

## A LIST OF HYMENOPTERA OF SUPERFAMILY CHALCIDOIDEA PARASITES OF CALYPTRATE MUSCOIDEA.

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The Superfamily Chalcidoidea, recognised by Ashmead as one of the 10 superfamilies of the Order Hymenoptera is, but for a few exceptions, of considerable economic importance, mostly to agriculturists and especially to fruit growers. The Chalcids are genuine parasites destroying injurious species of other orders, attacking their eggs, larvae, and pupae and in some cases even the imagines of their hosts. They are widely distributed almost all over the globe.

Very little is known about their life history, as only the parasites reared from certain hosts have been recorded or described.

During our researches on Muscoids we accidentally came across some fly larvae breeding on a dead snail at Kurseong, Bengal (alt. 4,000 ft.). Eight larvae were collected and later all these pupated. When the adults emerged, they were found to consist of two specimens of *Sarcophaga dux* var. *tuberosa* Pand., and six Hymenoptera of the family Chalcididae. We have also collected further specimens of these parasites from Muscoid puparia.

The species of Chalcids that have been bred by us from Muscoid puparia are :—

Species of Chalcid.	Locality.	Host.
1. <i>Spalangia</i> sp. <sup>1</sup> (Family Pteromalidae).	Calcutta.	<i>Stomoxys calcitrans.</i> <i>Chrysomyia megacephala.</i> <i>Musca vicina.</i> <i>Sarcophaga</i> sp.
2. <i>Brachymeria fulvitaris.</i> (Family Chalcididae).	Calcutta.	<i>Chrysomyia megacephala.</i> <i>Sarcophaga ruficornis.</i>
3. <i>Brachymeria argentifrons.</i>	Kurseong (Himalaya).  Calcutta.	<i>Sarcophaga dux</i> var. <i>tuberosa</i> , breeding on a dead snail.  <i>Sarcophaga dux.</i>
4. <i>Dirhinus pachycerus.</i> (Family Chalcididae).	Kurseong.  Calcutta.	<i>Sarcophaga dux</i> var. <i>tuberosa.</i>  <i>Sarcophaga ruficornis.</i> <i>Musca inferior.</i> <i>Chrysomyia megacephala.</i>

<sup>1</sup> Previously recorded as parasitising the pupae of *Musca domestica* L. outside India, *vide* Hewitt, G. C., The House-Fly, *Musca domestica* Linn. (Cambridge, 1914).

*Dirhinus pachycerus* is the commonest of these parasites, and large numbers of pupae of *S. ruficornis* or *C. megacephala*, if left exposed, are liable to become parasitised by it. The species seems instinctively to collect near the breeding places of these flies.

The species mentioned above have previously been recorded from the following hosts in India.<sup>1</sup>

*Brachymeria argentifrons* Ashmead.

Host—Lasiocampidae.

Locality—S. India.

(Ayyar, 1921.)

*Brachymeria fulvitarsis* Cameron.

Host—not known.

Locality—Quetta.

(Cameron, 1906.)

*Dirhinus pachycerus* Masi.

Host—not known.

Locality—Calcutta.

(Masi, 1927.)

The only member of the Chalcidoidea recorded from Muscoidea in this country is :—

*Syntomosphyrum indicum* Silvestri.

(Family Eulophidae).—Described by Ayyar (1925)<sup>2</sup> from maggots of an unknown fruit-fly in South India, and by Silvestri (1910) from a fruit-fly at Bangalore.

From the above it will be seen that the Muscoids as hosts of the species of Chalcidoidea mentioned above have not been recorded previously.

The life history of one of the species is being studied in detail.

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<sup>1</sup> Vide Mani, M. S.—*Catalogue of Indian Insects*, Pt. 23, Chalcidoidea (Delhi, 1938).

<sup>2</sup> Ayyar, T. V. R.—*Spol. Zeyl.* XIII, p. 252 (1925).