

New host record of *Bracon intercessor* Nees f. *megasomides* Strand (Hymenoptera: Braconidae), a parasite of *Agapanthia villosoviridescens* DeGeer (Coleoptera: Cerambycidae) in salt marshes

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Bracon intercessor f. *megasomides* Strand, 1928 (Braconidae: Braconinae) is recorded for the first time as a parasite of *Agapanthia villosoviridescens* DeGeer (Cerambycidae). This form is redescribed and illustrated; both species and form are new to the fauna of The Netherlands.

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Introduction

In salt marshes of the Westerschelde estuary flowering stems of the halophyte *Aster tripolium* Linnaeus frequently contain stem-boring larvae of the Cerambycid *Agapanthia villosoviridescens* DeGeer. These larvae are present from August until May, when pupation and emergence of the imagines occur (Hemminga & Van Soelen, 1988). During the study of the life cycle of *Agapanthia* occasionally parasitic larvae have been found on or in the proximity of dead *Agapanthia* larvae in the flowering stems. Furthermore, whitish (in winter; in April greenish by algae) cocoons were found in flowering stems which had contained *Agapanthia* larvae, judging from the marks on the stems. These observations led to the present study. The adult parasites proved to belong to the extremely variable *Bracon intercessor* Nees, 1834. However, the specimens are atypical because of the high number of antennal segments of female (39-42), the black hind coxae, tegulae, apex of hind tibia and hind tarsus dark brown or black and their size (length of fore wing 4-5 mm). The name available for this form is *megasomides* Strand, 1928, which has been hardly used so far despite its distinctness. The limited knowledge about its biology is given in this paper because in future it may help to decide whether this form is a separate species or not. This is the first record of this form for W. Europe. It is also the first record of the huge sub-family Braconinae as a parasite of an *Agapanthia* species and the first host record of the form *megasomides*.

The host spectrum of *B. intercessor* is very diverse; all are holometabolous larvae living concealed, especially in stems of herbs, but Cerambycidae were unknown as hosts. According to Tobias (1986) it is a parasite of Curculionidae (especially *Anthonomus* and *Lixus* spp.) and Attelabidae (Coleoptera), of Momphidae and

Tortricidae (Lepidoptera) and even of Eurytomidae (Hymenoptera). In the collections of the Nationaal Natuurhistorisch Museum (Rijksmuseum van Natuurlijke Historie) there is a typical female of *B. intercessor* with completely yellowish hind legs and palpi reared from *Aegeria culiciformis* (L.) (Lepidoptera: Sesiidae) in *Betula* spec. (Netherlands, Putten). It is not unlikely that, considering the ecologically diverse habitats, two valid species are involved, but more of the typical specimens of *B. intercessor* should be reared to obtain information on the variation of the typical form.

For the terminology used in this paper, see van Achterberg, 1988 (p. 5-11).

Redescription

Bracon intercessor Nees f. *megasomides* Strand, 1928 (figs. 1-13)

Bracon intercessor Nees, 1834: 71; Shenefelt, 1978:1494-1496; Tobias, 1986: 125 (enumeration of synonyms and hosts).

Bracon intercessor var. *major* Fahringer, 1927: 321 (nec Brullé, 1846).

Bracon intercessor var. *megasomides* Strand, 1928: 44 (replacement name); Shenefelt, 1978: 1495-1496.

Material.— Reared specimens (9 ♀♀ + 14 ♂♂; Nationaal Natuurhistorisch Museum, Leiden; Museum Budapest) all from *Agapanthia villosoviridescens* DeGeer in *Aster tripolium* L. in salt marshes in Waarde and Ellewoutsdijk (Netherlands; Zeeland). Additionally 2 ♀♀ from Eerde and Oisterwijk (Netherlands; Overijssel and Noord Brabant, respectively). No type-material could be traced; the type-location of f. *megasomides* is problematic; Fahringer (1927) refers in his description to Szépliget, but both citations of Szépliget given in the description by Fahringer do not contain any clue to a variety of *intercessor* as claimed by Fahringer.

Length of body of ♀ 4-6 mm, of fore wing of ♀ 4.0-5.5 mm, of fore wing of ♂ 2.8-3.6 mm.

Head.— Antennal segments of ♀ 39(1), 40(1), 41(1), 42(2) and of ♂ 40(3), 41(2), 42(1), length of third antennal segment about 1.2 times fourth segment, length of third, fourth and penultimate segments of figured specimen 1.9, 1.6, and 1.5 times their width, respectively (figs. 5, 9); length of maxillary palp about 0.8 times height of head; length of eye in dorsal view about 1.6 times temple (fig. 2); temple gradually narrowed posteriorly; head distinctly wider at level of eyes than posteriorly (fig. 2); eyes with some short setae (fig. 3); frons smooth or granulate, with median groove, flat medially and slightly concave laterally, and only setose laterally; face rather flat and largely smooth, long setose except on medio-ventral triangle above clypeus; clypeus flat and smooth; length of malar space about 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma about 1.5 times its height; episternal scrobe round and deep (fig. 6); mesopleuron smooth; notauli shallow and complete (fig. 10); mesoscutal lobes rather convex, smooth and setose along notauli and posteriorly (fig. 10); surface of propodeum smooth, but medio-posteriorly with some short oblique rugae (fig. 10), without median carina; propodeal spiracle round, rather large and situated just behind middle of propodeum (fig. 6).

Wings.— Fore wing (measurements of figured specimen; fig. 6): angle between veins 1-SR and C+SC+R about 75° (fig. 1); cu-a vertical and interstitial; 1-SR+M straight; r:3-SR:SR1 = 6:16:27; 2-SR:3-SR:r-m = 11:16:8.

Legs.— Hind coxa smooth; setae long (fig. 7); tarsal claws with rather acute lobe (fig. 8); length of femur, tibia and basitarsus of hind leg of figured specimen 3.4, 8.6 and 5.4 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus; hind tibia without comb at inner side apically.

Metasoma.— Length of first tergite about equal to its apical width (fig. 13), its surface widely depressed and crenulate laterally, medio-posteriorly elevated and largely reticulate, remaining surface largely smooth (fig. 13), basally deeply impressed, its dorso-lateral carinae complete and strong (fig. 13) and dorsal carinae absent; second tergite with smooth and parallel-sided area medio-basally (fig. 13), remaining part largely longitudinally rugose with some punctures posteriorly (fig. 13); second suture deep, crenulate and sinuate (fig. 13); third tergite obliquely wrinkled-aciculate, without transverse subapical groove or antero-lateral grooves (fig. 6); fourth-sixth tergites transversely wrinkled-coriaceous, and seventh tergite smooth (fig. 6); second and third tergites with sharp lateral crease (fig. 6); ovipositor normally straight (in figured specimen bent artificially), with distinct dorsal notch and with a few ventral teeth; length of ovipositor sheath 0.43-0.54 times fore wing, and normally setose; hypopygium large, medio-ventrally keeled (boat-like), its apical third upcurved (fig. 6), and without weakly sclerotized or pigmented patch laterally.

Colour.— Black; inner orbits, patch beside stemmaticum, lower temple largely, malar space largely, metasoma behind first tergite (but apex of first tergite brownish and second tergite medio-basally black), bases of fore and middle tibiae, basal half of hind tibia, trochantelli apically, femora partly (especially middle femur largely dark brown, both other femora have their outer face rather infuscated), and spurs (orange) yellowish-brown; palpi, pterostigma and veins dark brown; wing membrane infuscated, except for two pale patches below pterostigma.

Variation.— The general colour pattern in *B. intercessor* Nees seems to be extremely variable, specimens may be largely yellowish or completely black, except for the yellowish ventral parts and margin of the metasoma. The specimens reared from *Agapanthia villosoviridescens* DeGeer have a comparatively high number of antennal segments (39-42, both sexes), also in small male-specimens half the size of females. It is peculiar in this form that the number of antennal segments is not or hardly related to the size of the body or of the fore wing. Additionally the legs are partly black (hind coxa, hind tarsi, apex of hind tibia), as main part of head and mesosoma. Metasoma behind first tergite usually largely (orange) yellowish-brown, with first tergite largely black, but medio-posteriorly yellowish; several specimens have a very variable amount of black on the second-sixth tergites, but laterally always yellowish. Tegulae usually black, but especially of males often yellowish, palpi dark brown. Females have wing membrane distinctly infuscated which is often less in males, especially the distal half of the fore wing; hypopygium with median keel and apical third more or less upcurved. The latter is typical for all *intercessor*-specimens, together with the fine, more or less coriaceous sculpture of the third-sixth tergites and the length of the ovipositor sheath 0.4-0.5 times fore wing (about as long as metasoma). Females of typical *B. intercessor* seem to be somewhat smaller (3-4 mm), which is not apparent among males of both forms. Peculiar of the specimens

reared from *Agapanthia* is the smooth frons; in other Dutch specimens of *f. megasomides* the frons is largely granulate.

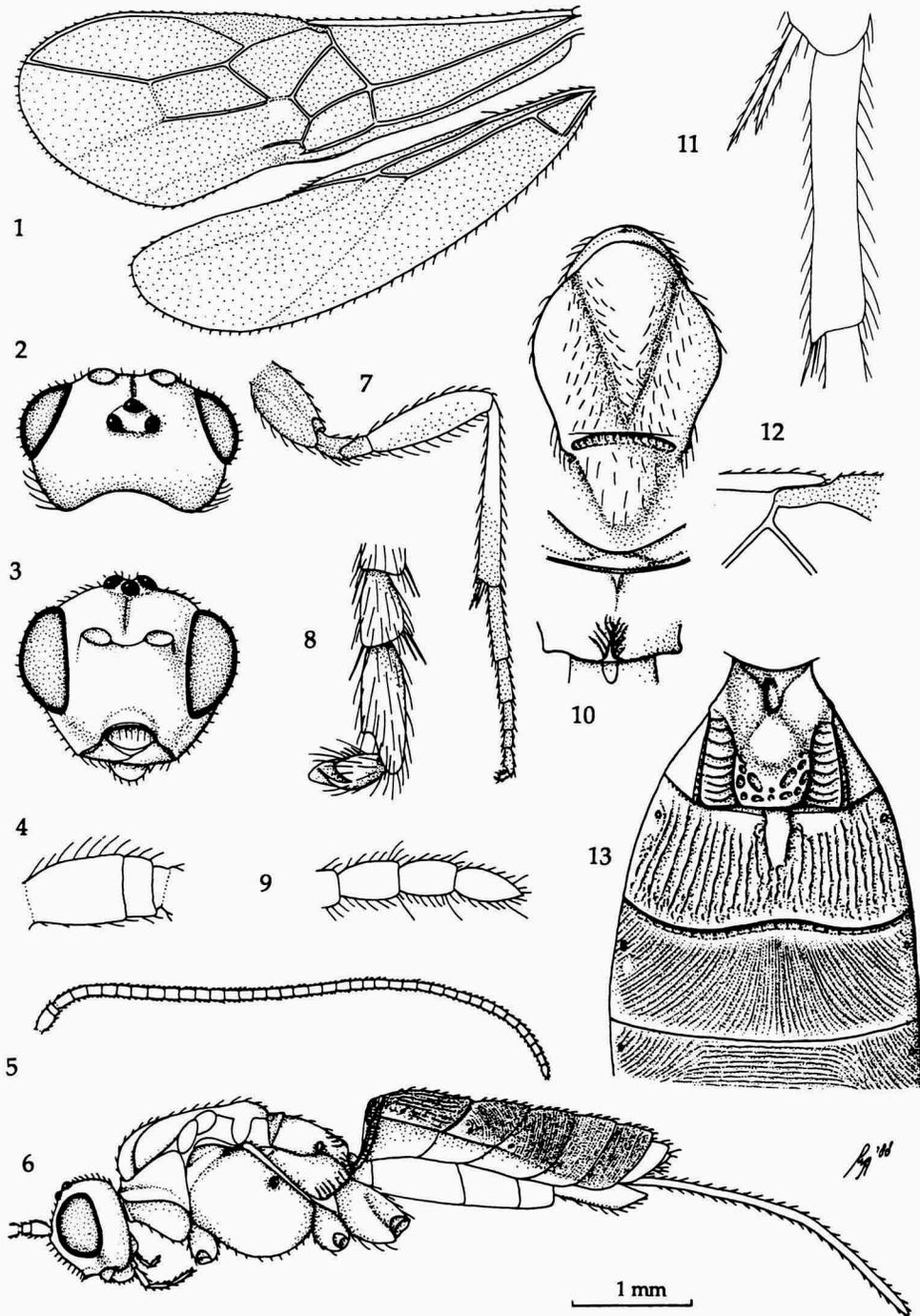
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Figs. 1-13, *Bracon intercessor* f. *megasomides* Strand, ♀, The Netherlands, Waarde. 1, wings; 2, head, dorsal aspect; 3, head, frontal aspect; 4, scapus, outer lateral aspect; 5, antenna; 6, habitus, lateral aspect; 7, hind leg; 8, hind tarsal claw; 9, apex of antenna; 10, mesosoma, dorsal aspect; 11, hind basitarsus, lateral aspect; 12, detail of vein 1-SR of fore wing; 13, first-third metasomal tergites, dorsal aspect. 1, 5-7: scale-line (= 1 ×); 2, 3, 10, 12, 13: 2 ×; 4, 8, 9: 5 ×; 11: 4.5 ×.