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A new species of the genus *Protomicroplitis* (Braconidae: Microgastrinae) from India

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Abstract

The genus *Protomicroplitis* was erected in 1898 by Ashmead. Currently the genus has 18 described species from the world. Nixon revised it in 1965 with nine species from Oriental region. Later in 1970, Rao and Chalikwar described four new species from India with a key to oriental species. In the present study one new species has been described from Jammu and Kashmir, India with a key to Indian species.

Keywords: Braconidae, new species, *Protomicroplitis*, Jammu, India

Introduction

Jammu and Kashmir is a state of India. It is located mostly in the Himalayan Mountains. The state has geographical area of 2, 22, 236 km square. It lies between 32° 17' - 37° 05' N and 72° 31' - 80° 20' E. The state is divided into three main regions viz. Jammu, Kashmir and Ladakh. Present study is conducted from Jammu region. The said region comprises of 10 districts. It includes both plain and hilly areas.

The climate of the region varies with altitude. In Jammu city and adjoining plains, the climate is similar to the nearby Punjab region with hot summers, rainy monsoon and mild cold winters. While Jammu City itself does not experience any snowfall, the higher hills and mountains remain snow-capped at least in the winter season.

Materials and methods

Collection

Insect samples were collected from Poonch district of the state Jammu and Kashmir using a sweep net of appropriate pore size. The collected specimens were then transferred to plastic bags; the braconids were sorted with brush and placed in the vials containing 70% ethanol. The wet collection was then brought to laboratory for further processing, involving following steps

Card mounting

The wet specimens were stretched under microscope carefully. Dried specimens were glued laterally to the rectangular card, the card mounted specimens were kept in a box for drying. Observations and measurements were made on dried card mounted specimen using Nikon 1500 microscope

Slide preparation

Wings, antenna and hind leg were detached using a fine needle, wings were mounted as such while antenna and hind leg were kept in KOH for 12-48 Hrs. depending upon the sclerotization of the specimen, followed by dehydration using standard protocol and then mounted in Canada balsam on the glass slide. The slides were kept in thermostat for drying. Photographs were taken using Nikon DS-Fi1 camera, attached with SMZ 1500 Nikon stereo zoom microscope.

***Protomicroplitis Indus* sp Nov.**

Colour: head dark brown; vertex smooth, shiny; mandible and labrum light brown, maxillary and labial palps yellow. Wings hyaline with yellowish venation; eyes shiny yellow; metasoma 1st metasomal tergite and anterior part of 2nd metasomal tergite dark brown, rest of metasoma uniformly light brown; ovipositor sheath yellow.

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Head: rectangular in dorsal view 1.75x as wide as long, vertex shiny almost bare, gena moderately pubescent, face broader than long, punctate with a median raised carina starting medially from dorsal end of clypeus and ends between antennal sockets, face rugose, dorsal margin of face sparsely pubescent; interorbital space 0.47x the width of head; ocelli prominent, triangular, ocello-ocular space 1.5x the inter-ocellar space and 0.45x the interorbital space, occiput concave; head almost circular in frontal view, clypeus transverse, bare, rugose demarcated from face by a suture, supraclypeal foveae strongly impressed, labrum margined, sparsely pubescent; mandibles bidentate, sparsely pubescent; maxillary and labial palp densely setose; antenna longer than body, bare, scape cup shaped, first flagellomere shorter than collective length of scape and pedicel, first 4 flagellomeres 5x as long as broad, scape 1.4x its width, pedicel as long as wide and 0.6x the width of scape; eyes 1.75x as long as broad; malar space almost equal to the basal width of mandible.

Mesosoma: 1.3x as long as broad, proscutum deeply punctate, sparsely pubescent; mesoscutum convex, closely and deeply punctate, sparsely pubescent; scutellar disc elevated, punctate and sparsely pubescent; sides of scutellar disc striated except a bare area interrupted medially by a small rugose area.

Wings: forewing 2.87x as long as its maximum width, pterostigma 3x as long as wide, r length equals stigmal width, slightly curved, shorter than metacarp, areolet small, triangular

Legs: Hind leg strong, slender; coxa almost twice as long as wide, glabrous, weakly punctate with few striations at distal end; inner hind tibial spur longer than half of length of basitarsus., twice as long outer spur and basitarsus longer than the combined length of terminal 3 tarsi; femur robust, shorter than tibia, 1.3x coxa length, sparsely setose; tibia 1.07x the femur length, densely setose, which is more than half the length of tibia.

Propodeum: deeply punctate and sparsely pubescent, more than twice as broad as long; spiracle small, circular and prominent; mesopleuron medially almost glabrous, sparsely pubescent and punctate ventrally, demarcated from metapleuron by oblique crenulated furrow; metapleuron moderately pubescent, deeply punctate except small anterio-lateral area.

Metasoma: 1.26x as long as mesosoma, sparsely setose; first metasomal tergite 2.5x as long as broad, smooth anteriorly, with a narrow groove extending upto half of its length, posterior portion rugose, sparsely setose and weakly punctate, posterior end rounded. Second metasomal tergite longer than first tergite, anterior 25 percent area rugose with a transverse carina at posterior end, rest 75 percent smooth and shiny; second and third metasomal tergite as wide as the length of first metasomal tergite, 3rd tergite 0.33x as long as wide, rest of metasom sparsely setose, shiny; hypopygium small, pleat like, ovipositor sheath small and bare, without three apical setiform hairs.

Material examined: Female 3, Poonch, J&K, India, 2015

Comment: The new species is very close to *P. indicus* with following contrasting characters: Ovipositor sheath bare apically without any setae; First metasomal tergite 2.5x as long as broad

Key to the Indian species of genus *Protomicropeltis*

The key provided is modified from Rao & Chalikwar (1970) with addition of a new species from India.

1. Length of inner hind tibial spur more than half the basitarsus..... 3
 -Length of inner hind tibial spur more or less half the basitarsus..... 2

2. Metacarp 1.35x its distance from apex of radial cell; second abscissa of radius 1.5x second transverse cubitus. First tergite with a median longitudinal depression, hind wing areolet 4 sided.....*orientalis*

-Metacarp equal to distance from apex of radial cell; second abscissa of radius 0.5x first abscissa and 0.66x the second transverse cubitus. First tergite with excavation on basal half, Hind wing areolet 4 sided..... *rugulosus*

3. Lateral sulci of second tergite not strongly developed, and never borders the second suture.....4

- Lateral sulci of second tergite strongly developed, well grooved with pits and borders the edge at least as far as second suture, latter deeply and strongly carinate, second transverse cubitus meeting the first for proximal to the junction of two abscissa of radius, Third tergite always smooth and shiny; carapace never formed, second transverse cubitus well indicated and second abscissa of radius not well indicated or sclerotized; areolet 3 sided *breviteribus*

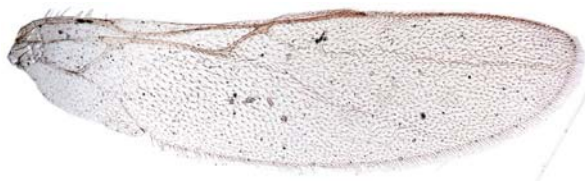
4. Ocellar diameter less than ocellular distance, face strongly rugose, length of first tergite 2x the median width; propodeum strongly, closely and deeply punctate with a strong median longitudinal carina; median field of second tergite margined by shallow depression, second transverse cubitus meeting the first for proximal to the junction of two abscissa of radius, Third tergite always smooth and shiny; carapace never formed, second transverse cubitus well indicated and second abscissa of radius not well indicated or sclerotized; areolet 3 sided, ovipositor sheath with 3 black setiform appendages..... *indicus*

-Ocellar diameter less than ocellular distance, face strongly rugose, length of first tergite 2.5x the median width; propodeum strongly, closely and deeply punctate with a strong median longitudinal carina; median field of second tergite margined by shallow depression, second transverse cubitus meeting the first for proximal to the junction of two abscissa of radius, third tergite always smooth and shiny; carapace never formed, second transverse cubitus well indicated and second abscissa of radius not well indicated or sclerotized; areolet 3 sided, ovipositor sheath without 3 black setiform appendages..... *indus* sp. Nov

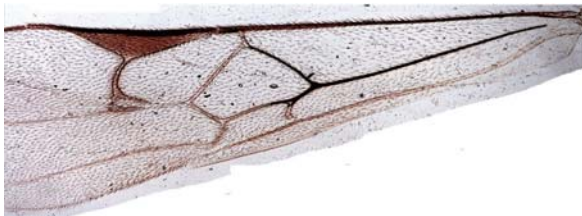
The new species has been named on Indus region



A. frontal view of head



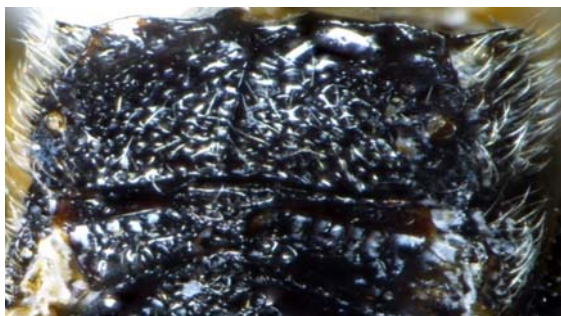
B. Hind wing



C. Forewing



D. Mesosoma in dorsal view



E. Propodeum



F. Metasoma in dorsal view



G. Antenna



H. Metasoma laterally with ovipositor



I. Hind Leg

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