Notes on Hybos Meigen (Diptera: Empididae) in Inner Mongolia with Description of a New Species

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Notes on *Hybos* Meigen (Diptera: Empididae) in Inner Mongolia with description of a new species

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**Abstract**

Only one species of the genus *Hybos* Meigen was previously known to occur in Inner Mongolia. Here 4 species of *Hybos* are reported from this region. One species, *Hybos daqinggouensis* sp. nov., is described as new to science. A key to the known species of *Hybos* from Inner Mongolia is provided.

**Key Words:** dance fly, *Hybos daqinggouensis*, *Hybos grossipes*, *Hybos hubeiensis*, *Hybos wudanganus*, Inner Mongolia

**Resumen**

Sólo una especie del género *Hybos* Meigen se conocía anteriormente de estar presente en el Interior de Mongolia. Aquí se informa de 4 especies de *Hybos*, incluyendo una especie nueva de esta región. Se describe e ilustra la nueva especie, *Hybos daqinggouensis* sp. nov. Se presenta una clave de las especies conocidas del género *Hybos* en el Interior de Mongolia.

**Palabras Clave:** mosca de la danza, *Hybos daqinggouensis*, *Hybos grossipes*, *Hybos hubeiensis*, *Hybos wudanganus*, Interior de Mongolia

**Results**

**Genus *Hybos* Meigen, 1803**

**DIAGNOSIS**

Large to middle-sized. Eyes usually with upper facets enlarged; eyes narrowly but distinctly separated on face, not virtually contiguous. Proboscis strong, spinose, directed forward; labellum constricted for piercing, without pseudotracheae. Palpus slender, nearly as long as proboscis. Rs rather short (nearly as long as distance between humeral crossvein and extreme base of Rs); anal cell longer than cell bm; anal cell produced posteroapically, inner angle formed between CuA2 and A1 strongly acute with CuA2 usually distinctly curved; basal portion of M (separating basal cells) distinct. Legs strongly bristled. Hind femur distinctly to strongly swollen, with spinose ventral setae (Chvála 1983; Yang & Yang 2004).

**Materials and Methods**

Type specimens are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing. Morphological terminology generally follows Cumming & Wood (2009). The following abbreviations are used: acr = acrostichal seta(e), ad = anterodorsal seta(e), av = anteroventral seta(e), dc = dorsocentral seta(e), npl = notopleural seta(e), oc = ocellar seta(e), pd = posterodorsal seta(e), ppn = postpronotal seta(e), prsc = prescutellar seta(e), psa = postalar seta(e), pv = posteroventral seta(e), sc = scutellar seta(e).

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Key to species (males) of *Hybos* from Inner Mongolia

1. Hind tibia without ad at middle; right surstylus not furcated ................................................................. 2

   — Hind tibia with 2 ad at middle; right surstylus irregularly furcated (Yang & Yang 2004, Fig. 279) .................. *H. hubeiensis* Yang & Yang

2. First flagellomere shorter than scape and pedicel combined; hypandrium not as below ............................. 3

   — First flagellomere elongated, slightly longer than scape and pedicel combined; hypandrium with very short lateral process at middle (Fig. 4) ............................................................... *H. daqinggouensis* sp. nov.

3. Hind coxa with 3 spinose anterior setae apically; right surstylus short and wide (Yang & Yang 2004, Fig. 257) ....... *H. grossipes* (Linnaeus)

   — Hind coxa without spinose anterior setae; right surstylus long and narrow (Yang & Yang 2004, Fig. 404) ............ *H. wudanganus* Yang & Yang

1. *Hybos daqinggouensis* sp. nov. (Figs. 1-4)

**DIAGNOSIS**

First flagellomere elongate, slightly longer than scape and pedicel combined, without dorsal setula. Legs entirely black. Mid tibia with 2 ad; apically with 1 av and 1 pv long hair-like and apically curved. Acrr irregularly quadriseriate. Hypandrium with short lateral process at middle, apically without long setae.

**DESCRIPTION**

Male. Body length 3.6-3.9 mm, wing length 3.0-3.5 mm.

*Head.* Black with gray pollinosity. Eyes contiguous on frons, brownish yellow, with distinctly enlarged upper facets. Setulae and setae on head black except postero-ventral setulae yellow; ocellar tubercle distinct, with 2 long oc and 2 short posterior setulae. Antenna black; scape without setulae, pedicel with circle of subapical setulae; first flagellomere elongated, slightly longer than scape and pedicel combined, without dorsal setula; arista distinctly longer than basal 3 antennal segments, pubescent except apical 1/4 or so thin and bare. Probosics slightly shorter than head, blackish or black. Palpus black, with 3 ventral setulae.

*Thorax.* Black with gray pollinosity. Setulae and setae on thorax black, setulae on scutum short and rather sparse; ppn absent, 2 npl (posterior npl long), irregularly quadriseriate acr, uniseriate hair-like dc nearly as long as acr, 1 long prsc, 1 psa slightly shorter than prsc; scutellum with 8 or 10 short marginal setulae (2 setulae between sc) and 2 long sc. Legs entirely black. Setulae on legs brown or brownish, setae black. Hind coxa apically with 2-3 spinose anterior setae. Fore femur 1.2 times and hind femur 2.7 times as wide as mid femur. Fore and mid femora each with row of very long, thin pv. Hind femur with 2-3 long, thin preapical ad, with about 3 rows of spinose ventral setae on tubercles (av relatively long, only 2-3 pv located at base). Fore and mid tibiae and tarsomere 1 with some long setulae. Fore tibia with 2 weak av; apically with 1 short av. Mid tibia with 2 ad; apically with 1 av and 1 pv, very long and thin (av nearly as long as tarsomere 1). Hind tibia with row of 6-7 long ad and 8-9 long pd setulae; apically with 1 long erect subapical pd. Hind tarsomeres 1-2 with several short ventral spines. Wing nearly hyaline, slightly tinged grayish; stigma long, dark brown; veins dark brown, R4+5 and M weakly divergent apically. Squama brownish yellow with yellow setulae. Halter dark yellow except base brown and knob pale yellow.

*Abdomen.* Weakly or strongly curved downwards, subshiny black with pale gray pollinosity; hypopygium weakly swollen. Setulae and setae on abdomen dark yellow except hypopygium with some black setae.

Male genitalia (Figs. 1-4). Left epandrial lamella slightly longer than right epandrial lamella, with weakly convex inner margin near middle; left surstylus long and thick, with short basal process. Right epandrial lamella with concave inner margin near middle; right surstylus rather short and wide, with apical margin weakly incised. Hypandrium much longer than wide, deeply cleft with right lobe much shorter and apically pointed; left lobe rounded apically. Long setae on hypandrium lacking.

Female. Body length 3.6-3.9 mm, wing length 3.6-3.9 mm. Similar to male, pv on fore and mid femora shorter. Fore and mid tibiae and tarsomere 1 without long setulae.

Figs. 1-4. *Hybos daqinggouensis* sp. nov. (male). 1. Genitalia, dorsal view; 2. right surstylus; 3. left surstylus; 4. hypandrium, ventral view. Abbreviations: cer = cercus; lepn = left epandrial lamella; lsur = left surstylus; repn = right epandrial lamella; rsur = right surstylus. Scale bar = 0.1 mm.
H. grossipes, the first flagellomere is shorter than 1/3 as long as outer lateral process (Yang & Yang 2004; Shamshev et al. 2015).

ETYMOLOGY
The specific name refers to the type locality Daqinggou.

2. **Hybos grossipes** (Linnaeus, 1767)

*Musca grossipes* Linnaeus, 1767: 988. Type locality:” Europa”.

MATERIAL
CHINA. Inner Mongolia: 3 ♂ ♂, Erdos, Dongsheng (E 109° 45' 7" N 39° 47' 55"), 7.VIII.2006, Maoling Sheng (CAU); 2 ♂ ♂, 8 ♀ ♀, same data as holotype (CAU).

DISTRIBUTION
China (Inner Mongolia, Gansu, Ningxia, Henan, Hubei).

REMARKS
This species was described in Hubei by Yang & Yang (1991) and also known to occur in Gansu and Henan (Yang & Yang 2004). Li & Yang (2009) recorded it from Ningxia.

4. **Hybos wudanganus** Yang & Yang, 1991

*Hybos wudanganus* Yang & Yang, 1991: 5. Type locality: Hubei, Wudang Mountain.

MATERIAL
CHINA. Inner Mongolia: 2 ♂ ♂, Erdos, Dongsheng (E 109° 45' 7" N 39° 47' 55"), 7.VIII.2006, Maoling Sheng (CAU).

DISTRIBUTION
China (Inner Mongolia, Ningxia, Henan, Hubei).

REMARKS
This species was described by Yang & Yang (1991) from Hubei and also known to occur in Henan (Yang & Yang 2004). Li & Yang (2009) recorded it from Ningxia. It is somewhat similar to *H. grossipes*, but may be separated from the latter by the hind coxa lacking spinose anterior setae and right surstylus long and narrow (Yang & Yang 2004).

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