NEW CHILEAN ITAMUTON
(HYMENOPTERA: ICHNEUMONIDAE: MESOSTENINI)
REARED FROM ELICURA LITIGATOR
(NEUROPTERA: MYRMELEONTIDAE)

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ABSTRACT

*Itamuton stagnyi* n. sp. attacks pupae of the central Chilean antlion, *Elicura litigatum* Navas. It is the first New World species of Ichneumonidae known to parasitize Myrmeleontidae. *Itamuton stagnyi* n. sp. is described from males and females. It resembles the sympatric *I. rufitibia* (Spinola) but is shorter and stouter in bodily proportions and has less strongly projecting propodeal cristae.

RESUMEN

*Itamuton stagnyi* n. sp. ataca las pupas del mirmeleontido centro-chileno, *Elicur litigator* Navas. Es esta la primera vez que un icneumónido haya sido criado en el Nuevo Mundo, como parasito de Myrmeleontido. *Itamuton stagnyi* n. sp. se asemeja a la especie simpática, *Itamuton rufitibia* (Spinola), pero tiene el cuerpo más corto y robusto y las crestas del propodeo menos proyectantes.

*Itamuton* Porter (1987) ranges through subequatorial South America with species in the Andean Puna (*I. tounesorum* (Porter)), in the Peruvian West Andean slopes and Coastal Desert (*I. occidens* (Porter)), in central and south-central Chile (*I. rufitibia* (Spinola)), and also across the ecotone at the austral end of South America between *Nothofagus* forest and Patagonian Steppe (*I. magallanes* (Porter)).

This genus belongs to the Subtribe Ischnina of the Tribe Mesostenini (Townes 1969). Its diagnostic features include the filiform female antenna; the long malar space (0.6-1.6 as long as basal width of mandible); the little elevated but sharp occipital carina; the dorsally much narrowed areolet; the recilicious 2nd recurrent vein that is outbulged on its upper 0.5; the axillus vein which runs close to the anal margin of its wing; the unarmed lower prepectus; the conspicuous notauli that reach 0.5 or more the mesoscutal length; the prominent and polished groove that descends from the hind coxal base; the more or less traceable basal and apical transverse carinae of the propodeum on which the apical trans-carina reaches far forward medially; the elongate propodeal spiracle; the absence of a lateral tooth at the base of the petiole; and the sparsely setose female 2nd gastric tergite.

*Itamuton stagnyi* provides the 1st host data for its genus and is the only New World ichneumonid known to parasitize Myrmeleontidae. However, most ischnine genera exploit lepidopterous hosts (Porter 1967, 1987), so that *I. stagnyi* may constitute a trophic novelty within its genus. Certainly, the high Andean *I. tounesorum* (Porter) and the subantarctic *I. magallanes* (Porter) inhabit areas where Myrmeleontidae are
unlikely to occur. Furthermore, species of the related genera Phycitiplex and Oecetiplex do parasitize Lepidoptera in such families as Phycitidae and Psychidae.

**Key to the Species of Itamuton**

1. Mesoscumum mat with some dully shining areas, its sculpture consisting of small punctures and of fine wrinkling; malar space 0.9-1.1 as long as basal width of mandible ......................................................... 2

1\'. Mesoscumum highly polished with abundant small and sharp punctures that have at least narrow smooth interspaces; malar space 0.7-1.6 as long as basal width of mandible ......................................................... 3

2. Ovipositor upcurved; temple 0.4-0.5 as long as eye in dorsal view; no red markings on gaster; female flagellum with a white band: female gaster wholly black ................................................. *I. townesorum* (Porter)

2\'. Ovipositor very slightly upcurved; temple 0.2-0.3 as long as eye in dorsal view; gaster with red extensively on at least tergites 1-3; flagellum without a white band; female gaster with white on tergite 4 and those succeeding ................................................................. *I. occidens* (Porter)

3. Flagellum without a white band: ground color of 2nd and following gastric tergites pale red with some brownish suffusion; wings hyaline; malar space of female 1.4-1.6 as long as basal width of mandible, of male 1.1-1.3 as long as basal width of mandible; ovipositor gently upcurved, its nodus high and its tip in profile straight or slightly concave from nodus to apex .................

................................................................. *I. magallanes* (Porter)

3\'. Flagellum with a white band; gastric tergites with ground color black; malar space of female 0.7-0.9 as long as basal width of mandible, of male 0.6-0.7 as long as basal width of mandible; ovipositor straight with a low but distinct nodus and convex in profile between nodus and apex ........................................ 4

4. Malar space in female 0.6-0.7 as long as basal width of mandible; temple in female 0.2-0.3 as long as eye in dorsal view; mesoscumum 0.8-0.9 as long as wide; female propodeum 0.4-0.5 as long as high in lateral view, male propodeum 0.7 as long as high; propodeal crista of female broadly subcuneate and little projecting; female postpetiole 1.7-2.2 as wide apically as long from spiracle to apex; male 2nd gastric tergite stout and gradually widened toward apex, 0.6 as wide apically as long ................................. *I. stangei* n. sp.

4\'. Malar space in female 0.8-0.9 as long as basal width of mandible; temple of female 0.4-0.5 as long as eye in dorsal view; mesoscumum about as long as wide; female propodeum with projecting crista and 0.6-0.7 as long as high, male propodeum 0.8 as long; female postpetiole 1.2-1.4 as wide apically as long from spiracle to apex; male 2nd gastric tergite parallel-sided, slender; 0.3-0.4 as wide apically as long ................................. *I. raftibia* (Spinola)

*Itamuton stangei* Porter, New Species
(Fig. 1, 2)

**Female:** Color: antenna black with weak brown staining and with a ventrally duller and partly interrupted white band on flagellomeres 4-5 and base of 6; head, mesosoma, and gaster black with white markings as follows: narrow band on facial orbit and lower 0.3 of frontal orbit; narrow band on hind orbit except near top and bottom; large but unattached blotch in malar space; small round blotch medially a little before base of mandible; pair of transverse marks on dorsum of pronotal collar; narrow stripe externally on pronotal humerus; much of tegula; triangular blotch on basal angle of scutellum;
broad band on apex of 3rd gastric tergite; very broad band on apical 0.3-0.5 of 4th tergite (even broader laterally); narrower but complete and laterally widened band on apex of 5th tergite: complete, dorsally much narrowed but laterally widened apical band on 6th tergite; and a broad band laterally on 7th tergite: legs black with pale brown to orange-brown on front femur apically, dorso-apically, and over a large area posteriorly, on all of fore tibia; dully on apices of front tarsomeres 1-4; restrictedly near apex of mid femur, extensively and varying to pale orange on much of mid tibia except for the irregularly dusky apex, dully on apices of mid tarsomeres 1-4; and with hind leg shining black on coxae, trochanters, and femur, and duller black on tibia and tarsus as well as with rather prominent pale brown areas toward apex of tarsomeres 1-4; wings infumate.

Length of fore wing: 5.0-6.0 mm. Mesosoma and gaster: short and robust. Flagellum: 1st segment 5.0 as long as deep at apex. Malar space: 0.6-0.7 as long as basal width of mandible. Temple: 0.2-0.3 as long as eye in dorsal view; abruptly receding and a little rounded. Mesoscutum: short and broad, 0.8-0.9 as long as wide; notauli sharp and reaching 0.4-0.6 the length of mesoscutum; surface highly polished with many small to medium sized sharp punctures whose intervals vary from a little to definitely longer than diameter of the punctures. Propodeum: very short and high, only 0.4-0.5 as long as high; basal face steeply declivous in profile; areola much wider than long; cristae broadly subcuneate and not much projecting. First gastric tergite: postpetiolar strongly expanded, 1.7-2.2 as wide at apex as long from spiracle to apex; dorsal longitudinal carinae weak or absent; petiole broad and flat, broader than high in cross-section. Ovipositor: sheathed portion 0.4-0.5 as long as fore wing; tip between nodus and apex with profile distinctly convex (more so than in I. rufitibia).
MALE: Color: antenna black with a white band dorsally on more or less of segments 11-15, without a white spot on scape; head mesosoma, and gaster black with profuse white markings as follows: 1st segment of maxillary palpus; most of basal 0.5 of clypeus; orbits, broadly below and more narrowly dorsal as well as with a break anteriorly at bottom of eye but otherwise extending into most of malar space; broad but medially a little interrupted band on pronotal collar; broad band on humeral margin of pronotum; tegula; subalarum; very large triangular blotch in anterior corner of scutellum that reaches 0.5 length of scutellum laterally; large blotch on and below propodeal cristae; very broad bands on apical 0.3 or more of gastric tergites 4-7; and a large blotch apicad on clasper; legs black with orange to pale brown on much of front femur (especially above and toward apex); fore tibia bright pale orange-brown; and with a little brown staining, especially near apex, on tarsomeres of all legs as well as with the following white: large dorsal and dorso-lateral blotch on fore and mid coxa; ventro-lateral 0.5 or more of fore and mid trochanter; blotch ventrally on fore and mid trochantellus; large dorso-anterior basal blotch on hind coxa; as well as on hind tarsomeres 1 (about apical 0.3 above) and 3-4 (entirely); wings hyaline with faint dusky staining toward apex.

Length of fore wing: 6.3 mm. Flagellum: 1st segment 3.3 as long as deep at apex; with linearly ellipsoid to bacilliform tyloids on segments 13-16 (tyloids mostly follow longitudinal axis of their segments). Malar space: 0.7 as long as basal width of mandible. Temple: 0.5 as long as eye in dorsal view. Propodeum: a little longer and lower than in female but unusually short and high (in comparison to I. rufitibia), about 0.7 as long as high in lateral view; cristae broadly and a little tubercularly cubinulate, a little less projecting than in many males of I. rufitibia; surface behind basal transscarinare a little more coarsely rugose than in I. rufitibia. First gastric tergite: slightly widened apical postpetiole 0.7 as wide apically as long from spiracle to apex. Second gastric tergite: shining but micro-reticulate with small, very faint punctures that emit long and mostly overlapping setae; stout and expanded gradually from base to apex; 0.6 as wide apically as long.


RELATIONSHIPS. This species is similar to the common central Chilean *Itamuton rufitibia* (Spinola), from which it may be distinguished by its much shorter and higher mesosoma, less projecting propodeal cristae, and more robust gaster. *Itamuton stangei* might have originated from the *I. rufitibia* stock either by vicariance or (given its remarkable similarity to the commoner species) by sympatric speciation accompanying a host shift. It is also possible that *I. stangei* represents no more than a host race of *I. rufitibia*.

FIELD NOTES. The type locality is a well watered subandean ravine in the *Precordillera* near Santiago. Its flora includes both xeric elements (e.g., *Acacia*, *Cactaceae*) and mesic to hygrophilic plants (*Litracraea*, *Schinus*, *Peeum*, *Myrtus*, and, at stream-side, *Gunnera*). The plant community at Río Clarillo thus represents a mixture of semidesertic and relict Valdivian taxa. This type of habitat is found in central Chile wherever there are protected sites with permanent water.

Miller and Stange (personal communication) explained that the antlion, *Eilcura litigatia* Navas, abounds in Chile at Río Clarillo and in other localities, from Coquimbo Province on the north to Llanquihue Province in the south. The larva of *Eilcura* is a generalized predator found in all types of situations where the soil is loose and sandy. The antlion larvae make their cocoons wherever they may be upon reaching maturity. The cocoons are camouflaged with soil fragments and situated either partially or wholly embedded in the substrate. *Eilcura* thus offers a host easily accessible for short-ovipos-
itored ichneumonids that attack holometabolous pupae on or in the topmost soil layers. Indeed, Miller and Stange found that some 25% of the *Elicura* pupae collected by them were or had been parasitized. Since numerous moth larvae pupate in the same type of microhabitat as *Elicura*, it is easy to see how *Iamuton stangei* could have switched from ancestral lepidopterous hosts to the more apomorphic exploitation of Neuroptera that pupate on or in the soil.

**SPECIFIC NAME.** For Dr. Lionel A. Stange of the Florida State Department of Agriculture and Consumer Services (Division of Plant Industry at Gainesville).

**DISCUSSION**

*Iamuton stangei* appears to be a sibling species of the much collected *I. rufitibia* (central and south-central Chile and east to the Atlantic Coast in Patagonian Argentina). Its utilization of myrmelontid hosts thus may have evolved recently, assuming that parasitism of Lepidoptera is the plesiomorphic life style among the other *Iamuton* (as is true for the whole Subtribe Ischnina). In contrast, the Old World ischnine genus *Myrmeleonostenus*, which ranges from Mediterranean Europe to Australia, is well known as an antlant parasitoid (Townes 1969, Gauld 1984). *Myrmeleonostenus* forms a well-differentiated complex of species not closely related to *Iamuton* (e.g., *Iamuton* possesses a prominent and polished groove descending from the hind coxal insertion and this characteristic is absent in *Myrmeleonostenus*). *Myrmeleonostenus* has the mesosoma and gaster very long and slender; whereas, in *Iamuton stangei* the gaster is robust and the mesosoma foreshortened. In this way, *I. stangei* might seem better adapted than its Old World ecological equivalent for pupating within glochular antlione cocoons. However, Miller and Stange reported that pupae of *I. stangei* fill only about 0.3 the available space within *Elicura* cocoons parasitized.

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