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SIX NEW SPECIES OF HYDROPTILA (TRICHOPTERA: HYDROPTILIDAE) FROM CHINA

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Abstract. The new species *Hydroptila parapiculata*, *H.harpeodes*, *H.cornea*, *H.furcilla*, *H.longifilis* and *H.reducta* are described and figured.

Specimens were collected from southeastern and central parts of China by a joint expeditionary team from Nanjing Agricultural University, PRC, and Clemson University, USA, in 1990. Identification of this collection brings Chinese *Hydroptila* species to nineteen. Type specimens are deposited in the Insect collection of Nanjing Agricultural University.

Hydroptila parapiculata n.sp. (Fig. 1)

Length of anterior wing 2,1 mm. Antenna of male with 30 segments. - Male genitalia: Dorsum 9 produced posteriorly at centre in a triangular lobe, venter of 9 twice as long as the thickness of the segment, lower lateral lobes short and blunt. Tergum 10 about two times as long as wide with deep apicomeral excision. Inferior appendages slender with apices truncate in side view; in ventral view, appendages diverge, very stout at base, abruptly constricted at one-fourth distance from base, then tapering to a narrow tip. Subgenital process broad, slightly projected mesally. Aedeagus slender, titillator short, strongly circling segment once at base. - Diagnosis: This new species from south central China is a member of *pulchricornis* group. It is very close to *H.triangularis* Wells & Dudgeon 1990 from Hong Kong in the similar shapes of segment 9 and inferior appendages, it differs from the latter in: 1. venter of 9 very long, almost two times as long as its posterior height; 2. tergum 10 with deep apico-mesal excision, and in 3. subgenital

process not produced mesally in a long spine and 4. the titillator of aedeagus much more slender and shorter.

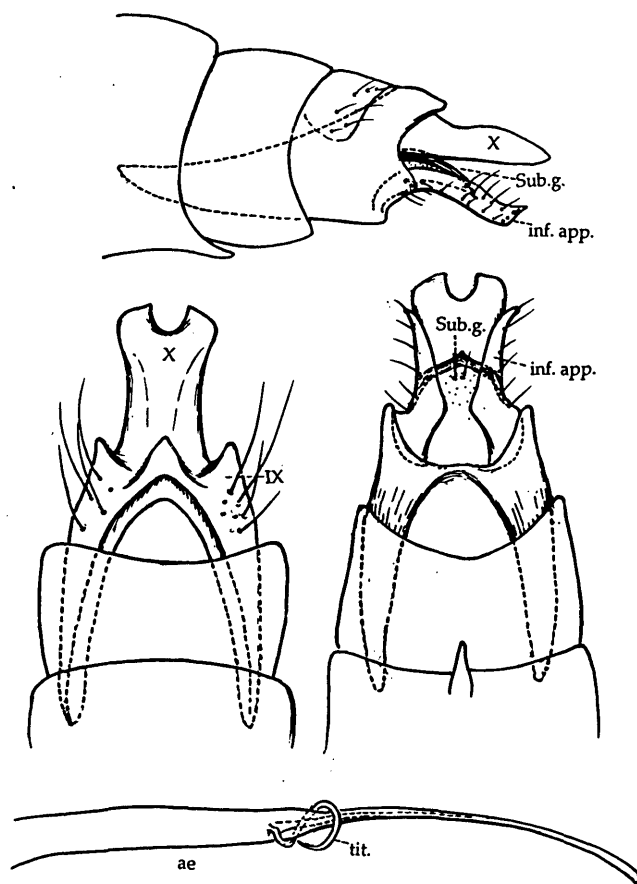
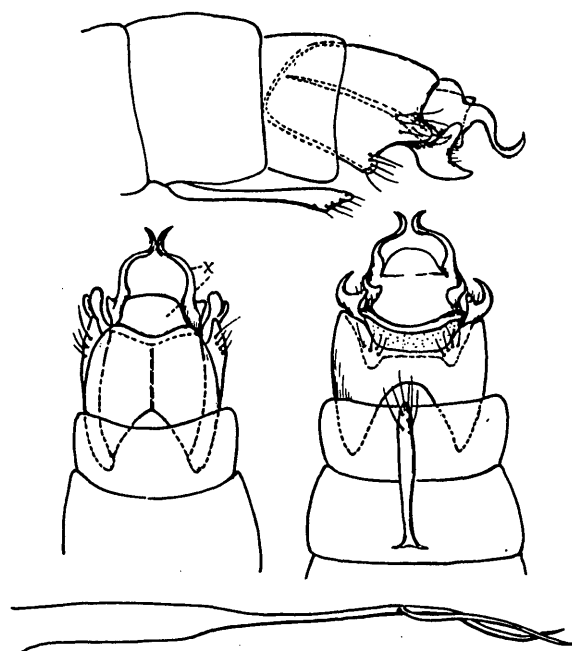
Holotype ♂: Sichuan, E-mei Mountain, Yu-jia River, Jie-tuo bridge, 2.7.1990, leg. J.C.Morse. Paratypes: 2♂, same data as holotype; 1♂ from Sichuan, Jiang-jin county, Simian Mountain, dam of Da-hong lake, 1000m, 5.7.1990, leg. J.C.Morse; 2♂ from Anhui, Xi-xian county, Feng-huang village, Feng-zi River, 116m, 24.5.1990, leg. L.Yang; 1♂ from Fujian, Shao-wu, Nan-ban-qiao village, Jiao-xi stream, 40 km SW of Shao-wu, 420m, 2.6.1990, leg. J.C.Morse, L.Yang & C.Sun.

Distribution: Southeast and central China.

Hydroptila harpeodes n.sp. (Fig. 2)

Length of anterior wing 2,2 mm. Antenna of male with 31 segments. - Male genitalia: Segment 9 short cylindrical in lateral view, posterior margin of dorsum 9 slightly excised, lower lateral lobes short and rounded. Tergum 10 complex, mesal portion transparent, semi-circular lobe, twice as wide as long; lateral portions produced in a pair of long processes, strongly curved ventro-mesad with each apex slightly dilated and recurved upward. Inferior appendage short, about as long as wide with bilobed apex in lateral view. Subgenital process short, sub-trapezoid. Aedeagus slender, titillator sinuately stretching to the tip of aedeagus. - Diagnosis: This species from southeast China is possibly a member of *tineoides* group, somehow similar to *H.rono* Ross 1941 from North America in the shape of segment 9, tergum 10 and in the shape of aedeagus. It differs from it in 1. lateral process of tergum 10 much longer, 2. inferior appendages sub-triangular, each with two apical lobes identical in size in lateral view, and in 3. titillator not circling the segment.

Holotype ♂: Fujian, Cong-an City, 29 km N of Cong-an, 408 km maker, 29.5.1990, leg. J.C.Morse & L.Yang. Paratypes: 2♂, same data as holotype; 1♂ from Fujian, Jiu-qu stream, 30.5.1990, 230m, leg. J.C.Morse, Liu & Wang; 2♂ from Anhui, Jin-xian, Song-cun, Ding-xi River, 33 km E of Jin-xian, 120m, 8.6.1990, leg. J.C.Morse, C.Sun & L.Yang; 1♂ from Jiangxi, Guixi county, Xi-qi River, 59 km SE of Gulxi, 210m, 5.6.1990, leg. L.Yang. - Distribution: Southeastern China.

1. *Hydroptila parapiculata*, sp. nov.2. *Hydroptila harpeodes*, sp. nov.

Hydroptila cornea n.sp. (Fig. 3)

Length of anterior wing 2,2 mm. Antenna of male with 31 segments. - Male genitalia: Anterior end of segment 9 projecting forward in blunt angle, lower postero-lateral lobes broadly rounded at apices in lateral view. Mesal lobe of tergum 10 short, turned upward; each caudo-lateral angle of 10 produced into a long, horn-like spine, divergent in dorsal view, strongly curved downward in side view. Inferior appendages concave dorso-mesally, about as long as tergum 10, enlarged at distal half with apical margin obliquely truncate in lateral view. Subgenital process represented as a pair of highly sclerotized triangular plates which connect with each other at base by a short, narrow bridge; each plate with meso-apical angle produced in spine-like process. Distal part of aedeagus dilated then abruptly narrowed to a hook-shaped apex, titillator absent. - Diagnosis: This species is somewhat similar to some species of *tineoides* group. Tergum 10 falls in the form of the previous new species *H.harpeodes*, but differs in having caudo-lateral angles produced into a pair of divergent, horn-like spines; aedeagus generally similar to *H.alabama* from North America but differs in absence of titillator; inferior appendages simple rectangular which differ from all the present species within this group.

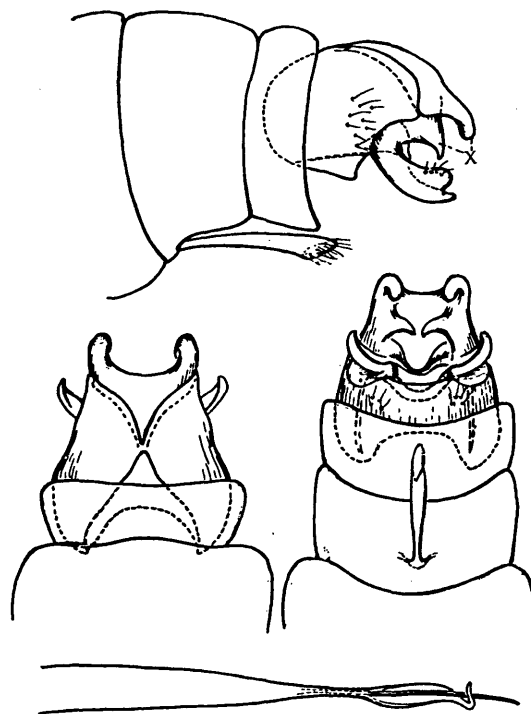
Holotype ♂: Sichuan, Ping-wu county, 19 km E of Ping-wu, tributary of Fu-jiang River, 1090m, 27.6.1990, leg.J.C.Morse. Paratypes: 2♂ same data as holotype; 35♂ from Sichuan, E-mei Mountain, Yu-jia River, Jie-tuo Bridge, 2.7.1990, leg.J.C.Morse. - Distribution: South central China.

3. *Hydroptila cornea*, sp. nov.**Hydroptila furcilla** n.sp. (Fig. 4)

Length of anterior wing 1,9 mm. Antenna of male with 26 segments. - Male genitalia: Anterior end of segment 9 rounded in lateral view, lower postero-lateral lobes of 9 absent. Tergum composed by two parts, upper part produced into a pair of long, papilla-like processes; lower part appearing as a pair of forks in ventral view within each process triangular, directed mesad in lateral view. Inferior appendages rectangular lobes, concave dorsad, nearly three times as long as wide, slightly excised apically in lateral view.

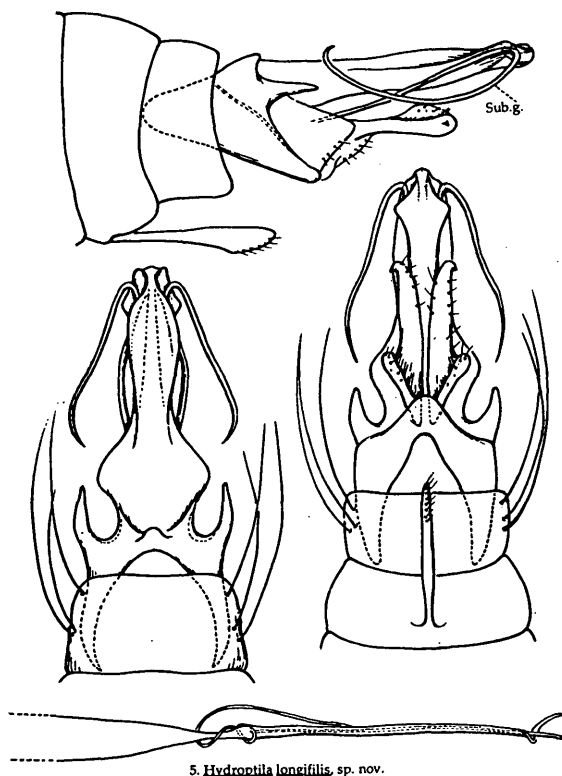
Subgenital process narrow band-like, strongly constricted in mesal portion in ventral view. Distal part of aedeagus dilated then abruptly narrowed to a hook-shaped apex, titillator absent. - Diagnosis: This species is similar to the previous new species *H.cornea*, but differs from it in: 1. tergum 10 bearing a pair of spine-like ventral processes, 2. subgenital processes band-like, strongly constricted in mesal portion, 3. inferior appendages slightly excised apically.

Holotype ♂: Anhui, Jin-xian, Song-cun,, Ding-xi River, 33 km E of Jin-xian, 120m, 8.6.1990, leg.J.C.Morse, C.Sun & L.Yang. Paratypes: 1♂, same data as holotype; 14♂ from Sichuan, Ping-wu-xian, 19 km E of Ping-wu, tributary of Fu-jiang River, 1090m, 27.6.1990, leg.J.C.Morse; 9♂ from Fujian, Cong-an City, 29 km N of Cong-an, 408 km maker, 29.5.1990, leg.J.C.Morse & L.Yang. - Distribution: Southeastern China.

4. *Hydroptila furcilla*, sp. nov.**Hydroptila longifilis** n.sp. (Fig. 5)

Length of anterior wing 2,5 mm. Antenna of male with 28 segments. - Male genitalia: Segment 9 triangular in lateral view, dorso-lateral process of 9 at least three times as long as its basal width, acute at apex. Tergum 10 elongate, about 1,5 times as long as 9; broad at base, distal portion abruptly narrowed and thickened with deep grooves on either side, upper layer of distal 10 elongate elliptical, lower layer of 10 strongly produced apico-laterally. Subgenital processes very slender, setting in the lateral grooves of 10, curved back in 180 degrees under the apex of 10 then roundly curved upward. Inferior appendages large triangular at base, distal portions enlarged in apico-mesal lobes and turned upward, each with a tiny spine on its outside of apex in lateral view; in ventral view, generally club-like with apices hooked outward. Distal portion of aedeagus rapidly narrowed thread-like; titillator circling segment at base two times then closely appressed to it, apex of titillator hook-like. - Diagnosis: This species is clearly a member of *H.occulata* group, mostly close to *H.sanghala* Schmid 1960 from Pakistan but differs from it in: 1. tergum 10 much thickened, forming two layers; 2. subgenital processes curved backward at about the middle in 180 degrees rather than less than 90 degrees; 3. apical portion of inferior appendages enlarged, basal portion broad triangular.

Holotype ♂: Sichuan, Pingwu county, 19 km E of Pingwu, tributary of Fujiang River, 1090m, 27.6.1990, leg. J.C. Morse & L. Yang. Paratypes: 2♂, same data as holotype. - Distribution: South central China.



5. *Hydroptila longifilis*, sp. nov.

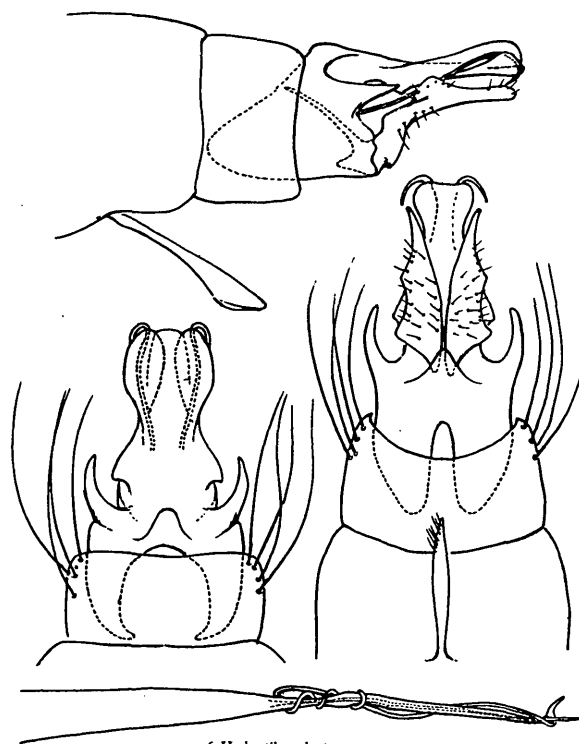
***Hydroptila reducta* n.sp. (Fig. 6)**

Length of anterior wing 3,2 mm. Antenna of male with 32 segments. - Male genitalia: Segment 9 triangular, tapering anteriorly to rounded end in lateral view, dorso-lateral process of 9 elongate, acute at apex, postero-dorsal margin strongly produced at centre. Tergum 10 broad, about 1,2 times as long as that of 9, constricted at middle in dorsal view; distal portion of 10 two-layered as in *H. longifilis*, upper layer broad, with lateral margins produced in large side lobe, lower portion produced apico-laterally but not as broad as upper portion. Subgenital processes slender, a little longer than 10, hooked at apex. Inferior appendages club-like, with rounded apices almost reaching to the tip of 10, mesal margins produced at mid-distance in triangular processes in lateral view; in ventral view, broad at base, distal half tapering to narrow apices. Distal portion of aedeagus rapidly narrowed; titillator circling the segment at base three times then closely appressed to it with apex abruptly constricted and hooked. - Diagnosis: This species is also clearly a member of *H. occulta* group, mostly close to the previous new species *H. longifilis*, but mainly differs from it in: 1. tergum 10 very broad in distal half, 2. subgenital processes much shorter, reaching only a little beyond the apex of 10, and 3. in inferior appendages with mesal edges produced in mid distance in triangular lobes, base of appendages not extremely enlarged in triangular masses in side view.

Holotype ♂: Sichuan, Pingwu county, 19 km E of Pingwu, tributary of Fujiang River, 1090m, 27.6.1990, leg. J.C. Morse & L. Yang. - Distribution: South central China.

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