqi, Husain and Ghai. Very recently *B. kurukshetraensis* is considered as a junior synonym of *B. albicrus* (Narendran and Khan, 2011). *B. albicrus* is also a potential pupal parasitoid of many lepidopterans *viz.*, *Danaus chrysippus* (Linnaeus) (*Nymphalidae*), *Earias vittella* Fabricius, *E. insulana* Boisduval (*Nolidae*), *Pieris rapae* Linnaeus (*Pieridae*) and *Acraea acerata* Hewitson (*Nymphalidae*) (Noyes, 2011). The female of *B. albicrus* can be identified with apex of scutellum distinctly bilobed with dense silver pubescence on two lobes; hind femur red with black patch on outer disc; hind tibia yellow with base and ventro-lateral margin black (Narendran, 1989).

The mean per cent parasitization of *A. aurota* by *B. albicrus* at CIAH farm and at Desnok, Bikaner was 49.5 and 47.5 respectively and the mean per cent emergence of the adult parasitoids from the parasitized pupae was 15.5 and 14.0 respectively (Table 1). The pupae which did not yield either parasitoid or transformed to adults were later dissected and it was observed that from both the localities such pupae contained malformed parasitoids which could not emerge out. The mean per cent pupal malformation at CIAH Farm and at Desnok, Bikaner was 34.0 and 33.5 respectively.

**ACKNOWLEDGEMENT**

The authors are highly thankful to Dr. R. J. Rabindra, Former Director, NBAII, Bangalore, for providing necessary facilities for carrying out this research work. Thanks are due to Dr. J. Poorani, Principal Scientist, NBAII, Bangalore, for capturing images of the parasitoid.

**REFERENCES**


Kunte K. 2000. *Butterflies of Peninsular India*. Universities Press (Hyderabad) and Indian Academy of Sciences (Bangalore), 254 pp.


<table>
<thead>
<tr>
<th>Date of collection of pupae</th>
<th>Total number of <em>A. aurota</em> pupae collected</th>
<th>Percent parasitization of <em>A. aurota</em> (CIAH farm)</th>
<th>Percent emergence of <em>B. albicrus</em> in laboratory (CIAH farm)</th>
<th>Percent parasitization of <em>A. aurota</em> (Desnok, Bikaner)</th>
<th>Percent emergence of <em>B. albicrus</em> in laboratory (Desnok, Bikaner)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.11.10</td>
<td>50</td>
<td>60</td>
<td>16</td>
<td>56</td>
<td>14</td>
</tr>
<tr>
<td>15.11.10</td>
<td>50</td>
<td>44</td>
<td>14</td>
<td>48</td>
<td>14</td>
</tr>
<tr>
<td>01.12.10</td>
<td>50</td>
<td>42</td>
<td>14</td>
<td>40</td>
<td>12</td>
</tr>
<tr>
<td>15.12.10</td>
<td>50</td>
<td>52</td>
<td>18</td>
<td>46</td>
<td>16</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>49.50</td>
<td>15.50</td>
<td>47.50</td>
<td>14.00</td>
</tr>
</tbody>
</table>