

New records of Cryptinae Kirby, 1837 and Ichneumoninae Latreille, 1802 (Insecta: Hymenoptera: Ichneumonidae) for Iran

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Abstract

Five species of Ichneumonidae are recorded from Sistan and Baluchestan province including *Cryptus inculcator* (Linnaeus, 1758), *Dichrogaster saharator* (Aubert, 1964) and *Stilpnus gagates* (Gravenhorst, 1807) from the subfamily Cryptinae and *Cratichneumon* sp. and *Thyraeella collaris* (Gravenhorst, 1829) from the subfamily Ichneumoninae. *S. gagates* and *T. collaris* species noted here, are reported for the first time from Iran. Both species are representing the first record of two respective genera. Morphological characters of two newly recorded species are briefly described along with brief diagnostic comments and discussion about their distribution.

Key words: *Stilpnus gagates*, *Thyraeella collaris*, Sistan, Iran, new records

Introduction

Ichneumonidae (Hymenoptera), is a worldwide and greatly large family with nearly 60000 extant species in 35 genera in the world (Townes, 1969; Coruh & Ozbek, 2005). The subfamily Cryptinae is the largest subfamily of Ichneumonidae and includes 379 genera and more than 4500 species in the world (Yu & Horstmann, 1997). Most of the species are idiobiont ectoparasitoids on pupae or prepupae of holometabolous insects, while some genera including the koinobiont endoparasitoids (Wahl, 1993). Up to now, about 64 species of Cryptinae have been recorded from Iran (Kolarov & Ghahari 2005; Kolarov & Ghahari 2007; Masnadi & Jussila 2008; Karimpour & Razmi, 2010; Ghahari *et al.*, 2010).

The Subfamily Ichneumoninae is also one of the largest groups of the ichneumonids with several taxonomical problems. The evolution of the group resulted in producing many closely related and weakly differentiated species. Furthermore, discrimination of superspecific taxa is more difficult than separation of species (Rasnitsyn, 1978; Tereshkin, 2004). According to Wahl (1999), 1455 valid genera are known in the Ichneumonidae from which 394 genera belong to the Ichneumoninae. Up to now, about 142 species of Ichneumoninae were recorded from Iran (Kolarov & Ghahari 2005; Kolarov & Ghahari 2008; Ghahari *et al.*, 2010). In this paper we present the new information about occurrence of some species belong to the subfamilies Cyptinae and Ichneumoninae.

Material and Methods

The Ichneumonid specimens were collected from northern part of Sistan and Baluchestan province, during 2010 using net sweeping. All obtained specimens were separated and preserved in 96% ethanol, then dried, pinned, labeled and mounted into collection boxes. Illustrations were made using the Nikon SMZ stereomicroscope equipped with the Sony W100 digital camera. The morphological terminology followed Hanson and Gauld (1995). Specimens were deposited in the insect collection of E.R., University of Zabol.

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Received: 21 Oct. 2011 – Accepted: 29 Dec. 2011

Results and Discussion

Five species of Ichneumonids are recorded from the studies area, of which two species are newly recorded for the Fauna of Iran. All species are listed below alphabetically and new records indicated by an asterisk.

Subfamily Cryptinae

Cryptus inculcator (Linnaeus, 1758)

Material examined: 2♀, Zabol, on *Tamarix* sp., 10-III-2010, Leg. H. Barahoei; 2♂, Dust Muhammad, on *Medicago sativa*, 02-XI-2010, Leg. N. Khajeh; 2♀, Muhammad Abad, on *Medicago sativa*, 07-V-2010, Leg. N. Khajeh.

Distribution in Iran: Tehran, Karaj (Masnadi-Yazdinejad, 2008).

General Distribution: Eastern to Western Palaearctic (Masnadi-Yazdinejad, 2008).

Dichrogaster saharator (Aubert, 1964)

Material examined: 1♀, Muhammad Abad, on *Tamarix* sp., 22-IV-2010, Leg. H. Barahoei; 1♂, Jazinak, on *Medicago sativa*, 05-V-2010, Leg. H. Barahoei; 1♀ and 1♂, Jazinak, on *Medicago sativa*, 06-V-2010, Leg. N. Khajeh.

Distribution in Iran: Zanjan, Tehran, Ardabil, Guilan, Mazandaran, Khuzestan and Fars (Kolarov and Ghahari, 2007).

General Distribution: Algeria, Palestin and Turkey (Kolarov and Ghahari, 2007).

*Stilpnus gagates** (Gravenhorst, 1807) (Fig. 1)

Material examined: 1♂, Zahak, on *Medicago sativa*, 20-VIII-2010, Leg. N. Khajeh.

Diagnosis: Male. Head (Figs. 1A and 1B): Face densely covered with short setae, compound eyes oval and medium size, antennae 22-segmented, first flagellomere longer than second flagellomere, occiput bare, Malar space (distance from tentorial pit to compound eye) long, clypeus covered with long setae, separated from face by tiny groove, mandible large, bidentated, Forewing (Fig. 1F): with long and pentagonal areolet, 2m-cu vein with two bulla. Thorax (Fig. 1D) covered with sternalus in across of mesopleuron lower portion. Mesonotum (Fig. 1C) shiny, smooth, convex, covered with long and sparse setae, notauli impressed and distinct, scutellum convex, covered with long and sparse hairs. Propodeum (Fig. 1E) sparsely covered with long setae, with longitudinal and traverse ridges, divided to upper and lower portions with large central areola. Petiole (Fig. 1G) elongated, longer than other metasomal segments, without Glymma.

Colour: Antennae, mouth parts and legs brown, other parts of body black, wings approximately infumated, venation brown, Body length: 4.5 mm.

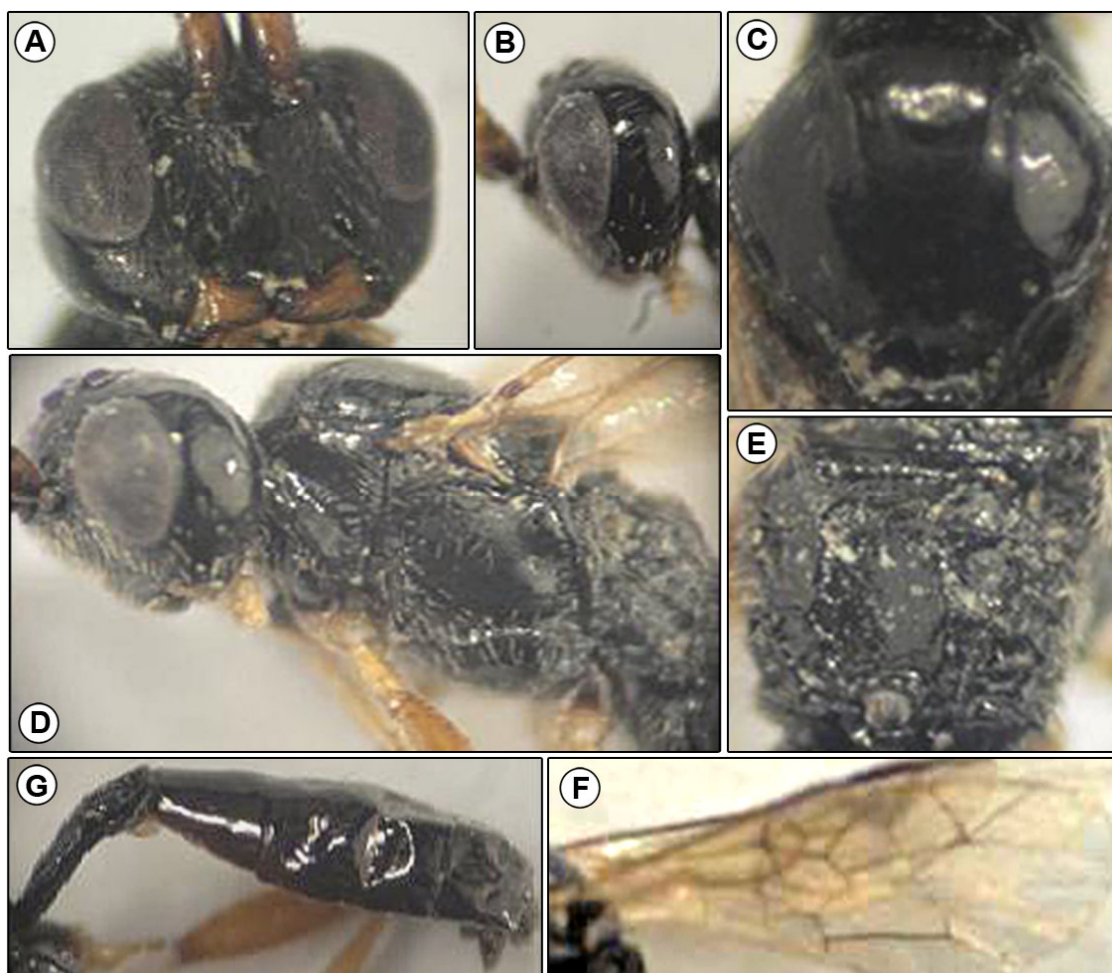


Fig. 1- The external morphology of *Stilpnus gagates* (Gravenhorst); A- Frontal view of head; B- Lateral view of head; C- Mesoscutum; D- Lateral view of thorax; E- Propodeum; F- Forewing; G- Lateral view of metasoma

Subfamily Ichneumoninae

Cratichneumon sp.

Material examined: 1♂, Zahak, on *Medicago sativa*, 07-III-2010, Leg. N. Khajeh.

Distribution in Iran: Sistan and Baluchestan.

*Thyraeella collaris** (Gravenhorst, 1829) (Fig. 2)

Material examined: 4♀, Zahak, on *Medicago sativa*, 27-X-2010, leg. H. Barahoei.

Description: Female. Head (Figs. 2A and 2B): Face densely covered with short setae, compound eyes large, antennae 25–26 segmented, First, second and third flagellomer segments equal in length, occiput bare, Malar space long, clypeus sparsely covered with short setae, not separated from face by groove, mandible bidentate. Forewing (Fig. 2F) with elongated tetragonal areolet, 2m-cu vein with one bulla. Thorax (Fig. 2D) with sternaulus in one-third across of mesopleuron lower portion. Mesonotum (Fig. 2C) shiny, convex, sparsely covered with short setae, notaulices effaced, not visible dorsally, scutellum convex. Propodeum (Fig. 2E) densely covered with long setae, bearing longitudinal and traverse ridges, divided to upper and lower portions, with large central areola. Petiole elongated, shorter than third metasomal segment, without glymma, spiracles located near to basal part of the segment. Ovipositor sheath (Fig. 2G) slightly longer than metasoma, ovipositor sharp and dentate in apical edge.

Colour: head, propodeum, petiole, end of metasoma and ovipositor sheath dark brown to black, antennae, mouth parts, thorax, median part of metasoma and legs brown, wings infumated, venation brown, Body length 6 mm.

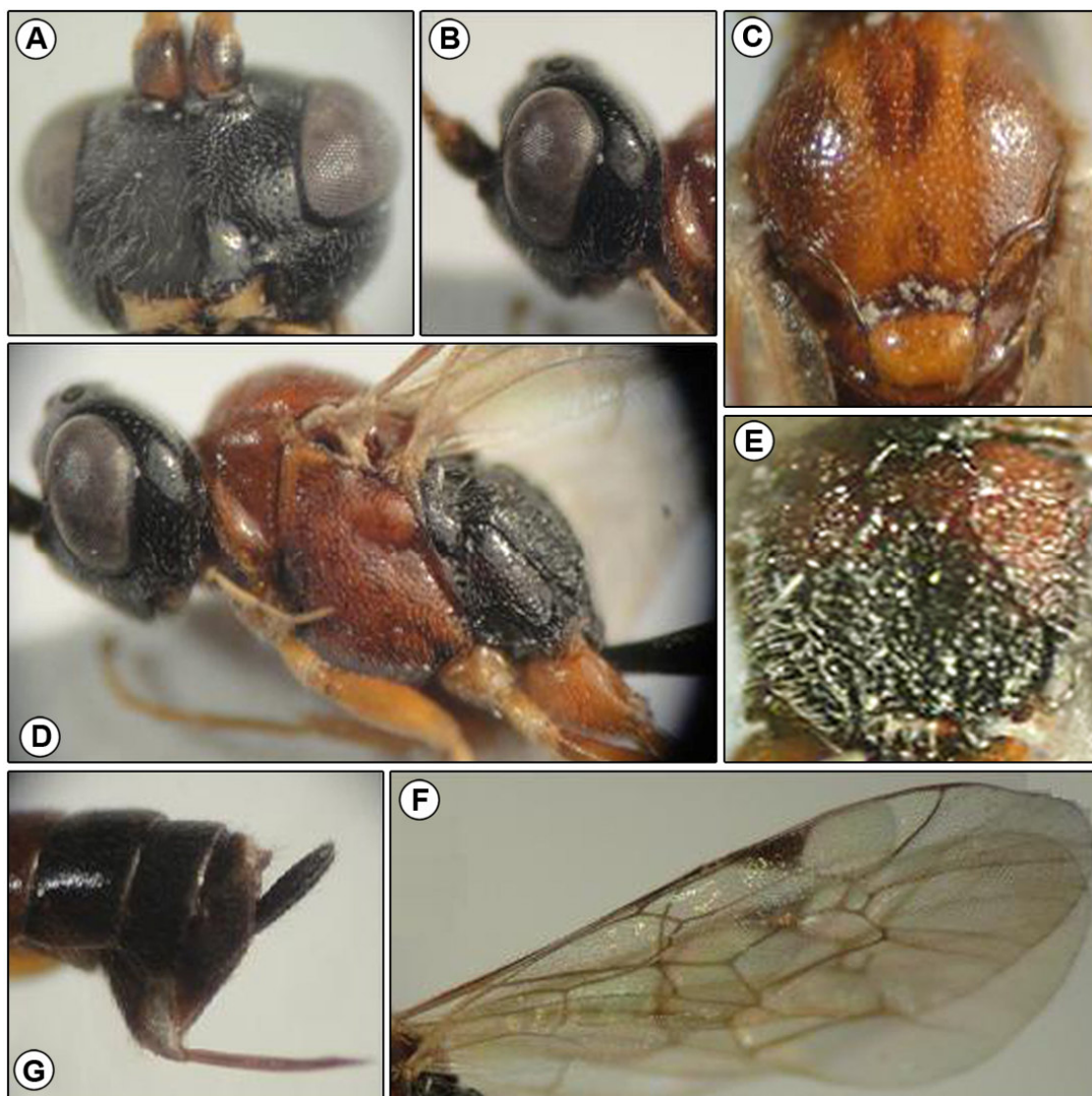


Fig. 2- The external morphology of *Thyraeella collaris* (Gravenhorst): A- Frontal aspect of head; B- Lateral view of head; C- Mesoscutum; D- Lateral view of thorax; E- Propodeum; F- Forewing; G- Lateral view of ovipositor sheath and stylets

The genus *Stilpnus* has distribution in Holarctic, Denmark, Finland, Iceland and Sweden (Riedel & Hansen, 2007) and genus *Thyraeella* Holmgren, 1890 are known from Holarctic and Oriental regions (Wahl, 1999). Both genera are recorded from the first time from Iran. *Stilpnus gagates* has been recorded from Poland (Kazmierczak, 2004). *Thyraeella collaris* Gravenhorst, 1889 reported from Azerbaijan by Aliyev (1999). This species has been recorded from Central Asia (Turkmenia), Southwest Asia, West Europe, the Canary Islands (Kasparyan, 1981; Aliyev, 1999).

Acknowledgements

We are very grateful to Dr. Matthias Reidel (Klinik Fallingbostel, Germany) for identification of specimens. The contributions by E. Rakhshani were partially funded by the grant No. 89-9198, University of Zabol. We are also thankful to Mrs. Nahid Khajeh for her collecting some specimens.

References

- Aliyev, A. A. O. 1999.** Fauna of the Subfamily Ichneumoninae (Hymenoptera, Ichneumonidae) of Azerbaijan With New Records. *Turkish Journal of Zoology*, 23: 1–12.
- Coruh S. and Özbek H. 2005.** New records of Cryptinae (Hymenoptera: Ichneumonidae) from Turkey with some hosts. *Türkiye Entomoloji Derneği*, 29 (3): 183–186.
- Ghahari, H., Jussila, R., Kolarov, J. and Sedivy, J. 2010.** A Contribution to the Ichneumon wasps (Hymenoptera: Ichneumonidae) From the forests of Northern Iran. *Munis Entomology and Zoology* 5(1): 85–89.
- Hanson, P. H. and Gauld, I. D. 1995.** The structure of Hymenoptera. In: Hanson, P. H. and Gauld, I. D. (eds.). *The Hymenoptera of Costa Rica*. Oxford University Press, Oxford. 893 pp.
- Karimpour, Y. and Razmi, M. 2010.** First report of *Cryptus inquisitor* (Hym.: Ichneumonidae) from Iran. *Journal of Entomological Society of Iran*, 29(2): 37–39.
- Kasparyan, D. R. 1981.** Key of insects of European part of USSR, vol. III. part III. Nauka. Leningrad, 688 pp.
- Kazmierczak, T. 2004.** Checklist of Ichneumonidae (Hymenoptera) of Poland *Electronic Journal of Polish Agricultural Universities, Forestry*, 7(2): 1–63.
- Kolarov, J. and Ghahari, H. 2005.** A catalogue of Ichneumonidae (Hymenoptera) from Iran. *Linzer biologische Beiträge* 37: 503–532.
- Kolarov, J. and Ghahari, H. 2007.** A study of the Iranian Ichneumonidae (Hymenoptera): II. Brachycyrtinae and Cryptinae. *Zoology in the Middle East*, 42: 75–78.
- Kolarov, J. and Ghahari, H. 2008.** A study of the Iranian Ichneumonidae (Hymenoptera): III. Ichneumoninae. *Acta entomologica serbica*, 13(1/2): 61–76.
- Masnadi-Yazdinejad, A. and Jussila, R. 2008.** A study to the Iranian Cryptinae (Hymenoptera: Ichneumonidae). *Journal of Entomological Society of Iran*, 28(1): 1–11.
- Rasnitsyn, A. 1978.** Introduction. pp: 1–81, In: *Eastern Palaearctic Ichneumonidae*, Heinrich G.H. (Ed.), Nauka, Leningrad. [in Russian].
- Riedel, M. and Hansen, L. O. 2007.** Ichneumonidae (Hymenoptera) new for the fauna of Norway, Part 3. *Norwegian Journal of Entomology*, 54: 59-64.
- Tereshkin, A. M. 2004.** Illustrated key to the Western Palearctic genera of the subtribe Craticheumonina (sensu Heinrich) and taxonomic notes on European species of *Rugosculpta* Heinrich, 1967 (Hymenoptera: Ichneumonidae: Ichneumoninae: Ichneumonini). *Russian Entomological Journal*, 13(4): 277–293.
- Townes, H. K. 1969.** The genera of Ichneumonidae. Part 1. *Memoirs of the American Entomological Institute*, 11: 1–300.
- Wahl, D. B. 1993.** Family Ichneumonidae. In: Goulet, H. and Huber, J. T. (Eds.), *Hymenoptera of the World: An Identification Guide to Families*. Research Branch Agriculture Canada Publication, 668 pp.
- Wahl, D. B. 1999.** Classification and Systematics of the Ichneumonidae (Hymenoptera). American Entomological Institute. Master List of Ichneumonid Names Bibliography, [http:// iris.biosi.ohio state.edu /catalogs /ichneumonids/](http://iris.biosi.ohio state.edu/catalogs/ichneumonids/)
- Yu, D. S. and Horstmann, K. 1997.** A Catalogue of world Ichneumonidae (Hymenoptera). *Memoirs of the American Entomological Institute*, 58 (1/2): 1–1558.

گزارش جدید از زیرخانواده‌های Ichneumoninae و Cryptinae Kirby 1837 برای Latreille, 1802 (Insecta: Hymenoptera: Ichneumonidae)

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چکیده

پنج گونه از زنبورهای خانواده Ichneumonidae از استان سیستان و بلوچستان گزارش می‌شود که شامل: *Cryptus inculcator* (Linnaeus, 1758)، *Dichrogaster saharator* (Aubert, 1964) و *Stilpnus gagates* (Gravenhorst, 1807) از Ichneumoninae و *Cratichneumon* sp. و *Cryptinae* از زیرخانواده *Thyraeella collaris* (Gravenhorst, 1829) می‌باشند. هر دو گونه نخستین گزارش برای این دو جنس هستند. صفات مورفولوژیک گونه‌هایی که برای اولین بار گزارش می‌شوند، به صورت خلاصه به همراه نکات کلیدی جهت شناسایی ذکر شده و در مورد انتشار گونه‌ها بحث شده است.

واژه‌های کلیدی: *Thyraeella collaris*، *Stilpnus gagates*، سیستان، ایران، گزارش جدید

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تاریخ دریافت مقاله (۹۰/۷/۲۹) - تاریخ پذیرش (۹۰/۱۰/۸)

