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The first Hangingfly (Mecoptera: Bittacidae) described from Vietnam

Первая биттацида (Mecoptera: Bittacidae), описанная из Вьетнама

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КЛЮЧЕВЫЕ СЛОВА: Bittacidae, национальный парк Кук Фуонг, биттациды, Mecoptera, Вьетнам.

ABSTRACT. *Bittacus monastyrskiyi* **sp.n.**, the first hangingfly species from Vietnam, is described from Cuc Phuong National Park. A new species differs from other known southeast Asian hangingflies by boldly marked subacute wings, and male ninth tergum divided into truncate dorsal and elongated ventral lobes with black spines. *Bittacus monastyrskiyi* appears similar to *Bittacus flavidus* Huang & Hua of China, and *B. burmanus* Tjeder and *B. malaisei* Tjeder, both of Burma. The male genitalia of the new species is illustrated and photos of the wings and habitat are provided.

РЕЗЮМЕ. Первый представитель биттацид во Вьетнаме — *Bittacus monastyrskiyi,* описан из национального парка Кук Фуонг. Новый вид отличается от от других видов рода из южной Азии явственно пятнистыми заострёнными крыльями, у самца IX тергит разделён на усечённую дорсальную и удлинённую вентральную лопасти с чёрными шипами. *Bittacus monastyrskiyi* **sp.n.** сходен с *Bittacus flavidus* Huang & Hua из Китая, *B. burmanus* Tjeder и *B. malaisei* Tjeder из Бирмы. Приводятся изображения гениталий самца, крыла и фотография местообитания.

Introduction

Hangingflies (Mecoptera: Bittacidae) have been described from North and South America, southern Europe, Africa, Australia, and Asia, with 16 genera and over 130 described species. Hangingflies have been found to occur within Asia from southeastern Russia to southeast Asia to the Indian subcontinent. In his monograph on Indochina Mecoptera Byers [1965] listed 6 species of *Neopanorpa* from Vietnam. Tjeder [1973] added an additional two species of *Neopanorpa* Weele, 1909. No *Bittacus* have been recorded to date occurring in Vietnam or neighboring Laos or Cambodia. A recent field survey of the Mecoptera throughout Vietnam resulted in the discovery of the first *Bittacus* Latreille, 1805 from Vietnam.

Bittacus monastyrskiyi Bicha, 2007, **sp.n.**

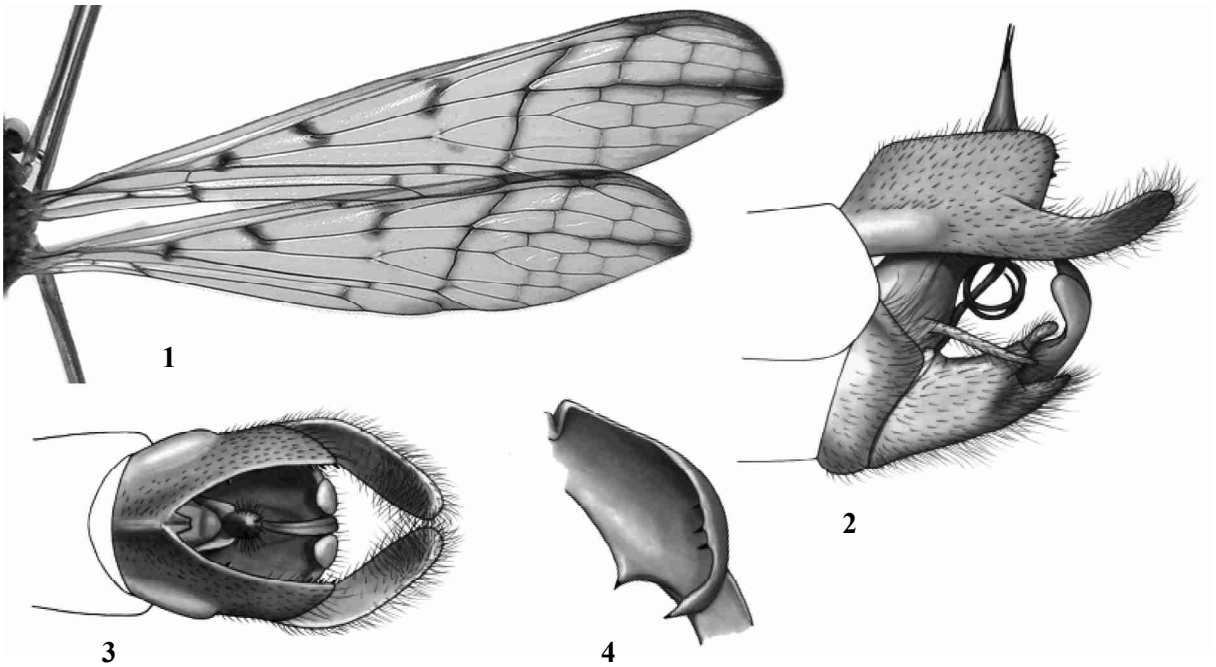
MATERIAL. Holotype, ♂, allotype ♀, and 2 ♂♂, 8 ♀♀ paratypes — VIETNAM, Thanh Hoa province, Cuc Phuong National Park, within several hundred meters of "Ancient Tree," June 16, 2005. Holotype and allotype deposited in California Academy of Science, San Francisco, California, and paratypes in the U.S. Natural History Museum, Washington, D.C., and collection of the author.

DESCRIPTION. Head. Eyes dark brown; vertex, and occiput brown, area between bases of ocelli dark brown; rostrum grading from light brown to amber-brown; maxillary, and labial palps brown. Scape, pedicel, and flagellum light brown; flangellum thicker basally with distinct segments, tapering apically with nearly indistinguishable segments; flagellum plumose with long, dark hairs approximately three times length of the basal flangellar segments; combined length approximately 7–8 mm long.

Thorax. Dorsum dark brown with sordid white medial stripe; pleual surfaces sordid white throughout; pronotal setae inconspicuous, black. Long, fine, black hairs on anteriour surfaces of coxae. Legs yellowish brown, with rows of fine, short, black, apically-directed hairs and a lesser number of longer, black spines; ends of femora and tibiae darkened; tips of tibiae bearing one long and one short, thick, black spur.

Wings (Fig. 1) subacute, strongly tinged with yellowish brown; marked with bold, dark brown band along R_5 broadening from origin to wing edge, along wing edge from pterostigma to R_5, and crossveins from R_{2+3} to Cu_1; an elongate dark brown marking at the origin of R_{2+3}, origin of Rs, 1r-cu_1, and 2 1a-2a; remaining crossveins with diffuse brownish clouding. Thyridium at fork of media conspicuous. Pterostigma nearly hidden among dark brown marking. Apical margin of wing curved evenly backward to end of vein R_5, then abruptly turning basad at nearly right angle and straight to termination of vein M_4. Apical crossvein between Cu_2 and 1A; two pterostigmal crossveins; subcostal crossvein in front wing slightly basad of first fork of Rs; cell R_2 elongate, bordered posteriorly by three complete cells.

Male abdomen. General coloration light brown; terga slightly darkened at segmental junctions; terga 7 and 8 with dark brown circumferential bands. Lobes of tergum 9 (epiandrium) (Figs 2–3) broad, laterally divided, dorsal two-thirds caudally truncate two-thirds length of ventral portion



Figs 1–3. *Bittacus monastyrskiyi* **sp.n.**: 1 — right forewing and hindwing; 2–4 — apex of male abdomen (2 — lateral aspect; 3 — dorsal aspect; 4 — right mesal aspect); 5 — habitat, arrows pointing out several individuals hanging from under vegetation at holotype site.

Рис. 1–3. *Bittacus monastyrskiyi* **sp.n.**: 1 — правые переднее и заднее крылья; 2–4 — вершина брюшка самца (2 — сбоку; 3 — сверху; 4 — справа); 5 — типовое местообитание, стрелки показывают отдельные экземпляры, сидящие на растительности.

of tergum 9, ventral one-third elongated to two, apically-rounded lobes abruptly curved mesad at apical one-third. Tergum 9 dorsal lobes each with three black spines on mesal surface (Fig. 4); ventral lobes each with cluster of one to three black spines on mesal surface approximately one-third and two-thirds length of lobe. Basistyles expanded; dististyles large, bulbous, curved dorsad. Aedeagus coiled elongate filament. Cerci long, slender, pilose. Proctiger greatly elongated, stout at base, projecting dorsally between lobes of ninth tergum, tapering to fine point with long, black hairs at apex.

Female abdomen. Terga 7 and 8 with dark brown bands. Sternum 9 mesally divided; mesocaudal margins each with 6–10 dark brown setae. Tergum 10 cerci pilose.

Body length approximately 20 mm; front wing 25 mm.

Bittacus monastyrskiyi **sp.n.** resembles *Bittacus burmansus* Tjeder, 1973 and *Bittacus malaisei* Tjeder, 1973 of Burma, and *Bittacus flavidus* Huang & Hua, 2005 of China in certain aspects such as the shape of the wing and male ninth tergum. *Bittacus monastyrskiyi* **sp.n.** differs from all of these species by its boldly-marked wings and the Burmese species by the broader and differently shaped lobes of the male ninth tergum [Tjeder, 1973]. While the shape of the male ninth tergum of *Bittacus flavidus* is somewhat similar, it differs in the location and quantity of black spines on the mesal surface of the lobes [Huang & Hua, 2005]. The male of *B. malaisei* is unknown, but the female has weakly patterned wings, which should allow it to be easily differentiated from *B. monastyrskiyi* **sp.n**. The remaining known hangingfly from Southeast Asia, *Bittacus leptocaudus* Byers, 1965, from nearby Thailand, appears unrelated and can be readily differentiated by its immaculate wings and greatly elongate lobes of the ninth tergum [Byers, 1965].

In the field, *B. monastyrskiyi* **sp.n.** was observed hanging by the front legs from the undersides of broad-leafed vegetation approximately 1 m from the ground (Fig. 5) in the deep shade of a mature tropical broadleaf evergreen forest. *Bittacus monastyrskiyi* **sp.n.** was so strikingly visible among the vegetation with its boldly-marked wings that it was initially observed from a trail 10m away. The insects were in such abundance at the type locality in June that at times three or four individuals were observed taking flight and flying a short distance (1 to 2 m) away after one individual was disturbed. Two other Mecoptera, *Neopanorpa vietnamensis* Tjeder, 1976 and *N. baviensis* Cheng, 1953, were observed within 50 m of the holotype site on the top surfaces of vegetation, although in lesser numbers, and in areas with broken sunlight. Cuc Phuong National Park has an extremely rich flora with over 2,000 recorded vascular plant species. The forest is stratified into as many as five layers in some areas. The area species mix and diversity is strongly influenced by the unique limestone karst geology. Many trees in the area have well developed buttress roots in response to the generally shallow soils.

ETYMOLOGY. This species is named in honor of Dr. Aleksandre Monastyrskii, of the Vietnam-Russia Tropical Research Centre, Hanoi for his love and knowledge of the Vietnamese insect fauna.

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