

PREFACE
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ACKNOWLEDGEMENT

PREFACE

Protection of crops from Pest depredation has been an important concern of agriculturists since the beginning of husbandary. Mechanical methods were popular and soon primitive Chemical techniques were developed undoubtedly, chemicals gave quick results but lead to serious problems like pest resistance, secondary pest outbreak, pest resurgence, killing of the beneficial insects, air, water and soil pollution and health hazards etc. The system and new improvements of pest suppression practice came and went but the practice of biological control achieved high popularity shortly after the successful cottony cushion scale control programme in California. thus to overcome the chemical effects, an approach was made for biological control. Currently appreciation of the value and possibilities of biological approach to insect pest suppression is on the upsurge.

Recently there is major concern of modern crop protection the integrated pest suppression which involves the utilization Mechanical, chemical, biological (natural) control methods. Its primary goal is safe effective and economical pest population

reduction. But today biological insect pest suppression has found permanent place at the centre of integrated pest suppression.

The biotic agents which play important role in biological insect pest suppression are the parasitic Hymenoptera. They constitute the major force for preventing the noxious pest population. Among the parasitic families of Hymenoptera, Ichneumonidae ranks first and are extremely important for economic and biocontrol point of view.

The insect pest management requires the biological studies of the parasitoids without which species cannot be introduced in biological control programme. The biological studies include the study of biology, taxonomy and distribution of biotic agents.

The Ichneumonids of world are mainly studied by Jurine (1801-1807), Fabricious (1804), Gravenhorst (1815-1820), Thunberg (1822-29), Forester (1868), Holmgren (1869-72), Thomson (1873-1897), Cresson (1887), Ashmead (1900), Roman (1912-1936), Viereek (1914-1922), Guhan and Rohwar (1917-1918), Cushman (1921-1926), Clausen (1940), Perkins (1962), Townes, Momoi and Townes (1965), Townes (1965) and Townes (1957-73), Walkley (1967), Fitton and Gauld (1976) and others.

Indian Ichneumonids are mainly studied by Morley (1912-13), Rao (1953), Gupta (1955-73), Kamat and Gupta (1972), Jonathan and Gupta (1973), Gupta and Tikar (1976), Gupta and Gupta (1977), Gupta and Maheshwary (1970-77), Ghandra and Gupta (1977), Kaur and Jonathan (1979) and Nikam (1980) and others.

In Maharashtra the noteworthy work on Ichneumoida from Marathwada region is carried by Nikam.

Southern Maharashtra is rich in agricultural production and green vegetation. Therefore, studies on Ichneumonids from Sangli district of Southern Maharashtra is attempted here.

This dissertation deals with the taxonomic studies on parasitic Hymenoptera of the family Ichneumonidae. It is based on the collections of ichneumonids and their cocoons made myself and Dr. K. S. Heble during 1989 to 1991.

This dissertation has been divided into five chapters. The first chapter deals with the general introduction, which provide National and International status of the work. The second chapter is devoted to material and methods which involves the techniques used for rearing of parasitoids their hosts and third chapter deals with the taxonomic studies of the family Ichneumonidae, host records and distribution. The fourth chapter provides summary of present work concluding remarks and findings. The references has been given at the end of the dissertation in fifth chapter.

The dissertation includes four species of three genera belonging to two tribes and sub families each. This includes the description of four new species. Of these genus Arthula Cameron known from Assam is recorded for the first time from Maharashtra.

- I. Subfamily : Gelinae
 - i. Tribe : Mesostenini
 - 1. Goryphus punctatus Sp. nov.

- II. Subfamily : Gelinae
 - i. Tribe : Mesostenini
 - 2. Goryphus shakeraii Sp. nov.

- III. Subfamily : Gelinae
 - i. Tribe : Mesostenini
 - 3. Arthula willingdoni Sp. nov.

- IV. Subfamily : Banchinae
 - i. Tribe : Lissonotini
 - 4. Leptobatopsis mirajensis Sp. nov.

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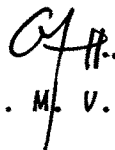
I thank to Mr. Hemant M. Karandikar for his neat & painstaking electronic typing.

I appreciate and extend thanks to skillful artist, Mr. M. M. Mushrif for excellent photography.

I recall my warm feelings towards my parents and family members to the patience and for keeping me cheerful through the period.

Lastly I thank to all my well-wishers.

30th November, 1991
Sangli


- Miss. M. V. Chopade
