

# Contribution to the knowledge of the genus *Neoitamus* Osten Sacken, 1878 from China with description of four sympatric species (Diptera: Asilidae)

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## Abstract

Four new sympatric species of Asilidae from the genus *Neoitamus* Osten Sacken, 1878: *N. grootaerti* sp. nov., *N. guangdongensis* sp. nov., *N. nanus* sp. nov. and *N. spineus* sp. nov. from China are described and illustrated.

**Keywords:** Robber fly, China, new species

## 简短摘要

对来自中国 4 种新的同域分布食虫虻科 (Asilidae) *Neoitamus* Osten Sacken 属 (1878) 昆虫 *N. grootaerti* sp. nov., *N. guangdongensis* sp. nov., *N. nanus* sp. nov. 及 *N. spineus* sp. nov. 进行了描述与阐释.

## Introduction

This paper is a study on the knowledge of the Asilidae from the genus *Neoitamus* Osten Sacken, 1878 in China. Actually twenty one species are cited for the Oriental region, with one species for Southeast Asia (TOMASOVIC & BARTOLOZZI, 2018) and four species in the Nord-East of China (GELLER-GRIMM, 2012). At present the knowledge on Asilidae in Oriental region is very incomplete.

## Material and methods

The material studied in the present paper is part of a batch of 13 specimens collected during an expedition organised in 2004 by the Dr P. Grootaert in China, South Province of Guangdong, on the Nanling Mountains a district different from the other Provinces by its tropical climate. Specimens were studied using a Wild M3B stereomicroscope and a Wild M5 drawing tube. The male genitalia were dissected and glued on a cardboard attached to the pin of the corresponding specimen. The photos of the specimens were taken by J. Constant (RBINS) with a Canon camera and processed with Zerene Stacker software or with a Canon EOS 700D camera equipped with a Tamron DI SP 90 mm macro lens and stacked with CombineZ software. The map has been realized with Carta Fauna-Flora 2.0 (BARBIER & RASMONT, 2000).

All the holotypes and paratypes of the new species are preserved in the Royal Belgian Institute of Natural Sciences, Brussels, Belgium.

To distinguish the species of *Neoitamus* from China we have used RICARDO (1919), HRADSKY (1960), LEHR (1966) and YOUNG (2006).

For the description of the chaetotaxy we used the following terminology: bristles = strong setae; setae = average size setae; hairs = very thin setae.

**Subfamily Asilinae Latreille, 1802**  
**Genus *Neoitamus* Osten Sacken, 1878**

The species of *Neoitamus* are characterized by the acutely, long, proclinate occipital setae and the female terminalia elongated and compressed laterally (as in *Astochia* Becker, 1913). Actually four species are known from China. Only for three species the male genitalia have been illustrated: *N. potanini* Lehr, 1966, figs 6, p. 572; *N. setifemur* Lehr 1966, fig. 7 p. 573 and *Neoitamus zouhari* Hradsky, 1960, fig. p. 80 and by (LEHR, 1966) fig. 4 p. 571 and (YOUNG, 2006) figs 11 p. 26, 24 p. 27 and 45 p. 28. For the species *N. rubrofemoratus* Ricardo 1919, gives a general description p. 67-68.

**Map (Fig. 1)**

Only very few records exist in literature, so the data on the map are derived from LEHR (1988) and YOUNG (2006). For the four new species we have used the same symbol because the four species were collected at the same time and locality.

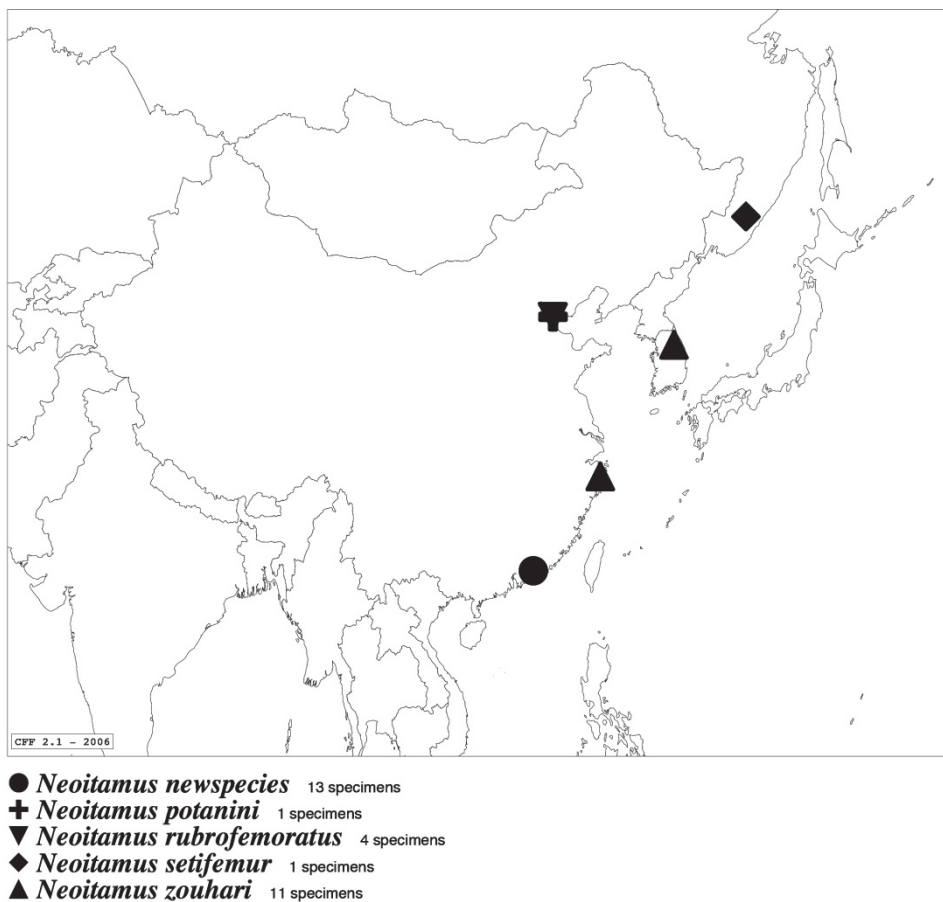


Fig. 1. Distribution maps of species *Neoitamus* of China.

***Neoitamus grootaerti* sp. nov. (Fig. 2)**

**MATERIAL EXAMINED.** Holotype male: Southeast China, Nanling Ruyuan, Guangdong, Forest 1500 m, gardens in secondary forest, 8.V.2004 (24007), leg. P. Grootaert. Paratypes: 1 female Nanling Ruyuan Guangdong near stream, 9.V.2004 (24012), leg. P. Grootaert.

**DESCRIPTION.**

*Male:* Body length 12 mm. Body black with grey tomentum. Legs yellow. Wing lightly blackish. Abdomen with white hairs, tergite 4 with long lateral and basal setae.

*Head:* face with greyish tomentum; frons with thin white orbital hairs. Mystax with numerous long and white setae. Antennae greyish, scape and pedicel with on the anterior part relatively long, white setae, scape twice as long as pedicel, postpedicel slender, as long as scape and pedicel together, style almost as long as postpedicel with a sensory element. Ocellar tubercle with short white hairs. Occiput with grey tomentum, postocular setae strongly proclinate, long and black, occipital hairs and lower occipital hairs white. Proboscis black with long, white hairs on the ventral part. Palpi long, black, with long white setae.

*Thorax:* Pronotum black with greyish tomentum, anteprenotum with small white setae. Postpronotal lobe with thin white hairs on the anterior part. Scutum with sparse short black setae anteriorly and longer, thin and yellowish posteriorly. Two black strips on the central part and two black spots laterally. Bristles black and long: 2 notopleural, 6 supraalar, 2 yellow postalar, 8 pairs of dorsocentral exceeding the transverse suture. Scutellum with greyish tomentum and long thin, white hairs on disc, 2 very long yellow scutellar setae. Pleura with greyish tomentum. Katatergite setae and episternal setae long and yellowish. Anatergite with thin relatively long white hairs. Halteres white.

*Wings:* clear brownish with microtrichia on the distal third.

*Legs:* Coxae with greyish tomentum and white chaetotaxy. Femora, tibiae and tarsi yellowish. Femora and tibiae with long, thin, yellowish setae.

*Abdomen:* Tergites black with grey tomentum and a pale apical margin, short and white hairs on disc and laterally numerous relatively long yellowish setae. Tergite IV with posteriorly and laterally 2 long and yellow bristles. Sternites with sparse, long and thin white hairs.

*Male genitalia:* Brown, clear with short and yellowish chaetotaxy. Epandrium globular with a posterior tubercle. Dististylus slightly curved and rounded apex. Aedeagus with long and slender sheath, distiphallus thin and pointed.

*Female* very similar to male but without the long bristle on the tergite IV.

DERIVATIO NOMINIS This species is named after the collector Dr P. Grootaert of Royal Belgian Institute of Natural Sciences, Brussels, Belgium.

### *Neoitamus guangdongensis* sp. nov. (Fig. 3)

EXAMINED MATERIAL. Holotype male: Southeast China, Nanling Manshan, Guangdong, Forest 1500 m, 8.V.2004 (24009), leg. P. Grootaert. Paratypes: 1 female same that holotype, 1 male Nanling Ruyuan Guangdong forest near entrance park, 8.V.2004 (24008), leg. P. Grootaert.

#### DESCRIPTION.

*Male:* Body length 14 mm. Body black with grey tomentum. Legs, femora black, protibiae and mesotibiae black and brown, metatibiae yellow with black apex. Wing brownish. Abdomen with long, thin white hairs, tergite IV with long setae laterally and basally.

*Head:* face with yellowish grey tomentum; frons with thin black orbital hairs. Mystax with numerous long and black setae. Antennae black, scape and pedicel with short, black setae, scape longer than the pedicel, postpedicel thin, as long as scape and pedicel together, style long with a sensory element. Ocellar tubercle with long black setae.

Occiput with grey tomentum, postocular setae strongly proclinate, long and black, occipital hairs black, lower occipital hairs white. Proboscis black with long, thin, white hairs basally on the ventral part. Palpi long, black, with long black setae.

*Thorax:* Pronotum with grey-yellowish tomentum, anteprenotum with some thin, black setae. Postpronotal lobe covered by relatively long and thin white and black hairs. Scutum with sparse relatively long, thin and black setae. Bristles black and long: 3 notopleural, 3 supraalar, 4 postalar, 5-6 pairs of dorsocentral exceeding the transverse suture. Scutellum with greyish tomentum and long thin, white hairs on disc, 3 very long black scutellar setae. Pleura with greyish tomentum. Anepisternum with thin, black hairs on the superior part, anepimeron with 4 long, thin, black setae. Katatergite setae numerous and black. Metepisternal setae numerous, long thin white and black. Anatergite with thin white hairs. Halteres white.

*Wings:* Wings brownish with microtrichia on the distal third.

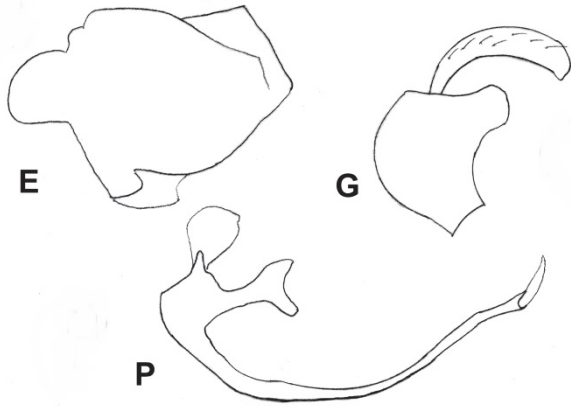


Fig. 2. Genitalia of *Neoitamus grootaerti* sp. nov. E= epandrium, G= gonocoxite and dististylus, P= phallus.

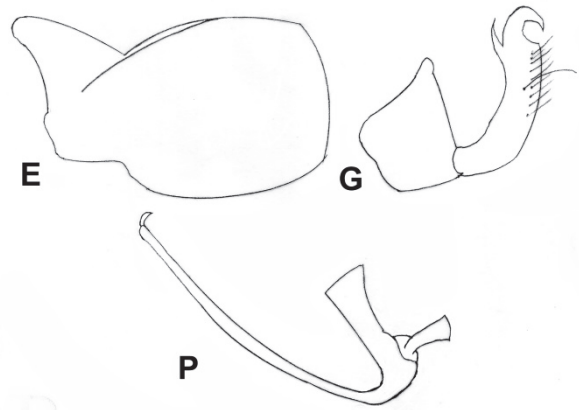


Fig. 3. Genitalia of *Neoitamus guangdongensis* sp. nov. E= epandrium, G= gonocoxite and dististylus, P= phallus.

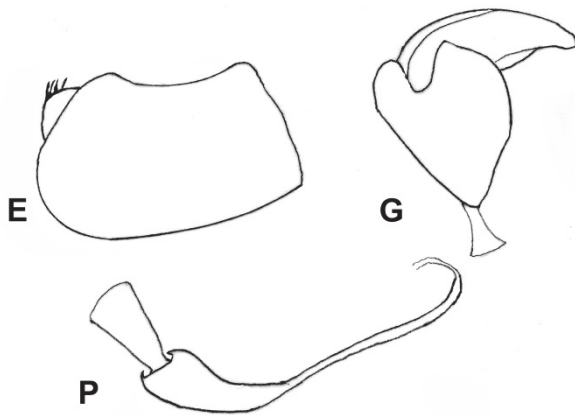


Fig. 4. Genitalia of *Neoitamus nanus* sp. nov. E= epandrium, G= gonocoxite and dististylus, P= phallus.

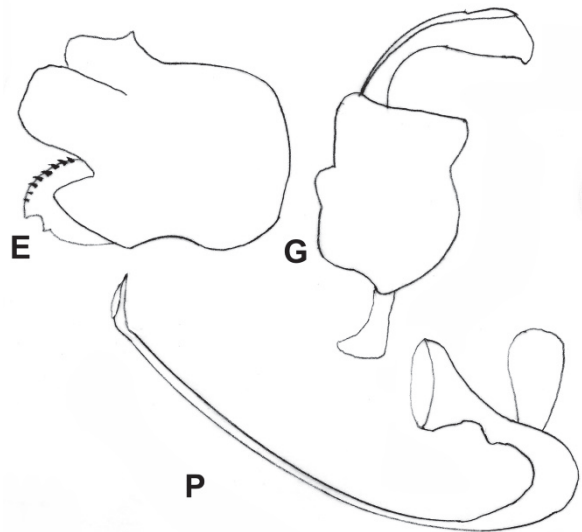


Fig. 5. Genitalia of *Neoitamus spineus* sp. nov. E= epandrium, G= gonocoxite and dististylus, P= phallus.

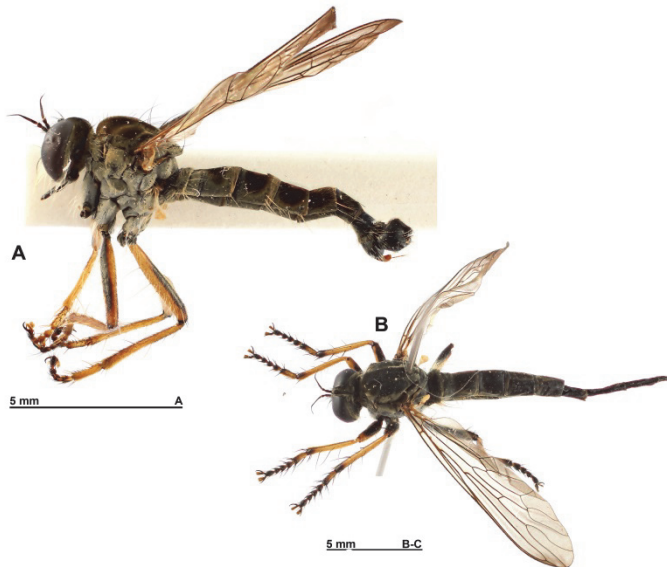


Fig. 6. Pictures of *Neoitamus spineus* sp. nov. A= male view laterale- B= female view dorsal.

*Legs:* Coxae with greyish tomentum and long chaetotaxy. Femora black. Profemora with long and black setae on the ventral part, mesofemora with black setae on the ventral and inter part, metafemora with one yellow ring to the base and some black setae, on the ventral, and extern part on the inter part they are white.

Protibiae and mesotibiae yellow-brown with long black setae, metatibiae yellowish the distal third and short black setae. Tarsi black with black setae.

*Abdomen:* Tergites black with grey a pale apical margin, tergites I-II with relatively long lying white hairs, tergite IV with posteriorly and laterally 2 long setae. Sternites black with sparse, long and thin white hairs.

Male genitalia: Brown, shiny. Epandrium rectangular with a posterior subapical tubercle. Dististylus with thin hairs and apex with large hooked on one side and with a thin spine on other side. Aedeagus with long and slender sheath, distiphallus small and thin.

Female very similar to male but without the long setae on the tergite IV.

DERIVATIO NOMINIS. The species name refers to the China Province of Guangdong, where the type specimen was collected.

#### *Neoitamus nanus* sp. nov. (Fig. 4)

EXAMINED MATERIAL. Holotype male: Southeast China, Guangdong stream, 1300 m, 9.V.2004 (24012), leg. Grootaert.

#### DESCRIPTION.

*Male:* Small and slender species. Body length 8 mm. Body black with grey tomentum. Mystax white with some thin black setae. Legs and femora black, the rest yellow. Wing lightly blackish with microtrichia. Abdomen, tergite 4 with long laterally and basally setae.

*Head:* face with greyish tomentum; frons with thin and black orbital hairs. Mystax with numerous long and white setae and thin black setae over. Antennae black, scape and pedicel with on the anterior part long black setae, scape longer than the pedicel, postpedicel slender, as long as scape and pedicel together, style almost as longer as the postpedicel with a sensory element. Ocellar tubercle with long, thin black setae. Occiput with grey tomentum, postocular setae strongly proclinate, long and black, occipital hairs and lower occipital hairs white. Proboscis black with long, white hairs on the ventral part. Palpi long, black, with long thin black setae.

*Thorax:* Anteprenotum with 3 black setae. Postpronotal lobe bare. Scutum with very sparse short and thin black setae, some thin and yellowish hairs posteriorly. Bristles black and long: 1 thin posthumeral, 2 notopleural, 3 supraalar, 3 postalar, 8 pairs of dorsocentral exceeding the transverse suture. Scutellum with greyish tomentum and 3 long black scutellar setae. Pleura with greyish tomentum, 2 anepimeral black and thin setae. Katatergite setae and episternal setae long and yellowish. Anatergite with thin white hairs. Halteres white.

*Wings:* clear blackish with microtrichia on the distal third.

*Legs:* Coxae with greyish tomentum and white chaetotaxy. Femora black, tibiae and tarsi yellowish. Profemora and mesofemora with long and thin black setae, metafemora with very long, thin and yellow setae. Protibiae and mesotibiae with long thin yellow setae, metatibiae with black setae and one black ring to distal apex. Protarsis and mesotarsis with black and yellow setae, metatarsis with black setae.

*Abdomen:* Tergites black with grey tomentum and a pale apical margin. Tergite IV with posteriorly and laterally 2 long and yellow bristles. Sternites black with grey tomentum and with long and thin white hairs.

Male genitalia: Brown, clear, epandrium with yellow-brown hairs, gonocoxide with short black setae. Epandrium short, rectangular and a posterior tubercle with some short spines. Dististylus short, oblong-triangular, with large base and rounded end. Aedeagus with slender sheath, distiphallus with 2 clear very thin tubes.

DERIVATIO NOMINIS. From Latin « nanus » refer to the size of the species.

### *Neoitamus spineus* sp. nov. (Figs 5-6)

EXAMINED MATERIAL. Holotype male: Southeast China, Nanling Manshan, Guangdong, Forest 1500 m, 8.V.2004 (24009), leg. P. Grootaert. Paratypes: 1 male, 2 females same that holotype, 1 female, Nanling Ruyuan Guangdong forest near entrance park, 8.V.2004 (24008), 1 female Nakunshan N.P. Guangdong, 12.V.2004 (24018), leg. P. Grootaert.

#### DESCRIPTION.

*Male*: Body length 13 mm. Body black with grey tomentum. Legs yellow-brown. Femora with one black strip. Wing blackish. Abdomen, tergites with long and clear setae.

*Head*: face with yellow-brown tomentum, frons with thin, long of black orbital hairs. Mystax with numerous long and white setae and above 1-2 black hairs. Antennae black, scape and pedicel with short, black setae, scape longer than the pedicel, postpedicel longer than scape and pedicel together, style long with a sensory element. Ocellar tubercle with long black setae. Occiput with grey tomentum, postocular setae strongly proclinate, long and black, occipital hairs and lower occipital hairs white. Proboscis black with long, thin, white hairs basally on the ventral part. Palpi long, black, with long thin and white setae.

*Thorax*: with grey tomentum, anteprenotum with some thin, white setae. Postpronotal lobe covered by relatively long and thin black hairs. Scutum with sparse relatively long, thin and black setae. Setae black and long: 2 notopleural, 2 supraalar, 3 postalar, 6 pairs of dorsocentral exceeding the transverse suture. Scutellum with greyish tomentum and thin, black hairs on disc, 2 very long black scutellar setae. Pleura with greyish tomentum. Anipimeron with long, thin, white hairs. Katatergite setae and metepisternal setae are very few and very long, thin and white. Anatergite with thin relatively long and white hairs. Halteres white.

*Wings*: Wings blackish with microtrichia.

*Legs*: Coxae with greyish tomentum and long white chaetotaxy. Femora yellow-brown covered by micro yellow hairs and with a dorsal black strip. Profemora with long, very thin and yellow setae on the ventral part on the extern part they are shorter and more stout, mesofemora with long, very thin and yellow setae on the ventral part, metafemora with long, thin and yellow setae on the ventral part on the extern and inter part they are shorter. Tibiae with long yellow and shorter black setae, metatibiae with one brown distal ring. Tarsi yellow and brown with black and yellow setae.

*Abdomen*: Tergites between I to VI with grey-brown tomentum and long, thin yellow posterior setae, tergite IV with 2 long and yellow laterally setae, tergites VII-VIII shiny black with yellow thin setae. Sternites with grey-brown tomentum and sparse long and thin white hairs.

*Male genitalia*: Black, shiny. Epandrium robust with 3 posterior tubercles the one below with micro notch. Conocoxyste rectangular, dististylus with apical part broadly rounded apex and short, thin hairs. Aedeagus with long and slender sheath, distiphallus not distinctive.

*Female* very similar to male but without the long setae on the tergite IV.

DERIVATIO NOMINIS. From Latin « spineus », refer to numerous setae on abdomen.

#### Key of *Neoitamus* in China

- 1 Species with dorsal occipital setae strongly proclinate .....2
- Species characterized by straight dorsal occipital setae bent forward at the very apex .....  
.....*potanini* Lehr
- 2 Large species more than 20 mm, antennae with postpedicel red .....*rubrofemoratus* Ricardo
- Species less than 20 mm. Postpedicel black .....3
- 3 Species with many strong bristles on the sides of mid-femur ..... *setifemur* Lehr
- Species with the mid-femur without bristles at most the setae are short or long and thin .....4
- 4 Abdomen shiny blue-black. Legs black and red. Wings blackish.....*zouhari* Hradsky
- Abdomen with grey tomentum. Legs other colour.....5
- 5 Species with yellow legs .....6
- Species with femora black .....7

- 6 legs completely yellow.....*grootaerti* sp. nov.  
 - Femora yellow with black stripe.....*spinus* sp. nov.  
 7 Species longer than 10 mm. Abdomen with long, thin white hairs.....*guangdongensis* sp. nov.  
 - Species smaller than 10 mm. Mystax white with some thin black setae.....*nanus* sp. nov.

REMARK: the four new species have one pair of long setae on the tergite IV in the posterior corner.

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