



Description of a new species of the genus *Bitomus* Szepligeti (Hymenoptera: Braconidae) from India

Ahmad Samiuddin¹, Zubair Ahmad² & Mohammad Shamim²

¹ Department of Plant Protection, Faculty of Agricultural Sciences, Aligarh Muslim University, Aligarh, Uttar Pradesh 202002, India

² Entomology Section, Department of Zoology, Aligarh Muslim University, Aligarh, Uttar Pradesh 202002, India
Email: asamiuddin@gmail.com

The genus *Bitomus* Szepligeti was recently redescribed and revised by Fischer (1987, 1994) and briefly treated by Papp (1978, 1982) and Wharton (1997). Among the opiine genera, it is the only genus that has metasomal terga 2-3 or 2-4 usually concealing the remainder of terga to form a hard shell (carapace) like structure. The genus is essentially Old World, mostly tropical with 16 described species, the genus is represented by seven species from Oriental, six species from Palaearctic and three species from Ethiopian region, (Fischer 1987). *Bitomus* is represented by a single species *Bitomus hemicoriaceus* Fischer from India. In the present work one new species is described under this genus from India. The diagnostic characters of the species is provided.

The terminology for the various body parts and wing venation is that of Sharkey & Wharton (1997), while Eady (1968) has been followed for the description of surface sculpture.

The types of the new species are deposited in the

Insect Collection, Department of Zoology, Aligarh Muslim University, Aligarh, India.

Bitomus indicus Samiuddin sp. nov. (Images 1-4)

Material examined:

Holotype: Male, 24.vi.2002, Etawah, Uttar Pradesh, India, coll. Mohammad Shamim, HYM/BR007.

Paratypes: 1 male, 1 female, 15.ix.1982, Aligarh, Uttar Pradesh, India, coll. Shujauddin, HYM/BR052-053; 1 female, 19.iv.2005, Baburpur-Auraiya, Uttar Pradesh, India, coll. Mohammad Shamim, HYM/BR054.

Distribution: Uttar Pradesh, India.

Etymology: The specific name refers to the country of origin of the species.

Female

Body: length 2.0mm.

Head: Polished, pubescent, 2.2x wider than long (24.5:11); frons smooth, polished. Eyes large, in the same level rounded with temple, 2.1x longer than temple (7.5:3.5); temple strongly narrow, 0.5x as long as eye (3.5:7.5). Occiput slightly curved. Ocelli slightly protruded, AOL:POL:OOL: OD = 2:3:5.5:2, stemmaticum densely punctate, width, 0.16mm., elsewhere sparsely punctate and pubescent. Face evenly convex, quadratic, 1.6x as wide as high (12.5:8), thickly and deeply punctate, pubescent, middle carina visible clearly on top extinct on bottom; eye margin curved. Clypeus slightly convex, polished; more sparsely punctate than the face; 1.3x as wide as high (7:5.5); separated from face by a weak semi-circular suture, anterior margin protrudes fold like in the middle. Anterior tentorial pit (ATP) small, inter-tentorial line 2.3x as tentorial-ocular line (7:3). Malar area almost as long as basal mandibular width (3:3.5), mandibles at the base not wide. Oral cavity not visible. Maxillary palpi 0.7x as long as head height (12.5:18.5). Antennae filiform, almost as long as body (78:79.5), 22-segmented (range

Date of publication (online): 26 March 2010
Date of publication (print): 26 March 2010
ISSN 0974-7907 (online) | 0974-7893 (print)

Editor: T.C. Narendran

Manuscript details:

Ms # 01943
Received 11 February 2008
Final received 24 October 2009
Finally accepted 02 February 2010

Citation: Samiuddin, A., Z. Ahmad & M. Shamim (2010). Description of a new species of the genus *Bitomus* Szepligeti (Hymenoptera: Braconidae) from India. *Journal of Threatened Taxa* 2(3): 770-772.

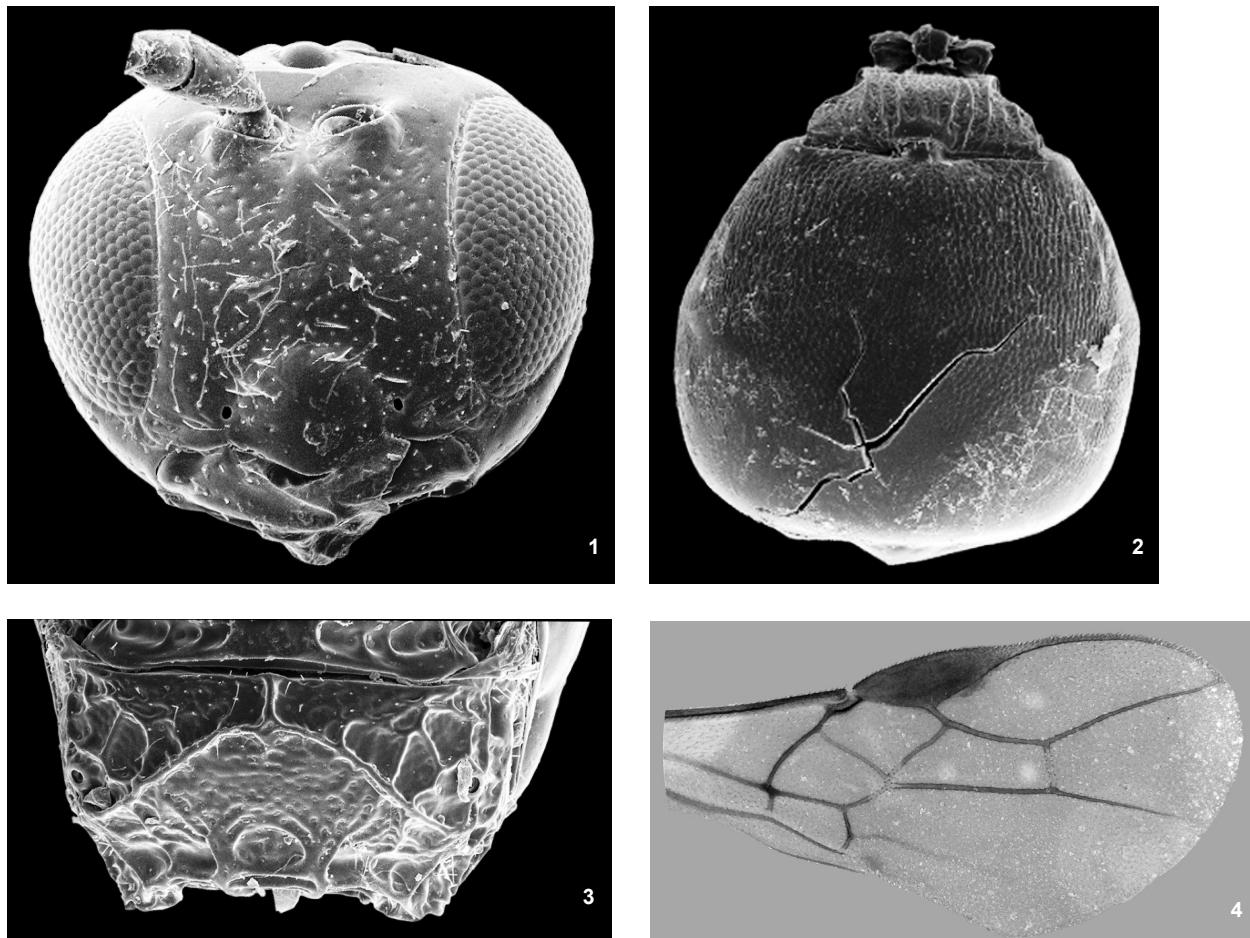
Copyright: © Ahmad Samiuddin, Zubair Ahmad & Mohammad Shamim 2010. Creative Commons Attribution 3.0 Unported License. JoTT allows unrestricted use of this article in any medium for non-profit purposes, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Acknowledgements: We thank Dr. M. Hayat and Dr. Shujauddin for reviewing the manuscript and offering useful suggestions. Authors are also thankful to Chairman, Department of Zoology for laboratory facilities.

OPEN ACCESS | FREE DOWNLOAD



Abbreviations: ATP - Anterior Tentorial Pit; 2RS - first cubital cross vein; m-cu - recurrent vein; r - first abscissa of radius; 3RSA - second abscissa of radius; 3RSB - third abscissa of radius; 2CUB - parallel vein; 1cu-a - nervulus; m-cu in hind wing - post nervellus; F1 - first flagellomere; F8 - eighth flagellomere; F1-7 - first to seventh flagellomere; T₂ - second metasomal tergite; T₃ - third metasomal tergite; OOL - ocello-ocular line (distance from the outer edge of a lateral ocellus to the compound eye); POL - post-ocellar line (distance between the inner edges of the two lateral ocelli); AOL - anterior-ocellar line (distance between the inner edges of anterior and lateral ocellus); OD - diameter of an ocellus; ZDAMU - Zoology Department, Aligarh Muslim University.

Images 1-4. *Bitomus indicus* Samiuddin, sp. nov.

1- Head, frontal view; 2 - Metasoma, dorsal view; 3 - Propodeum, dorsal view; 4 - Fore-wing

20-22 segments), F_1 twice as long as wide (4:2), following flagellomeres (F_2-F_{12}) almost equally long Length (3.5), rest ($F_{13}-F_{19}$) slightly short length (3), F_{18} and penultimate (F_{19}) 1.7x as long as wide (3:1.8), flagellomeres are clearly separated from each other.

Mesosoma: 1.2x as long as high (30.5:24.5), 1.3x as high as head (24.5:18.5) and 1.1x as wide as head (27.5:24.5) dorsally slightly convex. Mesonotum sparsely punctate, polished, pubescent, 0.8x as wide as long (22:25), equally rounded before the tegulae, densely setose on anterior declivity; notauli impressed anteriorly, finely crenulate, absent on disc; mid-pit oval; rest of the disc sparsely setose. Scutellar sulcus deep, strongly crenulate. Scutellum sparsely punctate, polished, 1.7x as wide as long (13.5:8). Post axillae, side field of metanotum crenulate. Propodeum reticulate on anterior half, finely rugose posteriorly with a short mid-longitudinal carina anteriorly. Side of pronotum overall crenulate, more prominent below. Mesopleuron smooth, polished, anterior marginal furrow finely crenulate below, posterior marginal furrow finely crenulate above clearly crenulate below; sternaulus deeply impressed, wide, strongly crenulate;

extends from anterior to ventral margin. Metapleuron reticulate, epimerum crenulate. Legs short, broad, hind femur 3.5x as long as wide (17.5:5).

Wings: Stigma wide, wedge shaped length 0.55mm, width 0.15mm; r arising from basal third of stigma (22:7), 0.4x as long as width of stigma (2.5:6), a slight angle with 3RSa formed; 3RSa 1.3x as long as 2RS (12.25:9.5); 3RSb slightly outwardly curved, 1.9x longer than 3RSa (23:12.25). Marginal cell extends clearly upto wing apex; m-cu postfurcal; second submarginal cell slightly narrow apically almost rectangular. 1CU 1.5x as long as m-cu (9:6); 1 cu-a postfurcal; first sub-discal cell closed, 2CUb arising slightly below middle of first subdiscal cell; m-cu absent in hind wing.

Metasoma: Wide and roundish, 1.3x as long as wide (38:29.5), suture between T_2 and T_3 is not clearly visible; petiole strongly striated, 0.7x as long as its apical width (11.5:16.5), apex 2.3x wider than its base (16.5:7), side margin of apical third parallel, basal carina visible until apical margin widely separated from each other, merged in the striations, the space between basal carina clearly striated; more than 2/3 of the carapace granulate, extreme

apex of carapace smooth and polished, the spiracles on carapace are considerably far from its margin; rest of the tergites concealed beneath carapace. Ovipositor short, length = 0.09mm, sheath with 8-8 setae arranged on either side.

Colour: Body black; legs yellow, palpi pale; antennae from F₈ to apex, tegulae brown; F1-7, scape, pedical, mandible brown; mandibular tip and tarsal claw dark brown; wings infuscate, stigma and veins brown.

Male: Similar to the female.

Host: Unknown.

Remarks

The new species, *Bitomus indicus* Samiuddin, sp. nov., closely resembles *Bitomus hemicoriaceus* Fischer but differs in having clypeus 1.3x as wide as high (clypeus twice as wide as high in *hemicoriaceus*), mesonotum 0.8x as wide as long (mesonotum 1.5x as wide as long in *hemicoriaceus*), propodeum with a short mid-longitudinal carina anteriorly (propodeum with a curved cross carina in *hemicoriaceus*), vein r arising from basal third of stigma (vein r arising from middle of stigma in *hemicoriaceus*).

References

Eady, R.D. (1968). Some illustrations of microsculpture in the Hymenoptera. *Proceeding of Royal entomological Society London* (A) 43(4-6): 66-72.

Fischer, M. (1987). Hymenoptera, Opiinae III: Äthiopische, orientalische, australische und ozeanische Region. *Das Tierreich.*, 104. Verlag Walter de Gruyter Berlin, New York, XV+734pp.

Fischer, M. (1994). The genus *Bitomus* Szépligeti (Hymenoptera: Braconidae, Opiinae). *Zeitschrift der Arbeitsgemeinschaft Öster Entomologen* 46(1-2): 21-29.

Papp, J. (1978). Braconidae (Hymenoptera) from Korea. III. *Acta Zoologica Academiae Scientiarum Hungaricae* 24: 133-148.

Papp, J. (1982). Taxonomical and faunistical novelties of the Opiinae in the Arctogaea (Hymenoptera, Braconidae). *Annales Historico-Naturales Musei Nationalis Hungarici* 74: 241-253.

Sharkey, M.J. & R.A. Wharton (1997). Morphology and Terminology, pp.19-37. In: Wharton, R.A., P.M. Marsh & M.J. Sharkey (eds.). 'Manual of the New World Genera of the Family Braconidae (Hymenoptera)'. The International Society of Hymenopterists: Washington D.C.

Wharton, R.A. (1997). Generic relationships of Opiine Braconidae (Hymenoptera) parasitic on fruit-infesting Tephritidae (Diptera). *Contributions of the American Entomological Institute* 30: 1-53.

