

The Genus *Nephus* MULSANT (Coleoptera, Coccinellidae) of China

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Abstract Three subgenera and eleven species of the genus *Nephus* MULSANT from China are taxonomically studied. Two species are described as new to science. One species is recorded for the first time in China. Keys to the subgenera and species of the genus *Nephus* are given.

Key Words: Coleoptera, Coccinellidae, Scymnini, *Nephus*.

The genus *Nephus* MULSANT belongs to the tribe Scymnini of the family Coccinellidae. Its distribution is worldwide, and about 200 species have been known in the world up to the present. Some of them have been reported to play an important role in regulating the population of mealybugs infesting citrus trees, coconut trees, etc.

All the type specimens to be designated in this paper are deposited in the South China Agricultural University, Guangzhou.

Genus *Nephus* MULSANT, 1846

Scymnus (*Nephus*) MULSANT, 1846, 237; 1850, 958.

Nephus: MADER, 1924, 8; CHAPIN, 1965, 200; SASAJI, 1971, 172; GORDON, 1976, 276; PANG & MAO, 1979, 49; PANG & GORDON, 1986, 193.

Type species: *Sphaeridium quadrimaculatum* HERBST, 1783 (by subsequent designation of KORSCHESKY, 1931).

The genus *Nephus* bears 8–11 segmented antenna, basal two segments of which are fused or not. Prosternum without intercoxal carinae or with short carinae only adjacent to coxal cavity. Postcoxal line on 1st abdominal sternum incomplete, nearly reaching lateral margin, apical end of postcoxal line either parallel to hind margin of sternum or recurved toward basal margin. Tarsus trimerous. Genitalia simple, median piece of tegmen symmetrical or asymmetrical.

The genus *Nephus* is divided into 8 subgenera: *Nephus* (*Nephus*) MULSANT, 1846, *Sidis* MULSANT, 1850, *Scymnobius* CASEY, 1899, *Parascymnus* CHAPIN, 1962, *Depressoscymnus* GORDON, 1976, *Turboscymnus* GORDON, 1976, *Bipunctatus* FURSCH, 1987, and *Geminisipho* FURSCH, 1987. The former two and the latter two subgenera are distributed in the Palearctic and Oriental Regions. The other four subgenera are found in the Western Hemisphere.

Key to the Subgenera of *Nephus* of China

- 1 (4) Postcoxal line not extending onto basal half of sternum, gently curved forward apically.
- 2 (3) Antenna 10-segmented *Geminosopho* FURSCH.
- 3 (2) Antenna 11-segmented *Nephus* MULSANT.
- 4 (1) Postcoxal line strongly curved forward along lateral border of 1st abdominal sternum, extending onto basal half of sternum *Sidis* MULSANT.

Subgenus *Geminosopho* FURSCH, 1987

Geminosopho FURSCH, 1987, 66.

Type species: *Scymnus (Nephus) bielawskii* FURSCH, 1965 (by original designation).

Antenna 10-segmented, large basal segment undivided. Postcoxal line on 1st abdominal sternum curved forward apically. Apex of siphon forked.

Key to the Species of *Nephus (Geminosopho)* of China

- 1 (2) Elytron black with apical 1/3 yellow, without any spot
..... *N. dilepismoides* PANG et PU.
- 2 (1) Elytron black with light spot and narrowly light apex.
- 3 (8) Elytral spot rather large, longitudinal, anterior border of spot extending beyond the middle of elytron.
- 4 (5) Median piece of tegmen slightly asymmetrical; apex of siphon without any appendix *N. patagiatus* (LEWIS).
- 5 (4) Median piece of tegmen strongly asymmetrical.
- 6 (7) Siphonal apex with a long arm-like appendix; postcoxal line extending to 3/4 length of 1st abdominal sternum *N. koltzei* (WEISE).
- 7 (6) Siphonal apex with a short lance-like appendix; postcoxal line almost extending to hind margin of 1st abdominal sternum
..... *N. dichosiphonicus* sp. nov.
- 8 (3) Elytral spot usually small, anterior border of spot not extending beyond the middle of elytron.
- 9 (10) Pronotum black with slightly broad light lateral margin; siphonal apex with two wing-like appendix, and not bent outward. *N. triblulus* sp. nov.
- 10 (9) Pronotum almost black; siphonal apex distinctly bent outward, with a very short lance-like appendix *N. klapperichi* (MADER).

1. *Nephus (Geminosopho) dilepismoides* PANG et PU

Nephus dilepismoides PANG et PU, 1988, 240.

Nephus ancyroides PANG et PU, 1988, 239, *Syn. nov.*

Distribution. China (Guangdong, Guangxi, Fujian, Taiwan).

Specimens examined. [Guangxi]: 1 ♂ (holotype), Nanning, 4-VIII-1985; 1 ♀ (allotype), Nanning, 6-VIII-1985; 1 ♂ (holotype of *N. ancyroides*), Nanning, 1 ♂ (paratype of *N. ancyroides*), Nanning, 4-VIII-1985; 1 ♂, Nanning, 6-VIII-1985; 5 ♂♂, 3 ♀♀, Guiling, 23-IV-1987, PANG Xiongfei leg.; 1 ♂, Nanning, 5-VIII-1985, PU Tianshen leg. [Fujian]: 1 ♂, 2 ♀♀ (paratypes), Fuzhou, VIII-1984, PANG Xiongfei leg.; 6 ♀♀, Fuzhou, 18-IX-1979, HUANG Bangkan leg.; 1 ♂, Fuzhou, X-1979, without collector. [Guangdong]: 1 ♂, 1 ♀, Zhaoqing, 16-V-1989; Guangzhou: 5 ♂♂, 5 ♀♀, 21-VII-1990, REN Shunxiang leg. [Taiwan]: 2 ♂♂, 3 ♀♀, 4-III-1977, KLAPPERICH leg.

Remarks. The siphonal apex with two wing-like appendix of *Nephus ancyroides* is identical with that of *Nephus dilepismoides*, and not anchor-form. Therefore, *N. ancyroides* is a junior synonym of *N. dilepismoides*.

2. *Nephus (Geminosipho) patagiatus* (LEWIS)

Scymnus patagiatus LEWIS, 1896, 39.

Scymnus (Scymnus) patagiatus: MADER, 1955, 939; NAKANE, 1963, 208.

Scymnus (Nephus) patagiatus: BIELAWSKI, 1957, 73; MIYATAKE, 1959, 139; KAMIYA, 1961, 209; 1965, 104.

Nephus patagiatus: SASAJI, 1971, 129; WEI *et al.*, 1985, 71.

Nephus (Geminosipho) patagiatus: FURSCH, 1990, 33; KUZNETSOV & REN, 1991, 9.

Distribution. China (Shaanxi, Taiwan); Japan; Vietnam.

Specimens examined. [Shaanxi]: 3 ♂♂, Mei County, 1982 (without collector).

3. *Nephus (Geminosipho) koltzei* (WEISE)

Nephus koltzei WEISE, 1887, 238; PANG & MAO, 1979, 50.

Scymnus (Nephus) koltzei: MADER, 1955, 952; FURSCH, 1965, 191.

Nephus (Geminosipho) koltzei: FURSCH, 1987, 68.

Distribution. China (Beijing, Hebei, Liaoning, Henan, Sichuan, Guizhou, Guangxi); Siberia.

Specimens examined. [Liaoning]: 1 ♂, Shenyang, V-1987. [Guizhou]: 2 ♂♂, Guiyang, 19-VIII-1987, PANG Xiongfei leg.

4. *Nephus (Geminosipho) dichosiphonicus* sp. nov.

Length 1.7–1.8 mm, width 1.2–1.3 mm.

Form oval in outline, moderately convex. dorsal pubescence white. Head black with mouthparts brown. Pronotum black with anterior margin narrowly reddish brown. Elytron black with a red oval spot, situated between basal 2/7 and apical 1/7, apex narrowly yellow (Fig. 1 A). Venter black except for hypomeron reddish brown. Legs dark brown with tibiae and tarsi yellowish brown.

Punctuation on head fine, separated by about 1.5 times a diameter; punctures on pronotum like those on head; elytron with coarse punctures, separated by about a diameter. Postcoxal line incomplete, gently arched, extending to the hind margin of 1st abdominal sternum and distinctly curved basad; area surrounded by postcoxal line sparsely and coarsely punctured (Fig. 1 C).

Male genitalia:— Siphon long, slender, with the basal half semicircularly curved; siphonal capsule with long inner process and indistinct outer process; siphonal apex with a short sword-like appendix (Fig. 1 D–E). Lateral lobes of tegmen slightly shorter than median piece (Fig. 1 F–G).

Holotype: ♂, No. 850210, Chishui County, Guizhou, China, 20–IX–1985, REN Shunxiang leg. Paratypes: 2 ♂♂, Zhong County, Sichuan, China, 23–VIII–1989, REN Shunxiang leg.

Remarks. This species is similar to *Nephus (Geminosisipho) koltzei* (WEISE), but is easily distinguished from the latter by the short sword-like appendix of siphonal apex. It is also related to *N. (Bipunctatus) macer* FURSCH, 1992, in body coloration and siphonal apex, but this new species is oval in form and has the lateral lobes of

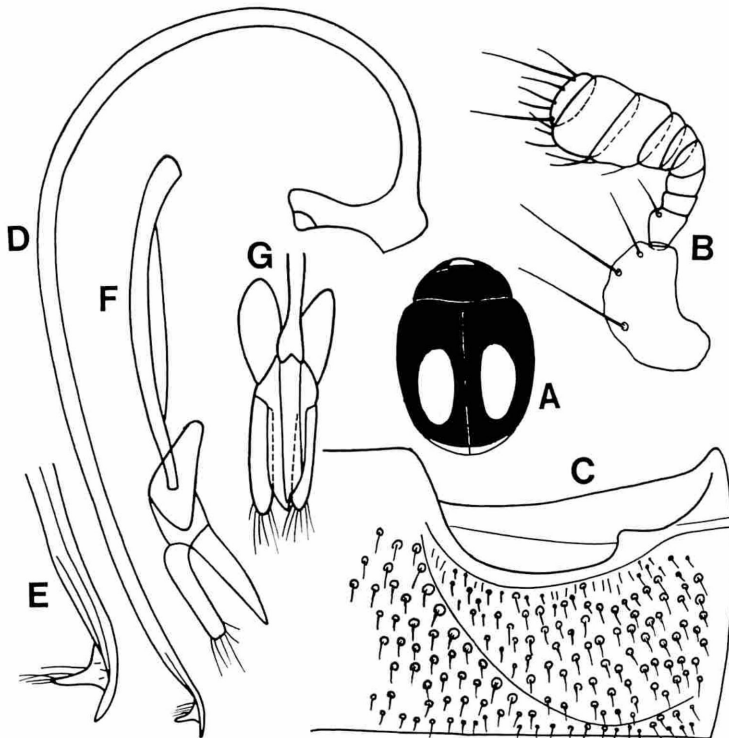


Fig. 1. *Nephus (Geminosisipho) dichosiphonicus* sp. nov. — A, Outline of body; B, antenna; C, first abdominal sternum; D, siphon; E, apex of siphon; F, tegmen, lateral aspect; G, tegmen, ventral aspect.

tegmen shorter than the median piece.

5. *Nephus (Geminosipho) triblulus* sp. nov.

Length 1.4–1.6 mm, width 0.9–1.0 mm.

Form oval in outline, moderately convex, dorsal pubescence white. Head reddish brown with black eyes. Pronotum reddish yellow with a large black mark at its base. Elytron black with a red round spot, which is situated a little behind the middle of elytron; sub-apex brown, apical margin narrowly yellow (Fig. 2 A). Venter black except for prosternum, hypomeron yellow. Legs yellow.

Punctuation on head fine, separated by about 1.0–1.5 times a diameter; punctures on pronotum like those on head; elytron with coarse punctures, separated by about a diameter. Postcoxal line incomplete, gently arched, extending to about 5/7 length of 1st abdominal sternum; area surrounded by postcoxal line irregularly punctured (Fig. 2 C).

Male genitalia:— Siphon long, slender, with the basal half semicircularly curved; siphonal capsule with long inner process and distinct outer process; siphonal apex with two wing-like appendix (Fig. 2 D–E). Lateral lobes of tegmen slightly shorter

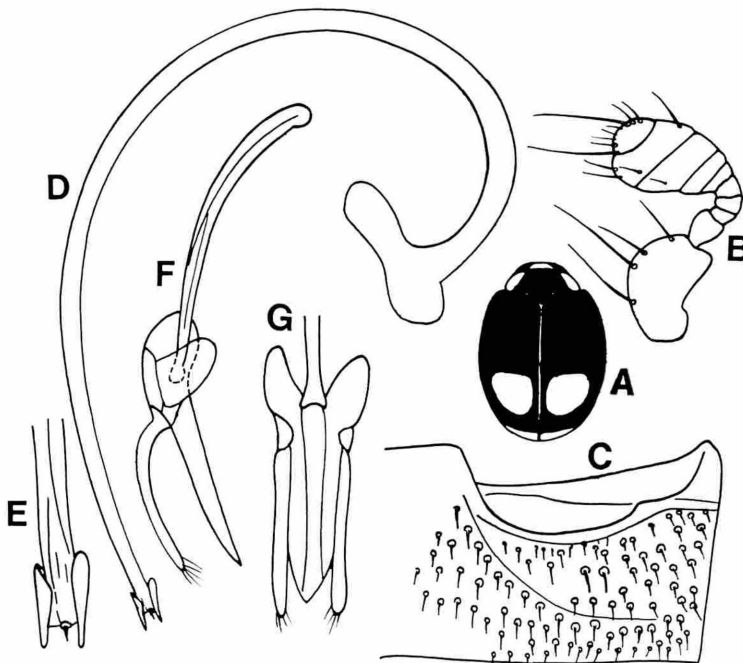


Fig. 2. *Nephus (Geminosipho) triblulus* sp. nov. — A, Outline of body; B, antenna; C, first abdominal sternum; D, siphon; E, apex of siphon; F, tegmen, lateral aspect; G, tegmen, ventral aspect.

than median piece (Fig. 2 F–G).

Holotype: ♂, No. 890055–2, Shenlongjia, Hubei, China, 16–VII–1989, REN Shunxiang leg. Allotype: ♀, 14–VII–1989, same locality as holotype. Paratypes: Shenlongjia, Hubei, China, 2 ♂♂, 1 ♀, 14–VII–1989, 2 ♂♂, 16–VII–1989, REN Shunxiang leg. Jishou, Hunan, China, 4 ♂♂, 16–VII–1989, REN Shunxiang leg. Zhangjiajie, Hunan, China, 10–VII–1989, 1 ♂, 1 ♀, REN Shunxiang leg., 1 ♂, TIAN Mingyi leg.

Remarks. This species is similar to *Nephus (Nephus) dilepismoides* PANG et PU, but is easily distinguished from the latter by the large wing-like appendix of siphonal apex, and the red round spot on the subapex of each elytron.

6. *Nephus (Geminosipho) klapperichi* MADER, comb. nov.

Scymnus (Nephus) klapperichi MADER, 1955, 1026.

Distribution. China (Fujian).

Specimens examined. [Fujian]: 1 ♂, 4 ♀♀, Jinshan, X–1980, HUANG Bangkan leg. 1 ♂, 1 ♀, Fuzhou, X–1982, HUANG Bangkan leg.; 1 ♂, 3 ♀♀, Fuzhou, 10–IV–1982, 2 ♀♀, XI–1982, ZHANG Kechi leg.; 1 ♂, 5 ♀♀, Fuzhou, 2–X–1983, TANG Yuqin leg.; 2 ♂♂, Fuzhou, IX–1984, LUO Xiaonian leg.

Subgenus *Nephus* MULSANT, 1846

Scymnus (Nephus) MULSANT, 1846, 237.

Nephus (Nephus): GORDON, 1976, 278; IABLOKOFF-KHNZORIAN, 1976, 376; PANG & GORDON, 1986, 194; FURSCH, 1987, 64.

Type species: *Sphaeridium quadrimaculatum* HERBST, 1783 (by subsequent designation of KORSCHESKY, 1931).

Antenna 11-segmented, basal two segments fused or at least tightly joined. Post-coxal line on 1st abdominal sternum curved forward apically.

Key to the Species of *Nephus (Nephus)* of China

- 1 (2) Elytra black with 4 light spots *N. quadrimaculatus* HERBST.
- 2 (1) Elytra black with 2 light spots.
- 3 (4) Median piece of tegmen symmetrical *N. roepkei* (FLUITER).
- 4 (3) Median piece of tegmen asymmetrical.
- 5 (6) Apex of siphon distinctly bent outward *N. phosphorus* (LEWIS).
- 6 (5) Apex of siphon nearly straight *N. ryuguus* (KAMIYA).

7. *Nephus (Nephus) quadrimaculatus* (HERBST)

Sphaeridium quadrimaculatum HERBST, 1783, 30.

Scymnus (Nephus) 4-maculatus: MADER, 1955, 949.

Nephus quadrimaculatus: KORSCHESKY, 1931, 132; GURREAU, 1974, 195.

Nephus quadrimaculatus quadrimaculatus: KUGELANN, 1794, 564; CANEPARI & TEDEHI, 1977, 101; FURSCH, 1980, 109.

Distribution. China (Taiwan); Turkey; Sicily; Austria; France; Italy; Greece; Syria.

Specimen examined. [Taiwan]: 1 ♂, Alishan, 10–VI–1977, KLAPPERICH leg.

8. *Nephus (Nephus) roepkei* (FLUITER)

Scymnus roepkei KLUITER, 1938, 49.

Nephus roepkei: CHAPIN, 1965, 201; SASAJI, 1971, 133.

Nephus (Nephus) roepkei: PANG & GORDON, 1986, 195.

Distribution. China (Guangdong, Hainan); Japan; Java; Philippines; Micronesia.

Specimens examined. [Guangdong]: 1 ♂, 3 ♀♀, VII–1972, PANG Xiongfei leg.; 3 ♂♂, 1 ♀, Zhaoqing, 18–V–1989. [Hainan]: 1 ♂, 4 ♀♀, Haikou, 7–XI–1989, REN Shunxiang leg.

9. *Nephus (Nephus) phosphorus* (LEWIS)

Scymnus phosphorus LEWIS, 1896, 37.

Nephus phosphorus: OHTA, 1929, 13; SASAJI, 1971, 127.

Scymnus (Nephus) phosphorus: KORSCHESKY, 1931, 132; MADER, 1955, 954; BIELAWSKY, 1957, 24; KAMIYA, 1961, 288; NAKANE, 1963, 208; FURSCH, 1965, 181.

Nephus galloisi SICARD, 1907, 211.

Scymnus (Nephus) galloisi: KORSCHESKY, 1931, 126.

Scymnus bipunctatus WEISE, 1879, 150.

Distribution. China (Sichuan); Japan.

Specimens examined. [Sichuan]: 2 ♂♂, 2 ♀♀, Wan County, 25–VI–1989, REN Shunxiang leg.

Remarks. This species is newly recorded from China. It is variable in elytral color pattern. Japanese specimens, the typical form, has oval yellow spot on the elytron, situated a little behind the middle. Chinese specimens have a longitudinal yellow spot on the elytron, which is subparallel to the long axis of the body, the anterior border of the spot extending beyond the middle.

10. *Nephus (Nephus) ryuguus* (KAMIYA)

Scymnus (Nephus) ryuguus KAMIYA, 1961, 289.

Nephus ryuguus: SASAJI, 1971, 127; PANG & MAO, 1979, 49.

Nephus (Nephus) ryuguus: FURSCH, 1987, 64.

Distribution. China (Guangdong, Guangxi, Guizhou, Shaanxi, Sichuan); Japan.

Specimens examined. [Guizhou]: 2 ♂♂, Guiyang, 12–VIII–1987, 15–VIII–1985, PANG Xiongfei leg.

Subgenus *Sidis* MULSANT, 1850

Sidis MULSANT, 1850, 975; KORSCHESKY, 1931, 117; BIELAWSKI, 1959, 42; FURSCH, 1980, 307.
Nephus (Sidis): GORDON, 1976, 282; IABLOKOFF-KHNZORIAN, 1976, 387; FURSCH, 1987, 68.

Type species: *Scymnus (Sidis) binaevatus* MULSANT, 1850 (by subsequent designation of KORSCHESKY, 1931).

Antenna 9-segmented, large basal segment undivided. Postcoxal line on 1st abdominal sternum incomplete, nearly reaching lateral margin, curved forward parallel to pre-lateral margin.

11. *Nephus (Sidis) tagiapatus* (KAMIYA)

Scymnus (Nephus) tagiapatus KAMIYA, 1965, 104.

Nephus tagiapatus: SASAJI, 1968, 122; 1971, 130.

Nephus roonwali KAPUR, 1966, 163.

Nephus (Nephus) tagiapatus: PANG & GORDON, 1986, 196.

Distribution. China (Guangdong, Guangxi, Taiwan); Andaman Is; India; Malaysia; Ryukyus; Thailand.

Specimens examined. [Guangdong]: 2 ♂♂, V-1973; 4 ♀♀, VIII-1973, PANG Xiongfei leg. [Taiwan]: 1 ♀, Taipei, 3-IV-1977, KLAPPERICH leg. [Guangxi]: 1 ♂, 1 ♀, 5-V-1980; 1 ♂, 12-V-1982, PU Tianshen leg.

要 約

任 順祥・庞 雄飞: 中国産ホソヒメテントウ属の種。——中国産のホソヒメテントウ属の種を3亜属11種に整理し, 2新種を記載, 1種を新たに記録した。また, 亜属および種の区別点を検索表に示した。

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Elytra, Tokyo, 22 (2): 333, Nov. 15, 1994

A New Name for *Oxytelus* (*Tanycraerus*) *montivagus* ITO
(Coleoptera, Staphylinidae)

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Dr. Lee H. HERMAN kindly informed me that the name *Oxytelus montivagus* ITO, 1994, is preoccupied by *Oxytelus montivagus* HEER, 1841. I have confirmed this information: O. HEER described *montivagus* in *Oxytelus*; the name is now in *Anotylus* and is a junior synonym of *A. sculpturatus* (GRAVENHORST, 1806). I am greatly indebted to Dr. HERMAN of the Department of Entomology, American Museum of Natural History, for his kindness.

Oxytelus (*Tanycraerus*) *houomontis* ITO, nom. nov.

Oxytelus (*Tanycraerus*) *montivagus* ITO, 1994, Nat. Hist. Res., Chiba, 3: 42 (nom. praeocc. by O. HEER, 1841, Fauna Coleopt. Helv., 1 (3): 574).