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MISCELLANEOUS NOTE

23. INSECTS VISITING LAC INSECT FOR HONEYDEW¹

The lac insect, *Kerria lacca* (Kerr) excretes honeydew after settling at the suitable site on the shoots of the host plant species and a number of insects are attracted to it. The excretion often accumulates at the anal opening of the lac test, even ferments and attracts the sooty mould to grow thick enough to form a felt like covering over the lac insects killing them by suffocation. Honeydew is believed to be a waste product excreted into the Colo-rectum from the loops of the intestine that are suspended within the Colo-rectum (Kapur 1962). The frequency of excretion of the honeydew per insect per hour varies from 2.08 to 3.30 droplets by the larva and from 8.04 to 10.10 droplets by the fertilised females and it contains seventeen amino acids (Srivastava & Varshney 1966, 1968). A mature female excretes 0.2974 to 1.1716 cu. mm. honeydew per hour (Varshney 1972).

Mahdihassan (1925, 1939) reported several insects associated with lac but did not report any insects associated with honeydew, whereas Negi *et al.* (1930) and Mahdihassan (1957) reported 17 insects, belonging to orders Hymenoptera and Diptera, associated with honey-

dew but without stating the crops and localities from where they were collected. Attempts were, therefore, made at Regional Field Research Station for lac, Damoh, Madhya Pradesh, to collect insects visiting honeydew during both the *rangeeni* crop seasons namely, *baisakhi* (October/November to June/July) and *katki* (June/July to October/November). A total of 48 insects collected by us, Negi *et al.* (1930) and Mahdihassan (1957), are being presented in table 1. The insects collected by these authors are shown by a + sign and those not collected by a — sign, and have been arranged under the orders and families.

It will be seen from the collections that hymenopterous and dipterous insects were the frequent visitors during both the crop seasons whereas lepidopterous insects were found only during *katki* and hemipterous insects only during *baisakhi* crop seasons. During *katki* crop season, *L. quadrispinous* and *M. brunnea* were found to build their formicaries round the sparse encrustation. Similarly, *D. koenigii* appeared during the time of male emergence during *baisakhi* crop season.

¹ This paper was read at the Seminar on Lac Production held at the Indian Lac Research Institute, Namkum, Ranchi on 9-10 November 1973 and refers to No. C-28 on p. 25 of the abstract.

TABLE 1
INSECTS COLLECTED OF HONEYDEW BY VARIOUS AUTHORS

Species	Collected by the present authors		Negi et al. (1930)	Mahdihassan (1957)
	baisakhi	katki		
Hymenoptera				
FORMICIDAE				
1. <i>Camponotus angusticollis</i> Jerd.	+	+	-	-
2. <i>C. angusticollis</i> var. <i>sanguinolentus</i> For.	-	+	-	-
3. <i>C. compressus</i> Fabr.	-	-	+	-
4. <i>C. rufoglaucus</i> Jerd.	-	+	-	-
5. <i>C. sericeus</i> Fabr.	-	+	+	-
6. <i>C. variegatus</i> var. <i>fuscithorax</i> Forel.	-	-	+	-
7. <i>C. near varians</i> Roger	-	-	+	-
8. <i>Cremastogaster</i> sp.	+	+	-	-
9. <i>Dolichoderus</i> sp.	+	+	-	-
10. <i>Lophomyrmex quadrispinous</i> Jerd.	-	+	-	-
11. <i>Monomorium dichroum</i> For.	-	+	-	-
12. <i>M. near indicum</i> Smith	-	-	+	-
13. <i>M. latinoda</i> Mayr.	-	+	-	-
14. <i>Myrmicarica brunnea</i> Saund.	-	+	-	-
15. <i>Solenopsis geminata</i> subsp. <i>rufa</i> Jerd.	-	-	+	-
VESPIDAE				
16. <i>Polistes stigma</i> Fabr.	-	+	-	-
17. <i>Vespa orientalis</i> Fabr.	+	+	-	-
MUTILLIDAE				
18. <i>Mutilla</i> sp.	-	+	-	-
SPHEGIDAE				
19. <i>Sceliphron madraspatnam</i> Fabr.	+	-	-	-
APIDAE				
20. <i>Micrapis florea</i> Fabr.	+	-	-	-
CHALCIDIDAE				
21. <i>Brachymeria fulvitaris</i> Cam.	-	-	-	+
Diptera				
MUSCIDAE				
22. <i>Musca</i> sp.	+	+	-	-
23. <i>Musca ventrosa</i> Wied.	-	+	-	-
24. <i>M. pattoni</i> Aust.	-	+	-	-
25. <i>M. illingworthi</i> Patton.	-	+	-	-
26. <i>Gymnodia tonitruui</i> Wied.	-	-	-	+
27. <i>G. tonitruui</i> ab. <i>canache</i> Walk.	-	-	-	+

Species	Collected by the present authors		Negi et al. (1930)	Mahdihassan (1957)
	baisakhi	katki		
CALLIPHORIDAE				
28. <i>Chrysomya megacephala</i> Fab.	+	+	-	-
29. <i>C. rufifacies</i> Macq.	-	+	-	-
30. <i>C. albiceps</i> Wied.	-	-	-	+
TABANIDAE				
31. <i>Tabanus hilaris</i> Wlk.	-	+	-	-
32. <i>T. striatus</i> Fab.	-	+	-	-
33. <i>T. jucundus</i> Wlk.	-	+	-	-
SARCOPHAGIDAE				
34. <i>Sarcophaga</i> sp.	+	+	-	-
35. <i>S. hirtipes</i> Wied.	-	-	-	+
TRYPETIDAE				
36. <i>Tephrostola reinhardi</i> Wied.	-	-	-	+
OTITIDAE				
37. <i>Chrysomyza aenea</i> W.	-	-	-	+
38. <i>C. demandata</i> F.	-	-	-	+
MILICHIIDAE				
39. <i>Milichia pubescens</i> Beck.	-	-	-	+
40. <i>Milichiella lacetipennis</i> Loew.	-	-	-	+
EPHYDRIDAE				
41. <i>Gymnopa albipennis</i> Loew.	-	-	-	+
Hemiptera				
PYRRHOCORIDAE				
42. <i>Dysdercus koenigii</i> Fab.	+	-	-	-
LYGAEIDAE				
43. <i>Graptostethus servus</i> Fabr.	+	-	-	-
Lepidoptera				
SATYRIDAE				
44. <i>Mycalesis</i> sp.	-	+	-	-
45. <i>Mycalesis</i> sp. near <i>mineus</i>	-	+	-	-
NYMPHALIDAE				
46. <i>Neptis hylas varmona</i> Moore	-	+	-	-
47. <i>Precis iphita</i> Cramer	-	+	-	-
48. <i>Euthalia nais</i> Foster	-	+	-	-

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