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A Revision of Western Palaearctic
Oxytorine Genera
Part IV Genus *Megastylus*
(Hymenoptera, Ichneumonidae)

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Abstract

A key to the Palaearctic species of *Megastylus* SCHIØDTE, [1839], is given. Three new species are proposed: *Megastylus suecicus* sp.n. ♀ (Subgenus *Megastylus* SCHIØDTE, [1839]), *Megastylus elegans* sp.n. ♂ (Subgenus *Dicolus* FOERSTER, [1869]) and *Megastylus tenellus* sp.n. ♀ (Subgenus *Dicolus* FOERSTER, [1869]). The species *Myriarthrus rufipleuris* FOERSTER, 1871, and *Megastylus pumilio* FOERSTER, 1871, are taken to be the same as *Mesoleptus albo-collaris* CRESSON, 1868, = *Megastylus orbitator* SCHIØDTE, [1839]. *Megastylus subtiliventris* (FOERSTER, 1871) is a synonym of *Megastylus pectoralis* (FOERSTER, 1871).

The paper is illustrated by 6 text-figures.

Zusammenfassung

Es wird ein Bestimmungsschlüssel der paläarktischen

Arten der Gattung *Megastylus* SCHIØDTE, [1839] erstellt. Drei neue Arten werden beschrieben: *Megastylus* (*Megastylus*) *suecicus* sp.n. ♀, *Megastylus* (*Dicolus*) *elegans* sp.n. ♂ und *Megastylus* (*Dicolus*) *tenellus* sp.n. ♀. *Myriarthrus rufipleuris* FOERSTER, 1871, *Megastylus pumilio* FOERSTER, 1871, und *Mesoleptus albocollaris* CRESSON, 1868, sind Synonyme zu *Megastylus orbitator* SCHIØDTE, [1839]. *Megastylus subtiliventris* (FOERSTER, 1871) ist ein Synonym zu *Megastylus pectoralis* (FOERSTER, 1871).

Megastylus SCHIØDTE, [1839]

- Megastylus* SCHIØDTE, J.C. - [1839] 1838. Ichneumonidarum, ad faunam Daniae pertinentium, genera et species novae. - Rev.Zool.Soc.Cuvierienne, 1:139.
- Megastylus* FÖRSTER, A. - 1871. Uebersicht der Gattungen und Arten der Familie der Plectiscoiden. - Verh.naturh.Ver.preuss.Rheinl., 28:71-123.
- Megastylus* TOWNES, H. - 1971. The Genera of Ichneumonidae, Part 4. - Mem.Amer.Ent.Inst., 17:205. Ann Arbor.
- Megastylus* ROSSEM, G. van - 1974. The Gravenhorst, Schiødte and Förster types, belonging to the Genus *Megastylus* Schiødte, 1838, with keys to the species. - Tijdschr.Ent., 117:273-285.

Key to Females

The female of *Megastylus elegans* sp.n. is unknown.

1. Postanellus short, 3.5 - 5.0 x as long as wide. Propodeum with no evident impression in its front 0.25 - 0.28 (Subgenus *Megastylus* SCHIØDTE, [1839]).....2
- Postanellus long and slender, 6.0 - 10.0 x as long as wide. Propodeum with a conspicuous transverse impression in its front 0.25 - 0.28, clearly away from post-scutellum (Subgenus *Dicolus* FOERSTER, [1869]).....6
2. Second gastral tergite striate. In typical specimens frontal orbits always with broad yellow lining. Mesoscutum with antero-lateral yellow marks. From these, yellow lines converge and coalesce. Mesopleurum fuscous.....*Megastylus flavopictus* (GRAVENHORST, 1829)

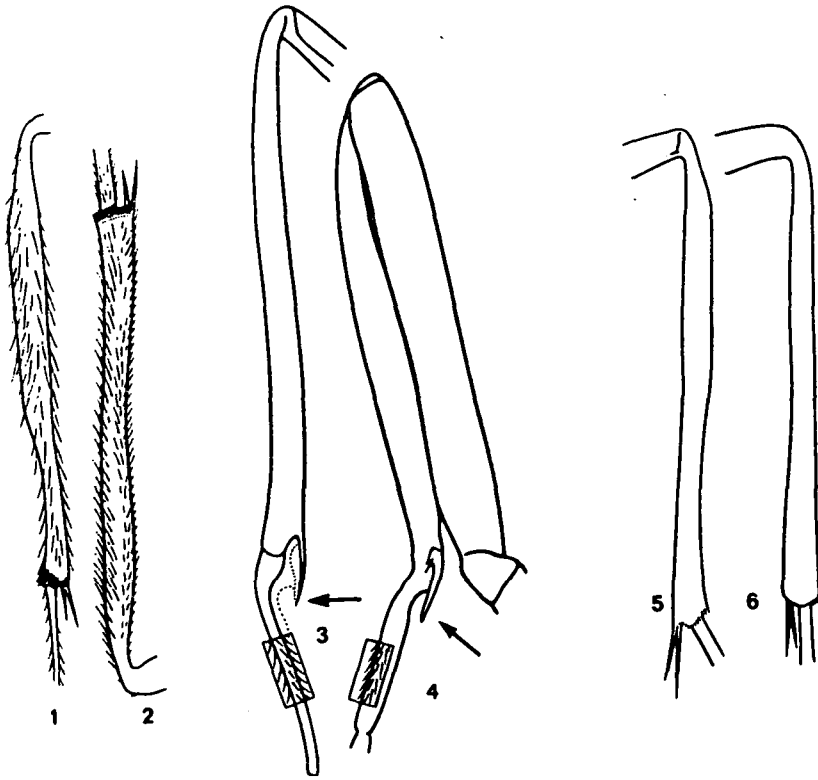
- Second gastral tergite with fine regular microsculpture, alutaceous, never striate.....3
- 3. Frontal orbits, dorso-laterad of antennal insertions, without ivory lining.....4
- Frontal orbits with ivory lining.....5
- 4. Middle femur stout, 4.1-5.0 x as long as wide. Small specimens, front wing 2.5 - 3.9 mm. Face frons and thorax without any ivory or yellowish colouring. Antennal base and legs, including coxae, light brownish. Front and hind femora stout, 3.0 - 3.1 x (1); 5.0 x (3) as long as wide.....
-*Megastylus orbitator* SCHIØDTE, [1839]
- Middle femur slender, 5.1 - 7.0 x as long as wide. Specimens with strong variability in size (front wing 4.0 - 7.0 mm) and colour, the thorax ranging from entirely fuscous to having mesopleurum and pleural parts of propodeum brick-red.....
-*Megastylus cruentator* SCHIØDTE, [1839]
- 5. Ocular-ocellar line (OOL) 3 : postocellar line (POL) 2, or 3 : 3. Clypeus yellow. Face slightly more convex than in *Megastylus suecicus* sp.n., fuscous to yellowish brown. Mesoscutum fuscous, but in some specimens with brownish lining of notauli.....
-*Megastylus orbitator* SCHIØDTE, [1839]
- OOL : POL = 4 : 3. Clypeus and face ivory, more flat than in *Megastylus rufipleuris* (FOERSTER, 1871). Mesoscutum with ivory to yellowish streaks along notauli, coalescing distally.....*Megastylus suecicus* sp.n.
- 6. Hind tibia strikingly slender, 17.5 x as long as apically wide. First gastral segment 3.7 x as long as apically wide.....*Megastylus tenellus* sp.n.
- Hind tibia not so slender.....7
- 7. Hind tibia conspicuously inflated in the 0.7 proximal part, thus causing a constriction in the 0.3 distal part (Fig.1). Front wing 3.3 - 5.5 mm. Frontal orbits dorso-laterad of antennal insertion with or without yellow or ivory lining.....
-*Megastylus pectoralis* (FOERSTER, 1871)
- Hind tibia not constricted in the distal part (Fig.2).....8

8. Basitarsus of front leg about 0.56 of length front tibia, also following tarsal segments of front leg strikingly slender. Antennal cleaner large, causing conspicuous outcurving of basitarsal base (Fig.3). Hind femur not inflated proximally.....
.....*Megastylus excubitor* (FOERSTER,1871)
- Basitarsus of front leg about 0.33 - 0.43 of length front tibia, not slender. Antennal cleaner not causing conspicuously outcurved base of basitarsus (Fig.4). Hind femur somewhat inflated proximally.....
.....*Megastylus impressor* SCHIÖDTE, [1839]

Key to Males

Males of *Megastylus excubitor* (FOERSTER, 1871), *Megastylus suecicus* sp.n. and *Megastylus tenellus* sp.n. are unknown.

1. Hind tibia inflated in its proximal 0.67 part, thus causing a constriction in the 0.3 distal part (Fig.5). Propodeum with a conspicuous transverse impression...
.....*Megastylus pectoralis* (FOERSTER,1871)
- Hind tibia proximally not inflated and with no constriction in its distal part (Fig.6).....2
2. First and second gastral tergites striate. Specimens abundantly marked with yellow: palpi, mandibles, malar space, clypeus, face entirely, frontal orbits, pleuron 1, pronotum, mesoscutum with broad anterior lining and parallel lines coalescing on disk. Mesopleurum for the greater part fuscous.....
.....*Megastylus flavopictus* (GRAVENHORST,1829)
- First and second gastral tergite not striate.....3
3. Propodeum with a conspicuous transverse impression in its 0.25 - 0.28 proximal part, clearly away from notum 3 (postscutellum).....4
- Propodeum with no evident impression in its 0.25 - 0.28 proximal part.....5
4. Postanellus 8 - 9 x as long as apically wide. Hind femur 7.0 - 8.6 x as long as wide. Hind tibia slimly clavate. Mesoscutum evenly convex. Propodeum with two transverse carinae. Face fuscous, clypeus yellow.



Figures 1 - 6 (after van Rossem 1974):
1: *Megastylus pectoralis* (FOERSTER, 1871), ♀, left hind tibia (inner side), Lousberg (Aachen), 15.X.; 2: *Megastylus impressor* SCHIØDTE, [1839], ♀, holotype, right hind tibia (inner side); 3: *Megastylus excubitor* (FOERSTER, 1871), right front leg, female, holotype; 4: *Megastylus impressor* SCHIØDTE, [1839], right front leg, female, Strandmollen; 5: *Megastylus pectoralis* (FOERSTER, 1871), left hind tibia (outer side), male, Aachen; 6: *Megastylus impressor* SCHIØDTE, [1839], left hind tibia (outer side), male, Viborg.

- Pronotum ventrally yellow. Mesoscutum fuscous.....
.....*Megastylus impressor* SCHIØDTE,[1839]
- Postanellus 7.5 x as long as wide. Hind femur 12.3 x as long as wide. Mesoscutum strongly convex, medially (prescutum) conspicuously elevated over lateral scutal areas. Propodeum without transverse and longitudinal carinae. Face and clypeus ivory. Frons with ivory lining of inner orbits of eyes. Pronotum with dorsal and ventral margins ivory. Mesoscutum with medial ivory spot.....*Megastylus elegans* sp.n.
5. Frontal orbits dorso-laterad of antennal insertions without yellow or ivory spot. Thorax entirely fuscous.*Megastylus orbitator* SCHIØDTE,[1839]
- Frontal orbits dorso-laterad of antennal insertions with ivory marking, an extension of the ivory coloured face. Pronotum and mesopleurum ivory or ivory-brownish.....6
- 6.* Mesoscutum for the greater part fuscous, but often medially with vague brownish lining or spot. Juxtacoxal area often yellowish or reddish-brown.....
.....*Megastylus cruentator* SCHIØDTE,[1839]
- Mesoscutum fuscous, medially without brownish marking. Juxtacoxal area fuscous.....
.....*Megastylus orbitator* SCHIØDTE,[1839]

Megastylus suecicus sp.n.

Characteristics of the holotype of *Megastylus suecicus* sp.n.: Labels: Sweden, Skåne, VIII.1969, trap 2, leg. Bo S v e n s s o n, coll. T o w n e s (Ann Arbor). Female. Front wing 4.5 mm. Palpi, mandibles, clypeus, malar space, face and frontal orbits ivory. Clypeus convex, 1.5 x as wide as long. Clypeus, face frons and gena polished. OOL : POL = 4 : 3. Postanellus short (Subgenus *Megastylus* SCHIØDTE,[1839]), 4.0 x as long as wide, following segments short. Pronotum polished, brown, ventrally ivory and with an ivory spot towards wing base. Mesoscutum with vague coriaceous sculpture, with ivory lines along

*) The males in couplet 6 could not be separated with reliable morphological characters.

notauli, coalescing widely. Scutellum yellowish. Propodeum fuscous, with no carinae, except for transverse carina apically. Mesopleurum polished (a conspicuous difference with *Megastylus cruentator* SCHIØDTE, [1839]), yellowish brown with an ivory spot towards insertion of middle coxa. Front and middle coxae and trochanters ivory. Hind coxa yellowish brown. Femora and tibiae yellow, hind tibia apically and tarsus brown. Front and hind femora stout, hind femora 6.0 x as long as wide. First tergite coriaceous, dorsolateral carina developed to stigma, beyond which it is obsolescent. Median dorsal carina not present. Stigma at 0.36 of length. End of first sternite at 0.48 of length. Second tergite coriaceous. All following tergites polished. All sternites polished. All sternites with apical margin ivory. Ovipositor about 0.5 x as long as apical depth of gaster.

Male. - Unknown.

Material examined. - Sweden: ♀, holotype, Skåne, VIII. 1969, trap 2, leg. Bo S v e n s s o n, coll. H. T o w n e s (Ann Arbor); ♀, paratype, Skåne, VII. 1969, trap 4, leg. Bo S v e n s s o n, coll. T o w n e s; Netherlands: ♀, paratype, Asperen (Prov. Zuid-Holland), 8.VI. 1973, leg. Z w a k h a l s, coll. C. J. Z w a k h a l s (Arkel); ♀, paratype, Asperen, 12.VII. 1973, leg. Z w a k h a l s (Arkel).

Megastylus orbitator SCHIØDTE, [1839]

Megastylus orbitator SCHIØDTE, [1839] 1838, Rev. Zool. Cuv., 1:139 (type lost).

Mesoleptus albocollaris CRESSON, 1868, Amer. Ent. Soc., Trans., 2:100, ♀. Determined specimens received from T o w n e s. **Syn.n.**

Megastylus pumilio FOERSTER, 1871, Verh. naturh. Ver. preuss. Rheinl., 28:105, ♀♂. **Syn.n.**

Megastylus pumilio: R o s s e m, G. van - 1974. Tijdschr. Ent., 117:279.

Myriarthrus rufipleuris FOERSTER, 1871, Verh. naturh. Ver. preuss. Rheinl., 28:103, ♀. **Syn.n.**

Megastylus rufipleuris: R o s s e m, G. van - 1974. Tijdschr. Ent., 117:280, ♀.

Remark.- T o w n e s (in litt.) holds the view: "that the name *Megastylus orbitator* SCHIØDTE, 1838, should not be ignored. If the species is not extinct it must be the same as *Megastylus albocollaris* (CRESSON, 1868), as the description fits *M. albocollaris* better than anything else".

The type of *Megastylus orbitator* SCHIØDTE, [1839], is lost. For this reason the designation of a neotype is acceptable. I append some essential characters.

Characteristics of the neotype of *Megastylus orbitator* SCHIØDTE, [1839]: Labels: Sweden, Messaure, 10.V.1972, leg. Karl M ü l l e r, ex coll. T o w n e s (placed in Universitetets Zoologiske Museum, Kjøbenhavn). Female. Front wing 2.9 mm. Postanellus short, 4.5 x as long as apically wide. Propodeum with no evident impression in its front 0.25 - 0.28. Width of face (at level of clypeus) : width of frons (at level central ocellus = 13 : 11. Malar space wide.

Remark. - Of this species F o e r s t e r described an almost fuscous form as *Megastylus pumilio*. The species described by F o e r s t e r as *Myriarthrus rufipleuris* is more ivory marked than *M. pumilio*. This led to the distinction of two species. Close comparison does not give any useful differences.

Characteristics of the female. Front wing 2.5 - 3.9 mm. Palpi and mandible ivory. Clypeus convex, 1.6 x as wide as long, yellow or fuscous. Face polished, yellowish brown to fuscous. Frons polished, lower frontal orbits of eyes with or without ivory lining. OOL : POL = 3 : 2 or 3 : 3. Postanellus short, 3.2 - 4.6 x as long as apically wide (Subgenus *Megastylus* SCHIØDTE, [1839]). Following flagellar segments all of about the same length, short. Pronotum with vague alutaceous sculpture, yellowish to fuscous. Mesoscutum with very weak alutaceous sculpture to almost polished, fuscous with vague brownish lining along notauli, or fuscous. Propodeum coriaceous, fuscous, with pleural and apical transverse carina, with no transverse impression. Mesopleurum with weak alutaceous sculpture, light brown to fuscous. Legs, including coxae, yellowish brown. All femora stout. Front femur 3.3 - 4.0 x, hind femur 5.3 - 6.0 x as long as

wide. First gastral tergite coriaceous, about 2.0 - 2.3 x as long as apically wide. Spiracles almost in the middle. Second tergite coriaceous, following tergites gradually more polished.

Characteristics of the male. Front wing 2.8 - 3.9 mm. Palpi, mandible, clypeus, face, frontal orbits and often scapus ivory. Also specimens occur with face fuscous or with some yellow or ivory marking and frontal orbits without ivory lining. Clypeus convex, 1.1 - 1.5 x as wide as long. Clypeus, face and frons polished. Anterior part of pronotum and often entire pronotum and pleuron 1 ivory. Specimens appear with thorax entirely fuscous. Pronotum almost polished. Mesoscutum fuscous, almost polished, with vague alutaceous sculpture. Scutellum fuscous, in some specimens yellow. Propodeum without transverse impression (Subgenus *Megastylus* SCHIØDTE, [1839]), only pleural carina present, sculpture coriaceous, fuscous. Mesopleurum almost polished, yellowish brown, upper part fuscous or entire mesopleurum fuscous. Front and middle coxae yellow to ivory, hind coxae brown. Legs yellow, hind femur rather stout, about 5.5 x as long as wide. First and second gastral tergite coriaceous, following tergites more polished. Third and fourth tergite yellowish.

Material examined. - Austria: ♀, Kärnten, Himmelberg, 1000 m, 11.VIII.1980, leg. & coll. C. J. Z w a k h a l s. Britain: ♀, Leicester, 16.VII.1972, leg. Jennifer O w e n, coll. v a n R o s s e m; ♂, Leicester, 13.VIII.1972, leg. Jennifer O w e n, coll. v a n R o s s e m (2 British specimens ex coll. T o w n e s). Netherlands: 11 ♀♀, Asperen (Prov. Zuid-Holland), 29.VI., 8.VII., 12.VII., 19.VII., 23.VII., 6.VIII (2), 12.VIII., 21. VIII., 27.VIII., 10.IX.1973, 2 ♂♂, 31.VII.1973; Arkel (Prov. Zd Holl.) ♂, 1.VII.1967, ♀, 20.VIII.1967, leg. & coll. C. J. Z w a k h a l s; Sweden, ♂, Ljungby, 150 m, 17.VIII.1958, leg. David T o w n e s, coll. v a n R o s s e m; ♀, Messaure, 4.VII.1971, leg. Karl M ü l l e r, coll. v a n R o s s e m (2 Swedish specimens ex coll. T o w n e s); ♀, neotype, Messaure, 10.V.1972, leg. Karl M ü l l e r, ex coll. T o w n e s (Universitetets Zoologiske Museum, København).

***Megastylus pectoralis* (FOERSTER, 1871)**

Dicolus pectoralis FOERSTER, 1871, Verh. naturh. Ver. preuss.Rheinl., 28:97 (♂).

Dicolus subtiliventris FOERSTER, 1871, Verh.naturh.Ver. preuss.Rheinl., 28:97 (♀). **Syn.n.**

Megastylus pectoralis: R o s s e m, G. van - 1974. Tijdschr.Ent., 117:282.

Megastylus subtiliventris : R o s s e m, G. van - 1974. Tijdschr.Ent., 117:283.

In 1974 I wrote that the holotype of *Dicolus subtiliventris* FOERSTER, 1871, does not differ essentially from the *Dicolus pectoralis* FOERSTER, 1871, lectotype. The only points of difference are the smaller size of *Dicolus subtiliventris* and the absence of the yellow spot on the frontal orbit. There was no male type material in F ö r s t e r's collection.

T o w n e s informed me that he considered *Megastylus subtiliventris* (FOERSTER, 1871) as a synonym of *Megastylus pectoralis* (FOERSTER, 1871). Occasional females have a very faint orbital spot, thus intermediate between *Megastylus subtiliventris* (FOERSTER, 1871) and *Megastylus pectoralis* (FOERSTER, 1871).

***Megastylus elegans* sp.n.**

Characteristics of the holotype of *Megastylus elegans* sp.n.: Labels: Sweden, Messaure, 25.VII.1971, leg. Karl M ü l l e r, coll. T o w n e s (Ann Arbor). Male. Front wing 6.0 mm. Palpi, mandible, clypeus, lower gena, face and frontal orbits ivory. Clypeus strongly convex, 1.1 x as wide as long. Clypeus, face frons and gena finely coriaceous. Postanellus long (Subgenus *Dicolus* FOERSTER, [1869]), 7.5 x as long as wide. Pronotum with dorsal and ventral margin broadly ivory. Mesoscutum finely coriaceous, strongly convex, the prescutum conspicuously elevated over lateral scutal areas. Mesoscutum medially with an ivory spot. Scutellum coriaceous, with an ivory spot. Propodeum fuscous and more roughly coriaceous than the mesoscutum. Only pleural carina present and a conspicuous transverse impression at 0.28 of length (Subgenus *Dicolus* FOERSTER, [1869]). Mesopleurum fuscous, coria-

ceous. Front and middle coxae and trochanters ivory. Hind coxa fuscous. All femora and tibiae very slender, hind femur 12.3 x as long as wide. Also tarsi very slender, hind tarsus as long as hind tibia. Front and middle legs yellow. Hind leg fuscous. Gaster very slender, fuscous. First segment 4.2 x as long as apically wide, coriaceous. Spiracles at 0.38 of length.

Female. - Unknown.

Material examined. - Sweden: ♂, holotype, Messaure, 25.VII.1971, leg. Karl M ü l l e r, coll. H. T o w n e s (Ann Arbor).

Megastylus tenellus sp.n.

Characteristics of the holotype of *Megastylus tenellus* sp.n.: Labels: Sweden, Lappland, Jokkmokk, 11.VII.1974, leg. Z w a k h a l s, coll. C. J. Z w a k h a l s (Arkel). Female. Front wing 4.5 mm. Palpi and mandible yellow. Clypeus strongly convex, 1.3 x as wide as long, brown. Face, frons and gena fuscous, polished. Postanellus slender, 7.6 x as long as wide (Subgenus *Dicolus* FOERSTER, [1869]). Pronotum with weak coriaceous sculpture, fuscous, anterior margin laterally with a white spot. Mesoscutum polished, fuscous. Propodeum fuscous, with pleural and apical transverse carina and with a transverse impression at 0.28 of length. The impression traversed by remnants of the lateral longitudinal carinae. The anterior part of propodeum vaguely coriaceous, the posterior part more roughly coriaceous. Mesopleurum polished, brown. Front and middle coxae and trochanters whitish. Hind coxae brown. Front and middle legs light brown, long and slender, including the tarsi. Hind leg long and slender, brown. The hind tibia 17.5 x as long as apically wide (the main characteristic). The first gastral segment 3.7 x as long as apically wide, coriaceous. The stigmata at 0.39 of length. Second tergite coriaceous. Following tergites more polished.

Male. - Unknown.

Material examined. - Sweden: ♀, holotype, Lappland, Jokkmokk, 11.VII.1974, leg. Z w a k h a l s, coll. C. J. Z w a k h a l s (Arkel). Netherlands: ♀, paratype,

Overveen (Prov. Noord-Holland), 18.X.1974, leg. Z w a k h a l s, coll. C. J. Z w a k h a l s.

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I wish to express my gratitude to Dr. H.K. T o w n e s (Ann Arbor) for offering me the specimens of two undescribed *Megastylus* species from Sweden and a set of specimens of *Megastylus rufipleuris* (FOERSTER, 1871) (= *Megastylus orbitator* SCHIØDTE, [1839]). Dr. T o w n e s also read the manuscript and advised on several points.

I am indebted to Drs. C.J. Z w a k h a l s (Arkel, Netherlands) for material of *Megastylus suecicus* sp.n., *Megastylus orbitator* SCHIØDTE, [1839] and *Megastylus tenellus* sp.n.

Literature

R o s s e m, G. van - 1974. The Gravenhorst, Schiødte and Förster types, belonging to the Genus *Megastylus* Schiødte, 1838, with keys to the species. - Tijdschr.Ent., 117:273-285.

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