ABSTRACT

Among the parasitic Hymenoptera, the species belonging to the family Braconidae are not only known to keep pest population under control in their natural habits but also extensively used in the classical biological control programmes directed against economically important pest species, mainly belonging to the Lepidoptera, Coleoptera, Hymenoptera, Diptera, Neuroptera, Psocoptera and Hemiptera (Achterberg, 1993).

The braconid parasitoids are solitary or gregarious ectoparasitoids and endoparasitoids, mostly larval parasitoids, attacking the larval stages of holometabolous insects. However a number of egg parasitoids, few pupal parasitoids and some are known attacking nymphs of paurometabolous insects. Euphorinae are known to attack adults of holometabolous or paurometabolous insects. Hyperparasitism is rare.

The present study is confined to the taxonomic studies of the subfamilies (i) Braconinae (ii) Euphorinae and (iii) Hormiinae. Braconine belongs to 'cyclostome' group of Braconidae. Most are Idiobiont ectoparasitoids of larval Coleoptera, Diptera, Lepidoptera and phytophagous Hymenoptera. All euphorines are non-cyclostome Koinobiont endoparasitoids of larval and adult Coleoptera and mainly
adult Heteroptera, Hymenoptera Neuroptera, Pscoptera and Orthoptera. Hormiines are cyclostome braconids which contain Idiobiont ectoparasitoids of the larvae of Lepidoptera, Diptera, Coleoptera and Tenthredinidae (Achterberg, 1993; Whitfield & Wharton, 1997).

In order to facilitate correct identification of the Indian braconid parasitoids, studies leading to comprehensive reviews and revision of genera and tribes of the Braconidae were initiated in the Department of Zoology, A.M.U., Aligarh. The present work is a continuation of such studies on the Indian Braconidae. It deals with the subfamilies Braconinae, Euphorinae and Hormiinae of the family Braconidae.

In the present work in all 41 genera belonging to Braconinae (32), Euphorinae (4) and Horminae (5) have been recorded from India of which 5 genera viz., (i) Africadesha (ii) Pseudoshirakia (iii) Testudobracon (iv) Centistes and (v) Streblocera are reported for the first time and a new genus Zakaella gen.nov. is proposed. In all 47 species have been studied, out of which 15 new species viz., (i) Africadesha gunturensis sp.nov. (ii) A. indica sp.nov. (iii) Eutropobracon granulatus sp. nov. (iv) E. punctatus sp.nov. (v) Habrobracon bicolor sp.nov. (vi) Pachybracon aligarhensis sp.nov. (vii) P. biharenis sp.nov. (viii)
Pseudoshirakia aligarhensis sp.nov. (ix) P. bengalensis sp. nov. (x) P. biharensis sp.nov. (xi) Testudobracon asphondyliae sp.nov. (xii) Tropobracon hayati sp.nov. (xiii) T. shafeei sp.nov. (xiv) Physaraia indica sp.nov. and (xv) Centistes indicus sp.nov. are added to the existing fauna of Indian Braconidae. Further, 2 new combinations viz., (i) Zakaella alami (Zaka-ur-Rab), comb.nov. and (ii) Aridelus flavicoxae (Shujauddin), comb.nov. have been proposed as well as 3 species viz., (i) Tropobracon infuscatus Achterberg (ii) Tropobracon comorensis Aschterberg and (iii) Streblacerea macroscapa (Ruthe) are recorded for the first time from India. Brief diagnosis and keys to Indian tribes and genera of Braconinae and brief diagnosis and keys to the Indian genera of Euphorinae and Hormiinae are given. Separate keys to the Indian species of the genera viz., Africadesha Quicke, Bracon Fabricius, Eutropobracon Ayyar, Habrobracon Ashmead, Pachybracon Cameron, Physaraia Shenefelt, Pseudoshirakia Achterberg, Stenobracon Szepligeti, Tropobracon Cameron and Parahormius Nixon are also proposed. The status of the family Braconidae is discussed and the new taxa have been illustrated with the help of 117 diagrams.