

The SATO Types of Sawflies (Hymenoptera, Symphyta)

By

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Kaku SATO published five papers on the taxonomy of sawflies from 1926 to 1933 wherein he described six new genera and 14 new species from his extensive collections from Japan and Korea. Korean species are particularly well represented since he lived in that country for some years while working at the Agricultural Experiment Station at Suigen, now known as Suweon, Korea. SATO's sawfly collection is now housed in the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, and it is generally in excellent condition. Besides numerous unmounted specimens stored in paper triangles and small celluloid capsules, there are 9,377 pinned specimens in 78 wooden boxes, classified and to a large extent named by SATO himself. Types of all the species described by SATO are in this collection.

In this paper we give information concerning the types from the original description, data on the types, condition of the types, present taxonomic status of the species, and if necessary designate lectotypes. Many of SATO's species have not been studied since they were described. The senior author has put his determination label on each holotype and lectotype except for the holotype of *Okamotoniuss kurisuei* and that of *Megaxyela mikado* which already bear SATO's holotype labels. In many cases SATO figured the wings of the species he was describing; consequently, many types have the wings on one side of the body missing. The wings were probably removed for illustrating and may have been slide mounted, but such slides have not been found in his collection.

For species in the paper coauthored by YANO (YANO & SATO, 1928), no type designations were made, and the number of specimens available was not given. Except for *Okamotoniuss kurisuei*, the species in SATO's 1928 paper were not labeled type, but there are one or two specimens for each species which bear red labels, and they are regarded as the holotype and allotype if both sexes are labeled. The species are arranged chronologically by date as they were described.

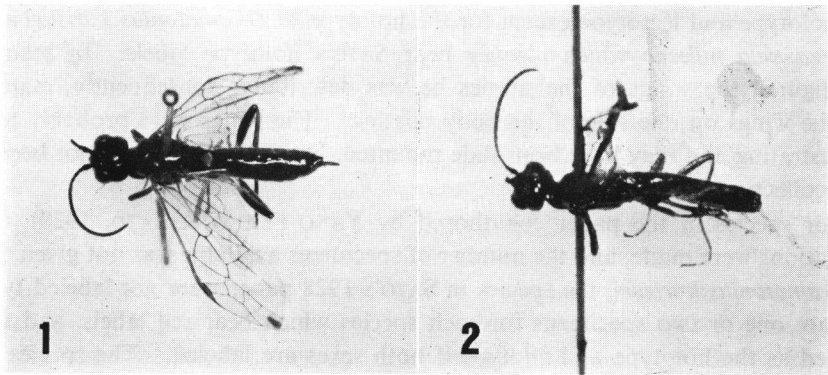
Janus japonicus SATO, 1926: 21, 27. ♀, ♂. "Yokohama, Japan." (Fig. 1)

Two specimens have type labels, a female labeled "Yokohama, Jap., Apr. 26, 1922, coll. C. TERANISHI," "TYPE, 63" and a male labeled "Yokohama, Jap., May 4, 1922, coll. C. TERANISHI," "TYPE, 63." SATO stated that the holotype is a female; therefore, the former specimen is regarded as the holotype, the latter specimen the allotype. The holotype has only three segments remaining to the right antenna. Six females and three males in the collection are labeled "PARATYPE, 63." A valid species in the family Cephidae.

Janus micromaculatus SATO, 1926: 23, 27. ♀, ♂. "Yokohama, Japan." (Fig. 2)

The holotype was not designated by SATO. SATO stated that he had "one male and one female collected by C. TERANISHI on 4th, May, in Yokohama." There are two specimens, each with a type label attached, a male labeled "Yokohama, Jap., May 4, 1922, coll. C. TERANISHI," "TYPE, 65" and a female labeled "Yokohama, Jap., May 6, 1922, coll. C. TERANISHI," "TYPE, 65." The date of capture on the latter specimen differs from SATO's statement, but there are no other likely specimens in the collection and we believe both specimens belong to the type-series. Both specimens are in extremely poor condition. Also in SATO's collection, there are two specimens of this species with neotype labels, a female labeled "Yokohama, Japan, May 11, 1926, coll. Y. OUCHI," "Neotype, 65" and a male labeled "Yokohama, Japan, V-3, 1956, coll. K. SATO," "Neotype, 65." These neotypes have not been published and since specimens exist of the original type-series, even though in poor condition, a neotype cannot be designated. We hereby designate the male specimen labeled "TYPE, 65" as lectotype. This is a valid species in the family Cephidae.

The figure of the male wings of *micromaculatus* in the original description is wrong in lacking the small fuscous spot in cell 3M (third discoidal cell) of the forewing. This was pointed out by GUSSAKOVSKIJ (1935), but GUSSAKOVSKIJ was incorrect in stating "in dem japanischen Texte (p. 26) ist aber nur von 1 Flügelfleck die Rede," SATO's text in Japanese (p. 26) reads "the apex of forewing somewhat pointed and one of the fuscous spots touching this point; the spots smaller than those in female,"



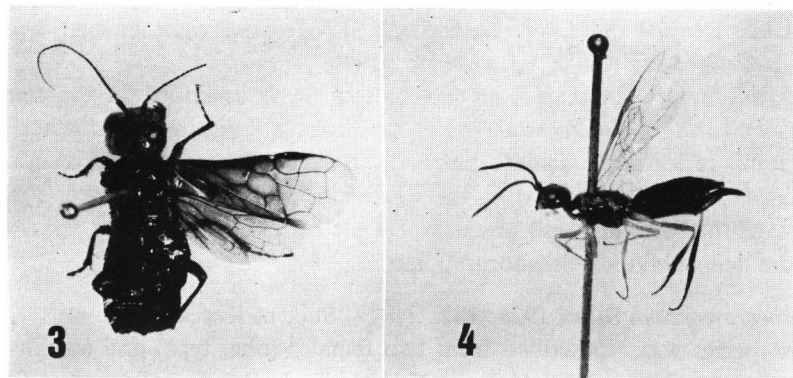
Figs. 1-2. — 1. *Janus japonicus* SATO, holotype. — 2. *J. micromaculatus* SATO, lectotype.

Acantholyda (Acantholyda) nipponica YANO et SATO, 1928: 209, 212. ♀, ♂. "Tokyo, Japan." (Fig. 3)

No specimens labeled types were found. There is a female and a male each bearing the labels "Chalast. No. 189" (red) and "189." The red label probably indicates a syntype. Another male labeled "Meguro, 1917, V, 2," "189" and three females and two males labeled "189" are also in the collection. We hereby designate the female with the red label as lectotype. The lectotype has the left pair of wings, both hind tarsi, apex of the left fore tarsus, and apex of the right antenna missing. A valid species in the family Pamphiliidae.

Janus kashivorus YANO et SATO, 1928: 210, 212. ♀, ♂. "Tokyo, Japan." (Fig. 4)

Two specimens, a female labeled "Tokyo, Japan, May 1918, coll. M. YANO," "TYPE, 197" and a male labeled the same are the only specimens that were collected before 1928 and are regarded as syntypes. We designate the female as lectotype. The lectotype has the left pair of wings missing. A valid species in the family Cephidae.



Figs. 3-4. — 3. *Acantholyda (Acantholyda) nipponica* YANO et SATO, lectotype. — 4. *Janus kashivorus* YANO et SATO, lectotype.

Tomostethopsis metallicus SATO, 1928: 179. ♀, ♂. "Suigen, Korea." (Fig. 5)

This species was "Described from four females (one, type) and seven males (one, allotype) collected by the writer April 1924-1925." Two specimens, a female and a male, bear red labels, and the female which we regard as the holotype is labeled "Suigen, Chosen, Apr. 21, 1924, coll. K. SATO," "31." It has the right pair of wings and the flagellum and pedicel of the right antenna missing.

Tomostethopsis metallicus is the type-species of *Tomostethopsis* SATO described in the same paper. TAKEUCHI (1952) placed it as a synonym of *Eutomostethus* ENSLIN, which, according to us, is correct, but the following combination was never published: *Eutomostethus metallicus* (SATO), n. comb. A valid species in the Tenthredinidae, subfamily Blennocampinae.

Atomostethus flavicollaris SATO, 1928: 179. ♀. "Suigen, Korea." (Fig. 6)

One female bears a red label and is no doubt the holotype since the species was "Described from a single specimen collected by the writer April 25, 1926." The holotype is labeled "Suigen, Chosen, 25 IV 1926, K. SATO," and "211." It has the right pair of wings missing.

This species agrees in most characters with species of the genus *Monophadnus* HARTIG except for the absence of cell M in the hindwing. It could not belong in *Atomostethus* ENSLIN (a synonym of *Eutomostethus* ENSLIN) because of the lack of a prepectus and straight vein 2A & 3A of the forewing. Even though cell M is absent in the hindwing, the presence or absence of this cell is not always constant within genera. We propose the following combination: *Monophadnus flavicollaris* (SATO), n. comb. A valid species of Tenthredinidae, subfamily Blennocampinae.

Zaphymatocera typica SATO, 1928: 181. ♀, ♂. "Suigen, Korea." (Fig. 7)

SATO described *typica* from "four females (one, type) and two males (one, allotype) collected by the writer April 20, 1924 and April 22, 1925." Two specimens bear red labels and are considered to be the holotype and allotype. The holotype is labeled "Suigen, Chosen, 20-IV, 1925, K. SATO," "177." The right pair of wings, right antenna, and right mid tarsus are missing.

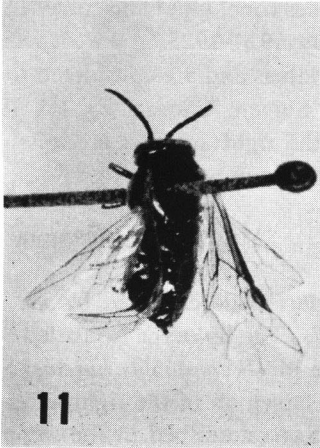
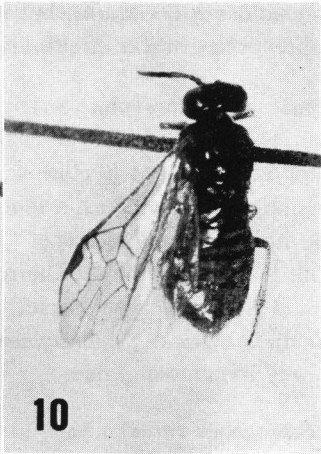
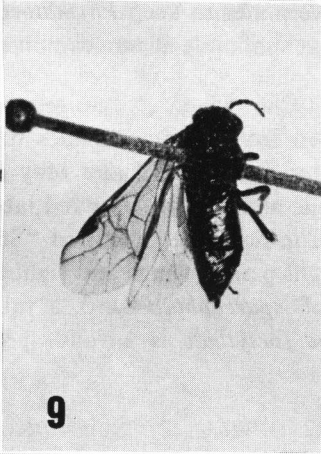
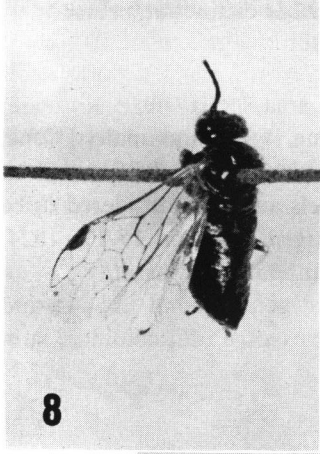
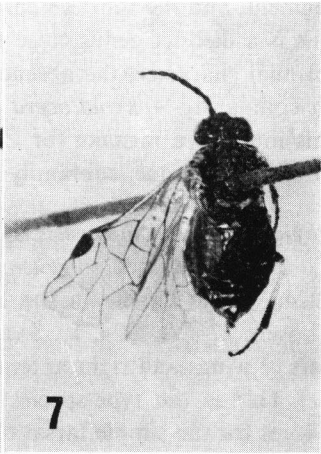
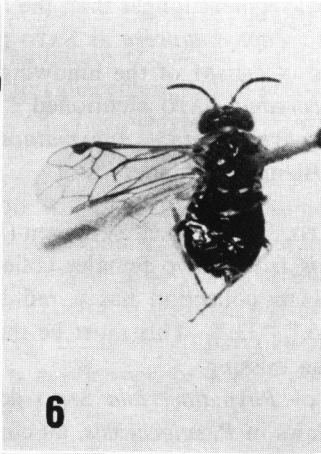
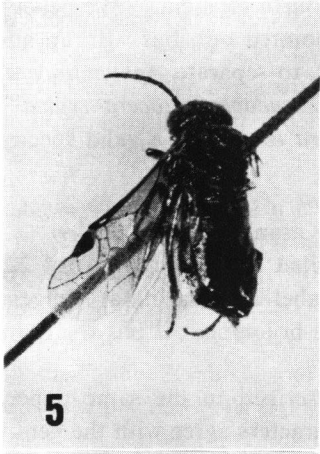
This is the type-species of *Zaphymatocera* SATO described in the same paper. So far as we can tell, *Zaphymatocera* is a valid genus separated from other genera of Blennocampinae having a distinct prepectus by the furcate front tibial spur, simple tarsal claws, presence of cell M in the hindwing, distinct malar space, straight vein 2A & 3A of the forewing, and absence of a pit behind the eyes. A valid species of Tenthredinidae, subfamily Blennocampinae.

Aphymatocera coreana SATO, 1928: 182. ♀, ♂. "Suigen, Korea." (Fig. 8)

This species was "Described from two females (one, type) and a male collected by the writer April 18, 1924 and April 25, 1924." In SATO's collection, a female and a male bear red labels and are considered to be the holotype and allotype. The holotype is labeled "Suigen, Chosen, 25, IV, 1924, K. SATO," "37." The right pair of wings, right antenna, and apical five segments of the left antenna are missing.

Aphymatocera coreana is the type-species of *Aphymatocera* SATO described in the same paper. MALAISE (1933) synonymized this genus with *Phymatoceroopsis* ROHWER, but *Phymatoceroopsis* differs in the long inner tooth of the tarsal claws, presence of a distinct genal carina, a longer and more slender antenna, and the center of the basal plates broadly emarginate behind. *Aphymatocera* is more closely related to *Stethomostus* BENSON, but *Stethomostus* has a narrower malar space, long second antennal

Figs. 5-12. — 5. *Tomostethopsis metallicus* SATO, holotype. — 6. *Atomostethus flavicollaris* SATO, holotype. — 7. *Zaphymatocera typica* SATO, holotype. — 8. *Aphymatocera coreana* SATO, holotype. — 9. *Phymatoceriola suigenensis* SATO, holotype. — 10. *Apareophora forsythiae* SATO, holotype. — 11. *A. coreana* SATO, holotype. — 12. *Okamotoius kurisuei* SATO, holotype.



segment, and the third antennal segment longer than the fourth segment. We believe this is a distinct genus close to *Zaphymatocera* as SATO pointed out, but with an additional character, the absence of cell M of the hindwing, to separate *Aphymatocera*. In comparing *Aphymatocera coreana*, SATO mentioned "*Pseudophymatocera typica*"; this must be a mistake for *Zaphymatocera*. *Aphymatocera coreana* is a valid species of Tenthredinidae, subfamily Blennocampinae.

***Phymatoceriola suigenensis* SATO, 1928: 184.** ♀. "Suigen (Kasan), Korea." (Fig. 9)

SATO described *suigenensis* from "two females collected by the writer April 22, 1924." One female in the SATO collection has a red label and the data "Suigen, Chosen, 22-IV. 1924, K. SATO," "33." This must be the holotype. It has the right pair of wings and right antenna missing.

This is the type-species of *Phymatoceriola* SATO described in the same paper. Except for the simple tarsal claws in *P. suigenensis*, all characters agree with the genus *Phymatocera* DAHLBOM, but we prefer to keep *Phymatoceriola* distinct at present. A valid species of Tenthredinidae, subfamily Blennocampinae.

***Apareophora forsythiae* SATO, 1928: 185.** ♀, ♂. "Suigen, Korea." (Fig. 10)

This species was described from "many females (one, type) and male[s] (one, allotype) collected by the writer during April and May 1924-1926." In SATO's collection, two specimens, a female and a male, bear red labels and are considered to be the holotype and allotype. The holotype is labeled "Suigen, Chosen, 15-IV. 1924, coll. K. SATO," "34." The right pair of wings and right antenna are missing.

This is the type-species of *Apareophora* SATO, a valid genus found in Asia and North America. *Apareophora forsythiae* is a valid species of Tenthredinidae, subfamily Blennocampinae.

***Apareophora coreana* SATO, 1928: 187.** ♀, ♂. "Suigen, Korea." (Fig. 11)

SATO described *coreana* from "many females (one, type) and males (one, allotype) collected by the writer during April and May 1924-1925." Two specimens in the SATO collection, a female and a male, bear red labels and are considered to be the holotype and allotype. The holotype is labeled "Suigen, Chosen, 25. IV. 1924, coll. K. SATO," "36." The apical three segments of the right antenna are missing. A valid species of Tenthredinidae, subfamily Blennocampinae.

***Okamotoni* (sic) *kurisuei* SATO, 1928: 189.** ♀. "Mt. Kongo (Diamond Mountain), Korea." (Fig. 12)

SATO described this species "from a single female collected by Mr. T. KURISUE for whom the species is named, July 28, 1924." The holotype is labeled "Mt. Kongo, Korea, VII-28-1924, T. KURISUE," "Holotype of *Okamotoni* *kurisuei* SATO," "68." The right pair of wings, right fore tarsus, and flagellum of the right antenna missing.

This is the type-species of *Okamotoni* SATO described in the same paper; it is spelled *Okamotoni* in all places except for the heading of the species name. This is

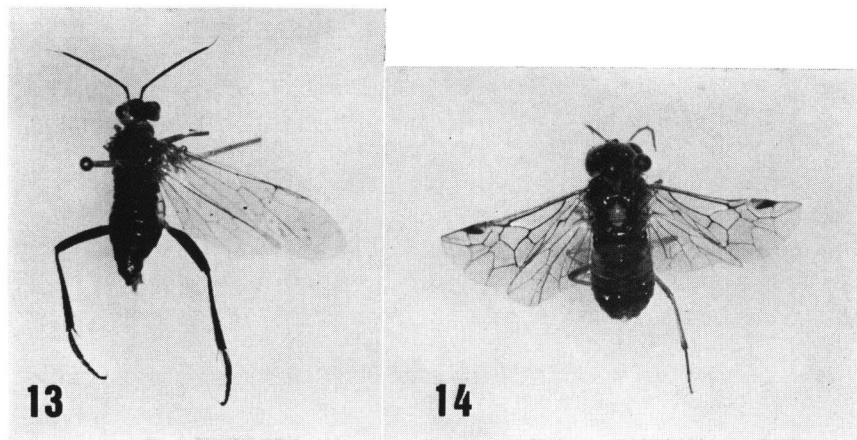
a member of the family Cimbicidae, and MALAISE (1939) synonymized *Okamotoinius* under *Leptocimbex* SEMENOV and made *O. kurisuei* a synonym of *Leptocimbex gracilentata* (MOCSÁRY). We agree with this placement. The holotype of *kurisuei* is placed under a large identification label "68, *Leptocimbex gracilentata* (MOCS.)," undoubtedly by SATO himself.

Megaxyela mikado SATO, 1930: 4. ♀. "Kazan near Suigen, Korea." (Fig. 13)

This was described from "one female specimen in the author's collection collected by him . . . in April 24, 1927." The holotype is labeled "Suigen, Chosen, Apr. 24, 1927, coll. K. SATO," "270," "Type of *Megaxyela mikado* SATO," "*Megaxyela gigantea* MOCS. det. K. SATO, XI-1957." It has the left pair of wings missing. This is a member of the family Xyelidae and is a synonym of *Megaxyela gigantea* MOCSÁRY where it was first placed by TAKEUCHI (1937).

Conaspidia hyalina SATO, 1933: 79. ♀, ♂. "Kamisuwa, Nagano-ken." (Fig. 14)

SATO designated a holotype, allotype, as well as three paratype males in his original description. There are no specimens with type labels and no specimens with red labels in SATO's collection. However, a female labeled "Kamisuwa, Nagano-ken, 6-VII, 1932, coll. K. SATO," "336" completely agrees with the data given in the original description, and we have little doubt that this is the holotype. It is in excellent condition. A valid species in the Tenthredinidae, subfamily Tenthredininae.



Figs. 13-14. — 13. *Megaxyela mikado* SATO, holotype — 14. *Conaspidia hyalina* SATO, holotype.

Acknowledgements

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