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THE FIRST TWO ORIENTAL SPECIES OF *NEOASCIA* WILLISTON (DIPTERA, SYRPHIDAE)

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Neoascia anassa sp. n. is described from the north-west of Vietnam, based on one male specimen. *N. nana* sp. n. is described from north-east Burma, also based on one male specimen. These are the first records of the genus *Neoascia* from the Oriental region.
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Species of the genus *Neoascia* Williston, 1886 are very small (3.5-6.5 mm) and slender hoverflies, mostly with a waisted abdomen. The larvae are semi-aquatic, the adults therefore are often found in or near wet habitats. The genus is usually placed in the tribe Chrysogasterini, which belongs to the subfamily Eristalinae (Ståhls et al. 2004).

Neoascia has a Holarctic distribution. At present, 25 species are known, 17 of which are restricted to the Palaearctic region, four to the Nearctic region and four occur in both regions (Thompson 2004). More species can be expected, considering the recent description of several species even from the relatively well known fauna of the western Palaearctic region (e.g. Claussen & Hayat 1997, Hauser & Kassebeer 1998).

So far, no species of *Neoascia* were found outside the Holarctic region. A small number of Neotropical and Oriental species have been described in the genus *Ascia* Meigen, 1822 (= *Neoascia*), but all have been transferred to genera which are nowadays considered to belong to different subfamilies, such as *Ocyptamus* Macquart, 1834 (Syrphinae) and *Paramicrodon* de Meijere, 1913 (Microdontinae) (Keiser 1958, Knutson et al. 1975, Thompson 2004). This paper describes the first two known species of *Neoascia* from the Oriental region.

Material and methods

The material examined is kept in the collections of the National Museum of Natural History, Leiden, the Netherlands (RMNH) and the Swedish Museum of Natural History, Stockholm, Sweden (NHRS). Most of the drawings have been made from photographs produced by Analysis Extended Focal Imaging Software, using an Olympus motorised stereozoom microscope SZX12. The drawing of the genitalia of *N. nana* sp. n. was made after a temporary slide in glycerol, using a Leitz Diaplan compound microscope.

Coordinates of the type localities have been determined afterwards by the authors. Morphological terminology is based on Speight (1987).

Diagnosis of *Neoascia*

The following combination of characters distinguishes *Neoascia* from the other known genera of Syrphidae.

Head: dichoptic and without facial tubercle in both sexes, mouth edge produced (fig. 1 & 6).

Thorax: epimera of metapleura laterally with spines, in dorsal view visible as spines at the base of the abdomen (fig. 4 & 8).

Wings: anterior cross vein situated at proximal half

of discal cell; posterolateral corners of posterior and discal cells more or less straight (fig. 3) or weakly rounded (fig. 7).

Legs: posterior femora strongly swollen and with ventral rows of spines.

Neoascia anassa sp. n.
(figs. 1-5)

Holotype. – Male. "NW Vietnam: Tonkin, Hoang Lien N.R., 15 km W Sa Pa, c. 1900 m. 15-21.x.1999, Malaise traps. Leg. C. v. Achterberg. RMNH'99". Coordinates: 22°21'N-103°50'E. Deposited in coll. RMNH.

Description

Head (fig. 1). – Eyes bare, separated over a distance of about ¼ of the width of the head (dorsal view). Face parallel-sided, about as wide as ¼ of total width of head, slightly wider at level of frontal prominence. Upper mouth edge strongly produced, frontal prominence weakly produced. Face, mouth-edge and genae black, almost entirely covered by silvery white pollinosity, except for a narrow strip along the mouth-edge and the genae. Mouth-edge and orbital strips with pale hairs.

Frons shining black, with a wrinkled texture in the middle part, which is a little aeneous. Anterior half of frons with short yellow hairs, posterior half up to vertex with longer black hairs. An ill-defined median furrow runs from the frontal ocellus to the base of the frontal prominence. Lunula black. Ocellar triangle with frontal angle of approximately 60°.

Antenna: first and second segments brown, pale ventrally and almost black dorsally. Third segment about 1,5 times as long as wide, orange ventrally and blackish dorsally, with quite abrupt transition. Arista about as long as second and third antennal segment together; dark brown.

Thorax. – Mesoscutum dull greyish black, densely and coarsely punctated; more or less shining on narrow lateral strip and just posterior of postpronotal sclerites; covered with short hairs, black in the dull middle part and pale along shining margins. Postpronotal sclerites with white pruinescence on anteriomedian half and shining black laterally. Postalar calli brownish, with yellow hairs. Scutellum shining black, a little duller medially, finely punctated and with yellow hairs.

Pleura shining black, with a thin white pollinosity on antepronotum, mesanepisternum, mesepimeron and ventral part of katepisternum; with long pale hairs on mesanepisternum, mesepimeron and dorsal part of katepisternum. Metasternum bare.

Coxae 1 and 2 largely dull black, but yellow distally and with some short white hairs. Coxa 3 dull black with long white hairs frontally. Trochanters yellow and with short white hairs. Metapleura connected very narrowly posterior to coxae 3 (fig. 2).

Femora 1 and 2 yellow and with white hairs. Femur 3 yellow on basal $^{2}/_{5}$ and on top $^{1}/_{10}$, otherwise black; with two rows of long black spines ventrally; other parts with long white hairs.

Tibiae 1 and 2 yellow with white hairs. Tibia 3 yellow on basal $^{2}/_{5}$ and top $^{1}/_{10}$, otherwise black; with pale hairs on yellow parts and black hairs on black part.

Tarsus 1: first two tarsomeres yellow (others missing in type specimen). Tarsus 2: first four tarsomeres yellow, fifth tarsomere brownish; with pale hairs. Tarsus 3: all tarsomeres brownish black dorsally, yellow ventrally; completely covered with short yellow hairs. Claws of all tarsi yellow on basal half, dark on top half.

Wing (fig. 3) with a brownish tinge on basal ⅔, clear on top ⅓ and on posterior margin; entirely covered by microtrichiae. Posterolateral corners of posterior and discal cells with short 'appendices', pointing to the wing margin. Calypterae and halteres yellow.

Abdomen (fig. 4). – Tergite 1 black. Tergite 2 with a large yellow patch, which is acutely drawn out to the anterior margin; anterior and posterior margins black. Tergite 3 largely yellow, with black anterolateral corners and posterior margin. Tergite 4 black, except for a narrow yellow strip along the anterior margin, which does not reach the lateral margins. All tergites with short black hairs medially and long pale hairs laterally.

All sternites shining and sparsely occupied with pale hairs. Sternite 1 about 1,5 times as long as wide, dark brown. Sternite 2 about 5 times as long as wide, yellow, with a transversely wrinkled texture. Sternite 3 about 2,5 times as long as wide, yellow, with a transversely wrinkled texture. Sternite 4 less than 1,5 times as long as wide, yellow anteriorly and gradually changing to brown medially and black posteriorly.

Hypopygium as in fig. 5.

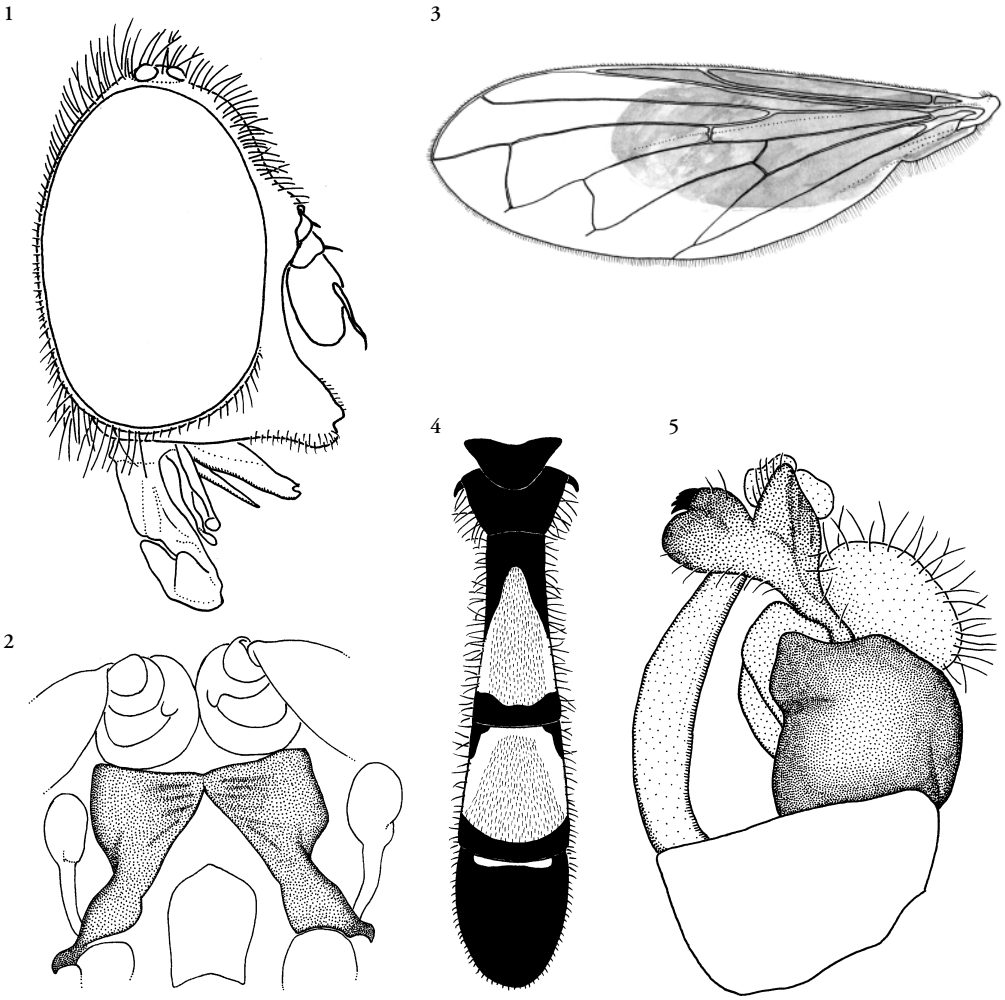
Measurements. – Body 7.8 mm, wing 6.9 mm.

Etymology

The name *anassa* ('queen', Gr.) was chosen because of the unusually large size of the species compared to the other members of the genus.

Diagnosis

The general habitus is much like that of other *Neoascia* species. However, the only known specimen of *N. anassa* possesses some unique characters, which distinguish it from any other species in the genus.



Figs. 1-5. *Neoascia anassa* sp. n., male. – 1, Head in lateral view; 2, Metapleura in ventral view; 3, Wing; 4, Abdomen in dorsal view; 5, Genitalia in lateral view.

It is exceptionally large (7.8 mm), has large yellow markings on tergite 2 and 3 and the wings are infuscated on the basal half. The male genitalia are also distinctive in the shape of the surstylus and the slender hypandrium.

Notes on habitat

The type specimen has been collected in a malaise trap near the Tram Ton Pass, the highest mountain pass of Vietnam (1900 m), near Fan Si Pan mountain. The malaise trap had been set up in an area of disturbed montane forest, containing muddy areas and small streams (C. van Achterberg, pers. comm.).

Neoascia nana sp. n.
(figs. 6-9)

Holotype. – Male. "N.E. Burma, Kambaiti, 2000 m., 9.iv.1934. Leg. Malaise". Coordinates: 25°23'N-98°09'E. Deposited in coll. NHRS.

Head (fig. 6). – Eyes bare, separated over a distance of about 1/5 of the width of the head (dorsal view). Face nearly parallel-sided, slightly narrowing downward, about as wide as 1/5 of total width of head. Upper mouth edge weakly produced, frontal prominence weakly produced. Face, mouth-edge and

genae black, almost entirely covered by silvery white pollinosity, except for a narrow strip along the mouth-edge and the genae. Mouth-edge and orbital strips with pale hairs.

Frons shining black, with a more or less circular depression just above the frontal prominence. From this depression, an ill-defined median furrow to the frontal ocellus. Frons entirely covered with pale hairs, gradually longer towards vertex. Lunula reddish brown. Ocellar triangle with frontal angle of approximately 60°.

Antenna: orange, first segment a little darker than other two. Third segment about 1,3 times as long as wide, with almost parallel dorsal and ventral sides and with rounded apex. Arista slightly longer than third antennal segment; orange.

Thorax. – Mesoscutum shining black, finely punctated, entirely covered with short pale hairs. Postpronotal sclerites shining black. Postalar calli brownish, with a few short, pale hairs. Scutellum shining black, finely punctated and with pale hairs.

Pleura shining black, with a thin white pollinosity on antepronotum, mesanepisternum, and dorsal half of mesepimeron; with long pale hairs on ventroposterior part of mesanepisternum 2 and mesepimeron. Metasternum with some short, pale hairs.

Coxae 1 and 2 yellow and bare. Coxa 3 brownish with short pale hairs. Trochanters yellow and with short pale hairs. Metapleura widely separated posterior to coxae 3.

Femora 1 and 2 yellow with long yellow hairs posteriorly. Femur 3 yellow on basal 1/3 and narrowly on apex, otherwise black; with two rows of short black spines ventrally; other parts with long pale hairs.

Tibiae 1 and 2 yellow with short white hairs, with an vague brownish ring on the distal half, occupying about 2/5 of the length of the tibia; apex yellow. Tibia 3 dark yellow on basal 2/5 and pale yellow on top 1/5, otherwise black; with sparse pale hairs.

Tarsus 1 and 2 yellow. Tarsus 3: first tarsomere brownish, others dark yellow. Claws of all tarsi yellow on basal half, dark on top half.

Wing (fig. 7) entirely clear, entirely covered by microtrichia. Posterolateral corners of posterior and discal cells weakly rounded, without appendices. Calypterae and halteres yellow.

Abdomen (fig. 8). – Tergite 3 medially with small adpressed black hairs. Tergite 1 black with long pale hairs laterally. Tergite 2 black with two mediolateral yellow spots. Tergite 3 with yellow band, occupying the anterior $^3/_5$ of the tergite; anterolateral corners and posterior $^2/_5$ black. Tergite 4 black. All tergites with pale hairs, which are longer and more erect laterally. Tergite 3 with short, adpressed black hairs medially on the yellow part.

All sternites shining. Sternite 1 about 2 times as long as wide, black. Sternite 2 about 4 times as long as wide, yellowish. Sternite 3 about as long as wide, yellow. Sternite 4 a littler wider than long, black. Hypopygium as in fig. 9.

Measurements. – Body 4.7 mm, wing 2.9 mm.

Etymology

The name *nana* ('dwarf', L.) refers to the small size of the species, especially in comparison with the other species described in this paper.

Diagnosis

Neoascia nana belongs to a group of species with separated metapleura and entirely clear wings (marginal veins of wing apex not infuscated). Within this group, *N. nana* is distinguished by a very weakly protruding mouth-edge (the face is almost flat), a short subrectangular third antennal segment as well as a characteristic abdominal colour pattern and male genitalia. The species most closely resembles the East-Palaearctic species *N. amurensis* Mutin, 1990 and *N. confusa* Mutin, 1990, from both of which it differs by the more abruptly bent hypandrium and by the shape of surstylus with its less prolonged ventral part (see Mutin 1990 or Mutin & Barkalov 1999). External characters of *N. nana* distiguishing it from *N. amurensis*, which has a similar abdominal colour pattern, are the less protruding mouth-edge and the shorter third antennal segment.

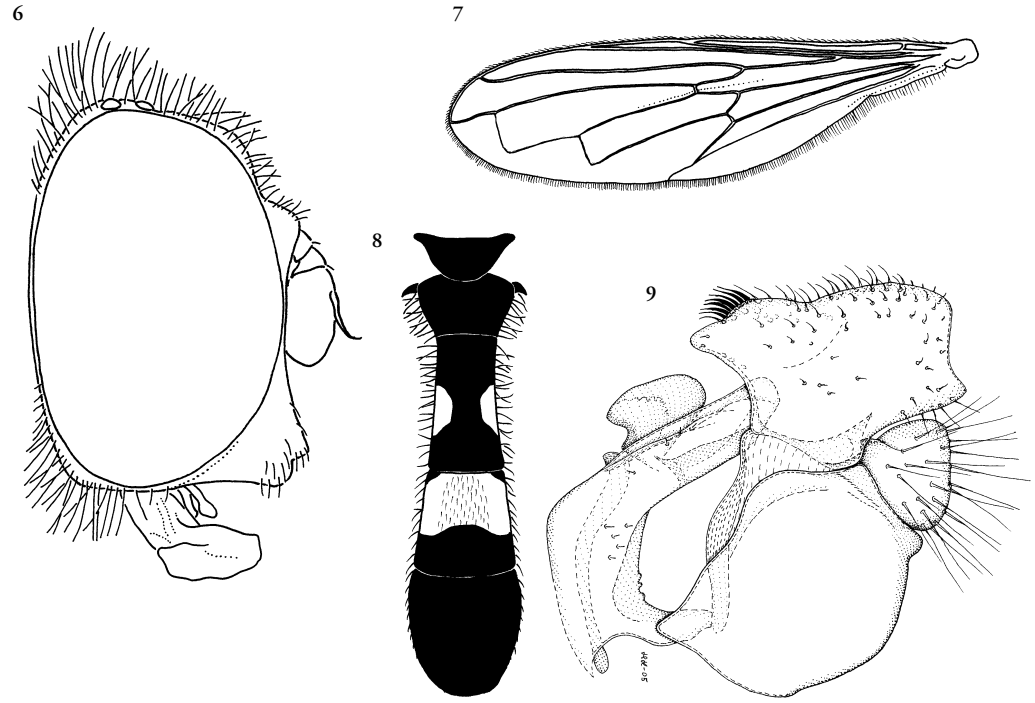
Notes on habitat

Although the exact locality where the type specimen has been collected is unknown, the collector has published some notes and photographs on his collection sites in the area of Kambaiti. This area can be described as montane cloudforest, containing swampy areas and streams, at an altitude of 2000 m (Malaise 1945).

Discussion

Notes on subgenera. – According to Stackelberg (1965), two subgenera can be recognized within *Neoascia*: *Neoascia* s.s., in which the metapleura form a complete post-metacoxal bridge, and *Neoasciella* Stackelberg, in which the metapleura do not form a post-metacoxal bridge. As for the species described in this paper, *N. anassa* would belong to *Neoascia* s.s. and *N. nana* to *Neoasciella*. However, the value of this character for assessing phylogenetic relationships seems questionable, for it has appeared to be variable even at the species-level (e.g. in *N. geniculata* (Meigen, 1822) and *N. podagrica* (Fabricius, 1775)).

Spines on metathoracic pleura. – One of the characters mentioned in the diagnosis of the genus, the presence of epimeral spines of the metathoracic



Figs. 6-9. *Neoascia nana* sp. n., male. – 6, Head in lateral view; 7, Wing; 8, Abdomen in dorsal view; 9, Genitalia in lateral view.

pleura, has previously been noticed by Lundbeck (1916), but otherwise has received little attention in the literature. Nevertheless it seems an interesting apomorphic character of the genus, for these spines lack in other genera of Syrphidae, even in closely related genera, such as *Sphegina* Meigen, 1822. The function of these spines, which are present in both sexes, is unclear.

Biogeographical note. – The areas in which both species have been found are part of the eastern offshoot of the Himalayan mountain chain. At high altitudes (above 2000 m), the flora and fauna of these mountains contains many Palaearctic elements (Malaise 1945). Therefore, it is hardly surprising that representatives of the genus *Neoascia* have been found here.

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