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Hydraena (s.str.) *namiae*, a new species from Toyama Prefecture (Japan) (Coleoptera: Hydraenidae)

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Abstract

A new species of *Hydraena* s.str. KUGELANN, 1794 is described from Japan (Honshu, Toyama Pref.): *H. namiae*. The new species is closely related to *H. kitayamai* JÄCH & DÍAZ, 2012 (*H. notsui* species group).

Key words: Coleoptera, Hydraenidae, *Hydraena* s.str., taxonomy, new species, Japan, Honshu.

Introduction

The *Hydraena notsui* species group is endemic to Japan (Honshu, Shikoku). All seven species of this group described so far are small (1.4–2.0 mm long) and of restricted distribution (see also JÄCH & DÍAZ 1999, 2012). None of these species has been recorded from more than three prefectures. They prefer springs or small streams in forests, where they are usually found only in small numbers. For these reasons they are rarely collected, but it can be assumed that there are still several undiscovered species in Japan.

In September 2009 Yuuki Kamite collected two males of an undescribed species in Toyama Prefecture (Honshu). Almost exactly four years later, the senior author joined Yuuki Kamite and his wife Nami to the type locality in order to collect more specimens. They are described below and represent the eighth member of this elusive species group.

Material and Methods

All specimens examined are deposited in the following institutions and private collections:

CKN	Coll. Y. Kamite, Nagoya, Japan
NMW	Naturhistorisches Museum Wien, Austria

Check list of the species of the *Hydraena* (s.str.) *notsui* group

Hydraena chifengi JÄCH & DÍAZ, 1999	Honshu (Aichi Pref.)
Hydraena curvipes JÄCH & DÍAZ, 2012	Honshu (Nagano Pref.)
Hydraena hayashii JÄCH & DÍAZ, 2012	Honshu (Shimane Pref.)
Hydraena kamitei JÄCH & DÍAZ, 2012	Honshu (Gifu Pref., Tochigi Pref.)
Hydraena kitayamai JÄCH & DÍAZ, 2012	Honshu (Osaka Pref.)
Hydraena namiae JÄCH & DÍAZ, sp.n.	Honshu (Toyama Pref.)
Hydraena notsui SATÔ, 1978	Honshu (Shimane Pref., Tottori Pref.), Shikoku (Ehime Pref.)
Hydraena yoshitomii JÄCH & DÍAZ, 1999	Honshu (Saitama Pref.)

Fig. 1: Habitus of *Hydraena namiae*, holotype.

Hydraena notsui species group

The *Hydraena notsui* species group was established by JÄCH & DÍAZ (1999: 340). The species of this group are united by the following characters: body length: 1.4–2.0 mm; eyes very small (less than 20 facets visible in dorsal view); frons strongly convex between eyes, apical segment of maxillary palps unicolored; elytral gutter and pseudepipleura wide; elytral apices short; male sternite X subtriangular, not overlapping with spiculum; setal pattern of aedeagal main piece (subapical+dorsal) variable: 4+1, 3+1, 2+1 or 0+1; gonocoxite: apex not emarginate between tufts, inner plate not strongly projecting basally, condyles lateral.

Secondary sexual dimorphism rarely (*H. curvipes*) well developed, maxillary palps never sexually dimorphic.

The phylogenetic relationships of the *H. notsui* group are not yet well understood. DNA sequence analyses suggest possible relationships with *H. sharpi* Rey, 1886, and the following species groups: *H. cirrata* group, *H. eichleri* group, *H. grandis* group, *H. holdhausi* group, *H. minutissima* group, *H. nigrita* group, *H. pulchella* group, *H. riparia* group, and *H. rufipes* group (see TRIZZINO et al. 2013).

Hydraena (s.str.) *namiae* sp.n.

TYPE LOCALITY (Fig. 10): Small, rather fast flowing stream, in deep ravine in forest, ca. 415 m a.s.l., 36°30'43.2"N 137°3'42.2"E, Yatsuomachitochiori, ca. 26 km SW Toyama, Toyama Prefecture, western Central Honshu, Japan.

TYPE MATERIAL: **Holotype** ♂ (NMW): "JAPAN: Honshu, Toyama Pref. Yatsuomachitochiori, Toyama-shi ca. 26 km S Toyama", "36°30'43.14"N, 137°03'42.58"E 425 m a.s.l. 19.IX.2013, leg. M.A. Jäch (12)". **Paratypes**: 6 exs. (CKN: 1, NMW: 5), same locality and date as holotype, collected by M.A. Jäch (3 exs.) and Y. Kamite (3 exs.); 2 ♂♂ (CKN, NMW): "TOYAMA JPN Yatsuomachi -tochiori", "Toyama-shi 21. IX. 2009 Y. Kamite leg.".

DIAGNOSIS: Habitus as in Fig. 1. Body length: 1.54–1.82 mm. Very closely related with *Hydraena hayashii* (1.50–1.75 mm long) and *H. kitayamai* (1.40–1.60 mm long). Body form and punctation of dorsum more or less as in these species.

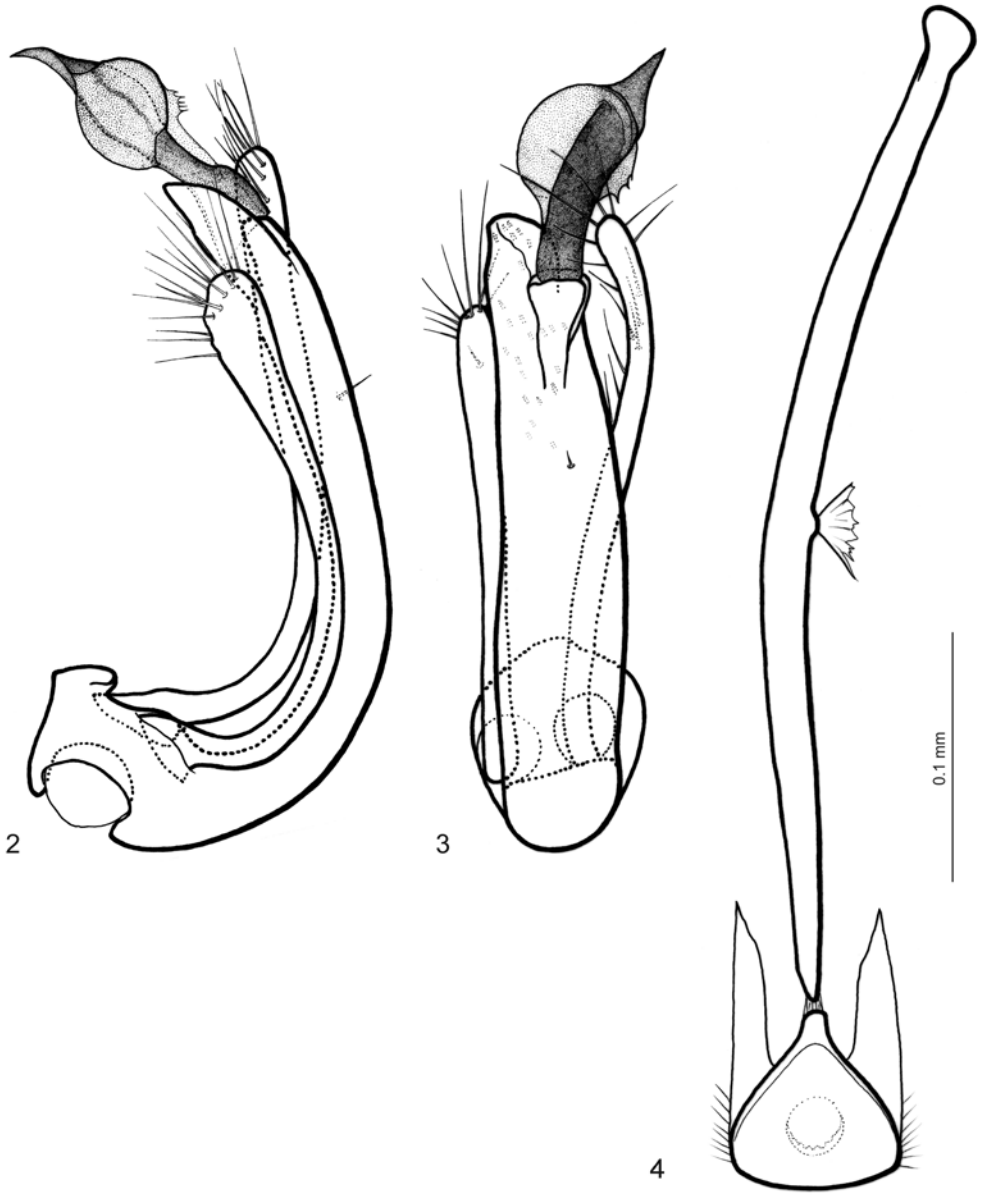
The new species can be easily distinguished from *H. hayashii* in the male metatibia being distinctly widened mesally in distal half (Figs. 1, 9). In females of the new species the sublateral elytral bulge is not strongly elevated, never ridge-like as in *H. hayashii* (see JÄCH & DÍAZ 2012: fig. 3), and the elytral depression is less strongly pronounced than in females of *H. hayashii* (see JÄCH & DÍAZ 2012: fig. 3).

Externally, the new species is very similar to *H. kitayamai*. In the new species the elytral gutter is slightly wider, the metaventrite is less distinctly impressed, and in the female the metaventral plaques are more widely separated from each other.

Aedeagus (Figs. 2–3): Very similar to that of *H. hayashii* and *H. kitayamai*; main piece with one dorsal seta. From *H. hayashii* it can be distinguished mainly by the shape of the main piece, which is more regularly curved in lateral view and rather straight (not sinuous as in *H. hayashii*) in dorsal view; the apex of the main piece is less distinctly curved in lateral view.

The aedeagus of *H. kitayamai* agrees very well in the shape and size of the main piece; however, in the new species the position of the dorsal seta is significantly closer to the middle. The distal lobe is largely hyaline and quite variable in both species; in the new species the distal lobe is slightly longer, and slightly directed ventrad (lateral view). In *H. namiae* the apex of the right paramere is distinctly wider than in *H. kitayamai*.

Male sternite X and spiculum as in Fig. 4. Spiculum comparatively longer than in *H. kitayamai.*



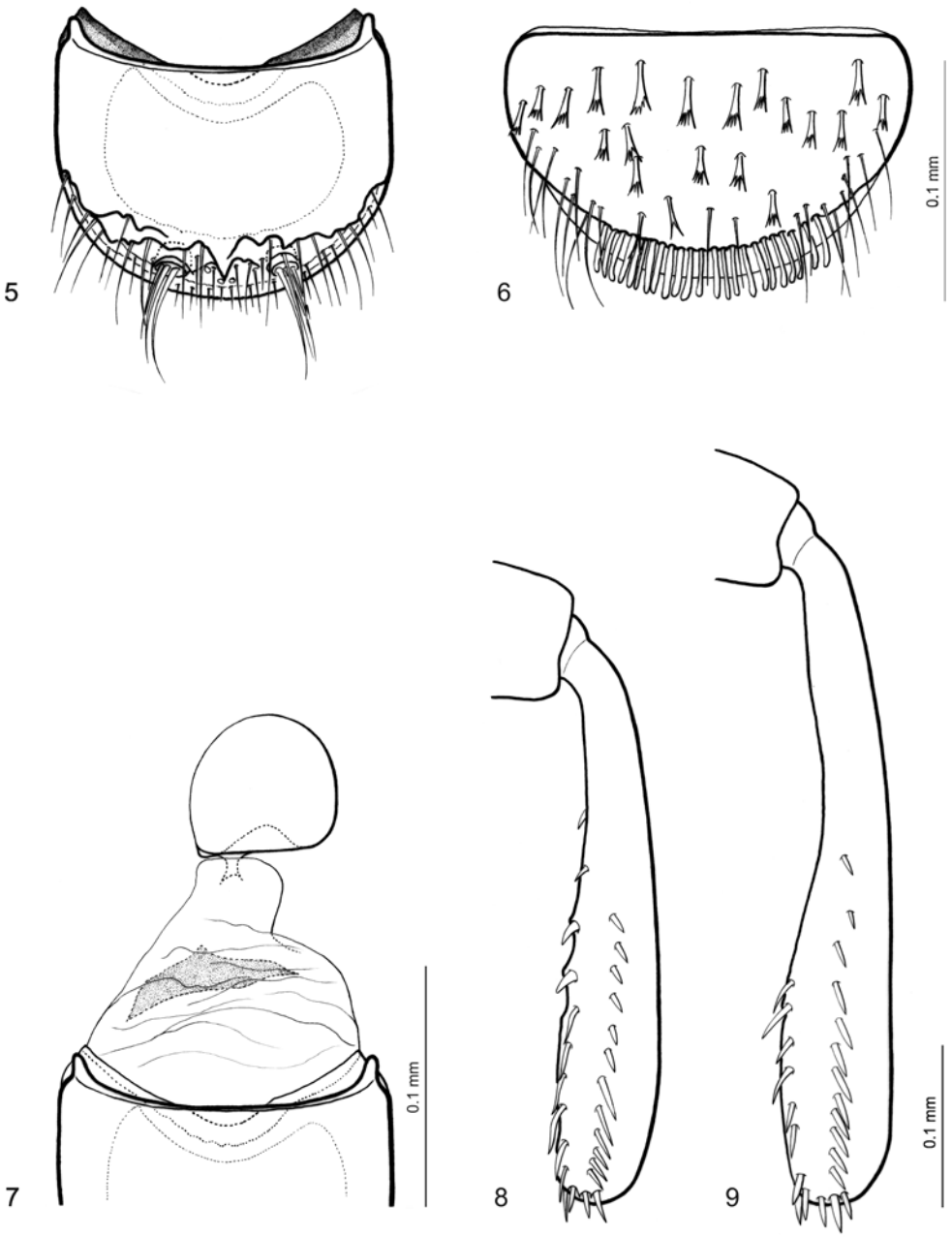
Figs. 2–4: *Hydraena namiae*, 2–3) aedeagus in lateral and dorsal view, 4) male sternite X and spiculum.

Gonocoxite (Fig. 5) more or less as in *H. kitayamai*.

Female tergite X as in Fig. 6. Fringe of vermiform setae not interrupted medially.

A distinctly sclerotized spermathecal capsule was not found. Spermathecal accessory gland and transverse vaginal sclerite as in Fig. 7.

VARIABILITY: The width of the hind tibia is subject to some variation.



Figs. 5–9: *Hydraena namiae*, 5) gonocoxite, 6) female tergite X, 7) spermathecal accessory gland and transverse vaginal sclerite, ventral view, 8) male mesotibia, 9) male metatibia.

Fig. 10: Type locality of *Hydraena namiae*.

ASSOCIATION: At the type locality, this species was found together with *Dryopomorphus nakanei* NOMURA, 1958, *Optioservus yoshitomii* KAMITE, 2015, *Ordobrevia maculata* (NOMURA, 1957), *Paramacronychus crassipes* (CHAMPION, 1927), and *Zaitzeviaria ovata* (NOMURA, 1959) (Elmidae).

DISTRIBUTION: So far known only from the type locality (Toyama Prefecture, Honshu, Japan).

ETYMOLOGY: We are honoured to name this species after Nami Kamite, wife of Yuuki Kamite, famous Riffle Beetle specialist from Nagoya (Japan).

Acknowledgements

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The habitus photograph was made by B. Dvorak (NMW).

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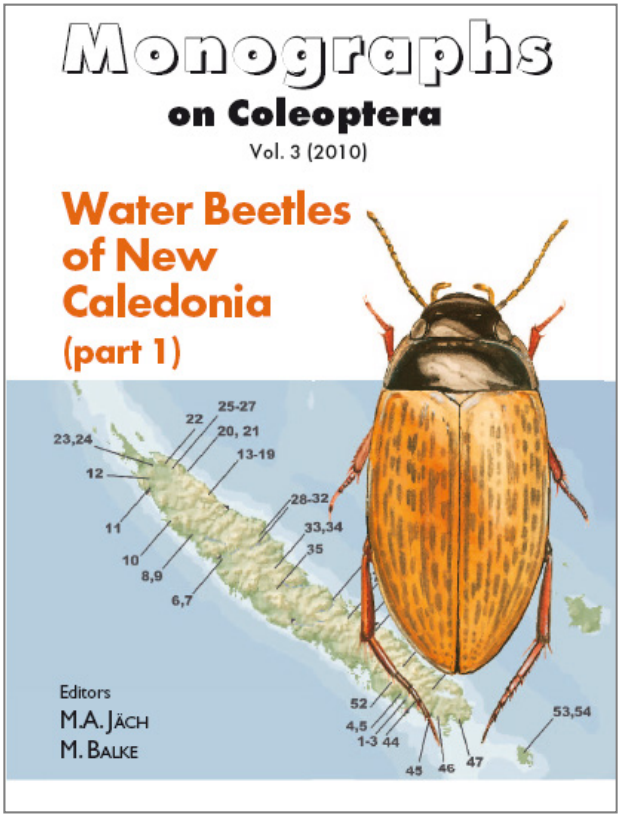

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The contents of this book are listed on page 280.

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