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Notes on old and mostly forgotten species of Aphidiidae (Hymenoptera). I.

With 4 textfigures

This is the first in a series of articles which will deal with descriptions or notations of species and genera of the family Aphidiidae contained in older publications. Because most publications that appeared during the 18th and early 19th century are so rare to be not readily available in the average library, taxa published in these papers (though often validly described) were often overlooked later, or, more commonly, were wrongly interpreted and classified.

Those names represent a danger to stability and continuity of nomenclature. Article 23 b of the International Code of Zoological Nomenclature (I. C. Z. N.), as adopted by the XV. International Congress of Zoology and interpreted recently by the XVI. International Congress, at Washington, D. C., sets up directions to deal with senior synonyms that are forgotten names (nomina oblita). In most cases, a junior synonym will be protected against a nomen oblitum if that latter name has remained unused as a senior synonym for more than 50 years and is placed on the Official Index of Rejected Names.

In cases of homonymy, any old and forgotten name, if available, causes the rejection and replacement of a junior homonym (Arts. 52—60, I. C. Z. N.); in cases of a primary homonym this rejection is permanent (Art. 59a). As even carefully compiled catalogues often are incomplete and seem to be based more commonly on previous lists or on revisions than on the original literature, the use of catalogues protects the taxonomist against the pitfalls of homonomy only incompletely.

This series of articles will deal exclusively with primary information pertaining to members of the hymenopterous family Aphidiidae. Primary information in this context means: (a) the description (definition, indication) or naming of a taxon for the first time, regardless of whether or not such action was nomenclatorially valid; and (b) any original contribution on taxonomy, life history, distribution, etc., of a taxon, regardless of whether or not that taxon was identified correctly. Species that were only listed or quoted from other publications (= secondary information) will not be discussed, even when distinguishing characters were included. All quotations will be based on the original publication unless otherwise stated. However, subsequent interpretations and other pertinent information will also be used where these are thought to help clarification. If it should become apparent in a particular case that stability of nomenclature would be served best by an application to the International Commission of Zoological Nomenclature for use of its plenary powers, this will be done elsewhere and shall not be precluded by any decision taken herein.

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I. Species described by J. T. C. Ratzeburg

Dr. JULIUS THEODOR RATZEBURG (1801—1871) was one of the founders of forest entomology in Germany. He wrote two books that are of interest to the student of the family Aphidiidae. The first, "Die Forst-Insecten", appeared in three separately-published volumes between 1837 and 1844. The third volume contained a short description of an aphid parasite, *Ichneumon* (*Aphidius*) *flavipes* RATZEBURG.

The second book was "Die Ichneumonen der Forstinsecten" and was planned as a descriptive appendix to the "Forst-Insecten". It, too, consisted of three volumes which appeared in 1844, 1848, and 1852, and which contained extensive and relatively detailed notes on the taxonomy, life history, and economic importance of the ichneumon-flies attacking forest insects, as far as they were known to occur in Germany and in neighboring countries. Each volume contained descriptions of and notes on several species of the genus *Aphidius* sensu RATZEBURG and, in addition, volume 3 contained the description of an aphidiid which the author had included in the genus *Bracon* FABRICIUS.

Altogether seven species of the family Aphidiidae were described by RATZEBURG as new to science. They are as follows (listed as named originally): *Aphidius aphidivorus, A. duodecimarticulatus, A. flavidens, A. flavipes, A. inclusus, A. wissmannii*, and *Bracon aphidiiformis*. He described two taxa of the generic level: *Orthostigma*, to contain *Aphidius flavipes*, and *Achoristus*, with the type species *Bracon aphidiiformis*. In addition, he quoted various other species (occasionally noting distinctive features) that had been described by HALIDAY, NEES AB ESENBECK, BOUCHÉ, and WESMAEL. As RATZEBURG did not add any original knowledge, these taxa will not be dealt with here.

RATZEBURG's contribution to the taxonomy of aphid parasites differs from the work of most of his contemporaries by a certain reluctance to erect new taxa and by the importance he attributed to biological observations. His morphological descriptions are sufficiently detailed to enable the identity of the parasite to be recognized when host data and life history are taken into account. It should be noted that RATZEBURG's collection, which was in custody of the former Forstliche Hochschule Eberswalde, near Berlin, cannot be consulted to verify the interpretation of the original description. The greater part of the authentic material was destroyed (according to all information available) during World War II. However, some of the type specimens (mostly of the hymenopterous families Braconidae and Chalcididae) were found in the remains of the old Eberswalde collection which was kept in the former Institut für Forstzoologie der Forstwirtschaftlichen Fakultät Eberswalde der Humboldt-Universität zu Berlin. They were transferred to and, subsequently, placed in custody of the Deutsches Entomologisches Institut, Eberswalde.[1]

[1] I am greatly obliged to Dr. habil. GÜNTER MORGE who kindly informed me about the present location of some of RATZEBURG's type material.

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1. Genus *Aphidius* sensu RATZEBURG

RATZEBURG (1844 b) originally retained LINNÉ's generic concept of the Hymenoptera. Thus, *Aphidius* NEES ranked as a subgenus of the genus *Ichneumon* LINNAEUS. That arrangement was not continued in the more detailed "Ichneumonen der Forstinsecten". Starting with the first volume of that publication, RATZEBURG (1844 a) classified *Aphidius* as a distinct genus. In this and in the characters used to separate *Aphidius* from other genera of the "Braconides" the author largely followed WESMAEL (1835). Later, RATZEBURG (1848) quoted HALIDAY's (1833 a, b, 1834) division of the genus into subgenera and sectiones. Though he apparently considered these entities to be valid, he did not use them for nomenclatorial purposes. That system was not changed in the third volume of the "Ichneumonen" (RATZEBURG, 1852).

The generic concept is evident from the diagnosis of the genus which RATZEBURG based essentially on the following characters:

Fore wing with one recurrent vein; subdiscoideus ["nervus parallelus"] interstitial; radial cell open distally. Tips of mandibles touching when closed, mandibles not widely separated. Abdomen petiolate or almost so.

It follows from the above that the genus *Aphidius* sensu RATZEBURG does not correspond in its systematic content to the genus *Aphidius*, as understood at present, but equals the family Aphidiidae as outlined and defined by MACKAUER (1961).

2. *Aphidius aphidivorus* RATZEBURG

A[*phidius*] *aphidivorus* RATZEBURG, 1844 a, Ichn. d. Forstins., **1**, (50, 51, 52, 53) [Orig. descr.]; 24 [Host: "*Aphis*"]. — RATZEBURG, 1848, Ichn. d. Forstins., **2**, 216 [Host: "*Aphis*"]. — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 61 [Mentioned], 253 [Host: "*Aphis*"].

The parasite was described only sketchily by RATZEBURG who regarded *aphidivorus* either as an economically unimportant species or as of uncertain systematic position (RATZEBURG, 1844 a, p. 22). The species was mentioned on several pages to illustrate morphological characteristics of the genus *Aphidius* and to compare *aphidivorus* with other parasites known to RATZEBURG. A green aphid on rose was recorded as host. That aphid was listed as of the genus *Aphis* in the host-parasite indices of the three volumes of the "Ichneumonen". However, this record cannot be taken literally as the genus *Aphis* sensu RATZEBURG corresponds to the families Lachnidae + Chaitophoridae + Callaphididae + Aphididae as understood today and, occasionally, the name was even applied to any species of the superfamily Aphidoidea.

The lack of a definite and concise description does not render *A. aphidivorus* a nomen nudum. The various details given by the author constitute a valid description under Articles 11, 12, and 17 (I. C. Z. N.). The name *aphidivorus* RATZEBURG, therefore, is available for all nomenclatorial purposes. RATZEBURG's scanty information may be compiled to form the following description:

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Head, thorax, and propodeum smooth. Pterostigma of the fore wing broadly triangular; cubitus complete basally, separating cubital and discoidal cells, lacking towards tip of the wings; cubital cells not separated by crossveins, forming one large cell which is confluent distally with the open radial cell. Colour: mostly black.

Types: (authentic material lost).
Locus typ.: ? Eberswalde, Germany.
Hab. typ.: „aus Rosenblattläusen".

The venation of the fore wing, as described originally, excludes *aphidivorus* from the genus *Aphidius* NEES and refers it to the subfamily Prainae. Here it falls into genus *Praon* HALIDAY, the only genus of that subfamily that is characterized by a smooth propodeum. Because RATZEBURG did not note the sex of his specimens (he possibly knew both males and females as he reared and observed the parasite in the laboratory), we cannot be completely assured as to the specific identity of *Praon aphidivorum* (RATZEBURG), **n. comb.** There is some probability that the name refers to *P. flavinode* sensu auctt., nec HALIDAY, 1833. This is supported by the fact that the parasite attacks *Macrosiphum rosae* (LINNAEUS), the most common of the green aphids on rose bushes throughout Germany. The presence of the first abscissa of the cubitus in *aphidivorum* would substantiate that interpretatation.

3. *Aphidius duodecimarticulatus* RATZEBURG

A[*phidius*] 12-*articulatus* RATZEBURG, 1852, Ichn. d. Forstins., **3**, 62–63 [Orig. descr.]; 32 [Compared with *Bracon aphidiiformis* RATZEBURG], 253 [Host: *Tipula* "*Salicina*"].

The description of the species was based on two specimens. It is relatively short but contains enough circumstantial evidence to permit an interpretation:

Fore wing with two cubital cells, the first one confluent with the first discoidal cell ["äußere Discoidalzelle"]; venation corresponding to that of *Aphidius* (*rosarum*, sensu WESMAEL). Antennae 12-segmented, the last segment not divided. Abdomen as long as head and thorax combined. Petiole almost one fourth as long as the abdomen, not smooth but with two pairs of swellings, the distal pair indented, separated from the following tergite by a semicircular groove. Colour: dark blackish-brown; only the mouth parts, most of the fore legs, some joints of the middle and hind legs, wing basis, and pterostigma greyish-yellow. Length: ca. 1.5 mm.

Types: (authentic material lost).
Locus typ.: ? Danzig, Germany.
Hab. typ.: "*Cecidomyia salicina*".

A. duodecimarticulatus was originally reported as a parasite of *Dasyneura salicina* (DEGEER) (Diptera: Cecidomyidae). On a basis of that record alone the species could be assumed to belong to the braconid subfamily Alysiinae. Such classification, however, would almost certainly be incorrect because the known alysiine species usually have a much higher number of antennal segments than 12 and differ in the type of wing venation and in the shape of the mandibles (characters that were known to RATZEBURG).

The original host record probably should be restricted to "found on *Salix*". The multitude of insects reared by BRISCHKE from willow galls (RATZEBURG, 1852, pp. 10–12) strongly indicates that insects additional to *D. salicina* were in the

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rearing cages. Assuming RATZEBURG's classification of *duodecimarticulatus* as a member of the family Aphidiidae to be correct (there is no evidence to the contrary), then all details of the description, particularly the number of antennal segments and the colour, point to *Aphidius salicis* HALIDAY [= *Aphidius dauci* MARSHALL]. Though HALIDAY (1834) and MARSHALL (1896, 1899) described the female of the species with 13 antennal segments, there is greater variation and a series of 19 specimens examined comprised 3 specimens with 12, 15 specimens with 13, and one specimen with 14 segments. The last segment of all three specimens with 12 antennal segments was enlarged but not visibly divided (as was mentioned by RATZEBURG). The parasite is widely distributed and relatively common throughout Europe. It is recorded as attacking the aphid genus *Cavariella* DEL GUERCIO (Aphididae, Myzinae), the species of which migrate between *Salix* species, as winter host plants, and various Umbelliferae (or Araliaceae), as summer host plants.

The conjectural evidence presented amply justifies the opinion that *A. duodecimarticulatus* RATZEBURG is conspecific with *A. salicis* HALIDAY, and that *duodecimarticulatus* RATZEBURG, 1852, should be suppressed as a junior subjective **synonym** of *salicis* HALIDAY, 1834.

4. „*Aphidius exoletus* NEES"

A[phidius] exoletus NEES, — RATZEBURG, 1848, Ichn. d. Forstins., **2**, 58 [Listed], 59 [Germany; Host: ? "*Aphis* (*Schizoneura*) *Ulmi* LINN."], 216 [Host: ? "*Aphis*"].
A[phidius] exoletus NEES, — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 63 [Descr. ♂; Germany; Host: "aus Blattläusen an Weiden"], 253 [Host: ? „*Aphis*"].
Praon exoletus, — RATZEBURG, 1848, Ichn. d. Forstins., **2**, 58 [Morph.].

Two specimens were identified by RATZEBURG (1848, 1852) as of *Praon exoletum* (NEES) [= *Aphidius e.*]. "*A. exoletus*" ex *Eriosoma lanuginosum* (HARTIG) [= "*Aphis* (*Schizoneura*) *Ulmi* LINN."] almost certainly refers to *Areopraon lepelleyi* (WATERSTON), provided that the host aphid was correctly identified. *A. lepelleyi* is a typical parasite of *Eriosoma* species and has been relatively commonly confused with *P. exoletum* because of similarities in colour and in the number of antennal segments.

The second specimen, reared from an unidentified aphid on willow, probably belongs to the genus *Praon* HALIDAY and possibly to *P. abjectum* (HALIDAY). But the characters mentioned by the author are too few to draw a safe conclusion.

5. *Aphidius flavidens* RATZEBURG

A[phidius] flavidens RATZEBURG, 1844a, Ichn. d. Forstins., **1**, 53, ♂ [Orig. descr.]; 24 [Host: "*Musca*"], 50 [Morph.]. — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 62 [Morph.], 63 [Listed; Host: "*Tachina*"], 252 [Host: "*Musca*"], 257 [Host: *Phalaena* (*Bombyx*) "*Monacha*"].

The species was described by RATZEBURG as a gregarious parasite that had been reared from the puparium of a tachinid attacking *Lymantria monacha* (LINNAEUS). That host record was reconfirmed in volume 3 of the "Ichneumonen", though RATZEBURG found it necessary to state that *Aphidius* species only rarely attack insects other than aphids.

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The following morphological details were contained in the original description, respectively were added by RATZEBURG in the third volume (1852, p. 62):

♂ — Fore wing with a great triangular pterostigma; first abscissa of the cubitus lacking; first cubital cell confluent with the second cubital and the first discoidal cell; second and third cubital cells separated by a crossvein. Mandibles widely separated. Antennae 20-segmented (19-segmented, according to RATZEBURG, 1852, p. 63), thick. Abdomen almost petiolate, not sessile. Colour: black; mouth parts (except tips of mandibles) and some spots at the base of the abdomen pale yellowish.

Types: (authentic material lost).
Locus typ.: ? Eberswalde, Germany.
Hab. typ.: "Tönnchen einer Tachine", ex *Lymantria monacha* (LINNAEUS).

On a basis of the above characters it may be concluded that *A. flavidens* RATZEBURG is not of the genus *Aphidius* NEES, nor does the species belong to the family Aphidiidae as such. Shape of the mandibles, wing venation, and host almost certainly refer *flavidens* to the braconid subfamily Alysiinae where, probably, it falls into the genus *Aphaereta* FOERSTER. According to all information available that genus is the only taxon of the family Braconidae that fits both the morphological details and contains species which are reliably reported as gregarious parasites of Diptera.

6. *Aphidius* [*Orthostigma*] *flavipes* RATZEBURG[2]

(a) *Orthostigma* RATZEBURG

Orthostigma RATZEBURG, 1844a, Ichn. d. Forstins., **1**, 53 [Orig. descr.]. — RATZEBURG, 1848, Ichn. d. Forstins., **2**, 57 [Transf. to Alysiinae], 71 [Descr. as "Nov. Gen."], Clav. analyt. No. I, opp. p. 238 [Key]. — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 70 [Descr. of n. spp.], Clav. analyt. No. I, opp. p. 272 [Key].

Type Species: *Aphidius flavipes* RATZEBURG, 1844 (by monotypy).

(b) *Aphidius flavipes* RATZEBURG

A[*phidius*] *flavipes* RATZEBURG, 1844a, Ichn. d. Forstins., **1**, 52—53, Taf. VII. Fig. 13, ♂♀ [Orig. descr.]; 24 [Host: "*Musca*"], 41 [Morph.], 50 [Morph.]. — RATZEBURG, 1848, Ichn. d. Forstins., **2**, 57 [Transf. to *Orthostigma* RATZEBURG].

I[*chneumon*] (*Aphidius*) *flavipes* RATZEBURG, 1844b, Forst-Ins., **3**, 24—25, Taf. VII, Fig. 13 [Descr.; Germany; Host: aus den Larven von "*Phora rufipes*"], Tab. No. IV [Host: hyperpar. "In oder an der Nonne"].

Orthostigma flavipes, — RATZEBURG, 1848, Ichn. d. Forstins., **2**, 71 [Descr.], 216 [Host: "*Musca*"], 220 [Host: *Phalaena* (*Bombyx*) "*Monacha*"]. — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 70 [Listed; Host: "*Phora rufipes* X."], 252 [Host: "*Musca*"], 257 [Host: *Phalaena* (*Bombyx*) "*Monacha*"].

Types: (authentic material lost).
Locus typ.: ? Eberswalde, Germany.
Hab. typ.: Tönnchen von "*Phora rufipes* MG.", ex *Lymantria monacha* (LINNAEUS).

RATZEBURG (1844a, b) described the species as a parasite that was reared in large numbers from the puparia of a small dipterous insect, "*Phora rufipes* MG.".

[2] See also p. 631—661 (E. KÖNIGSMANN, Braconidae aus den Resten der RATZEBURG-Sammlung).

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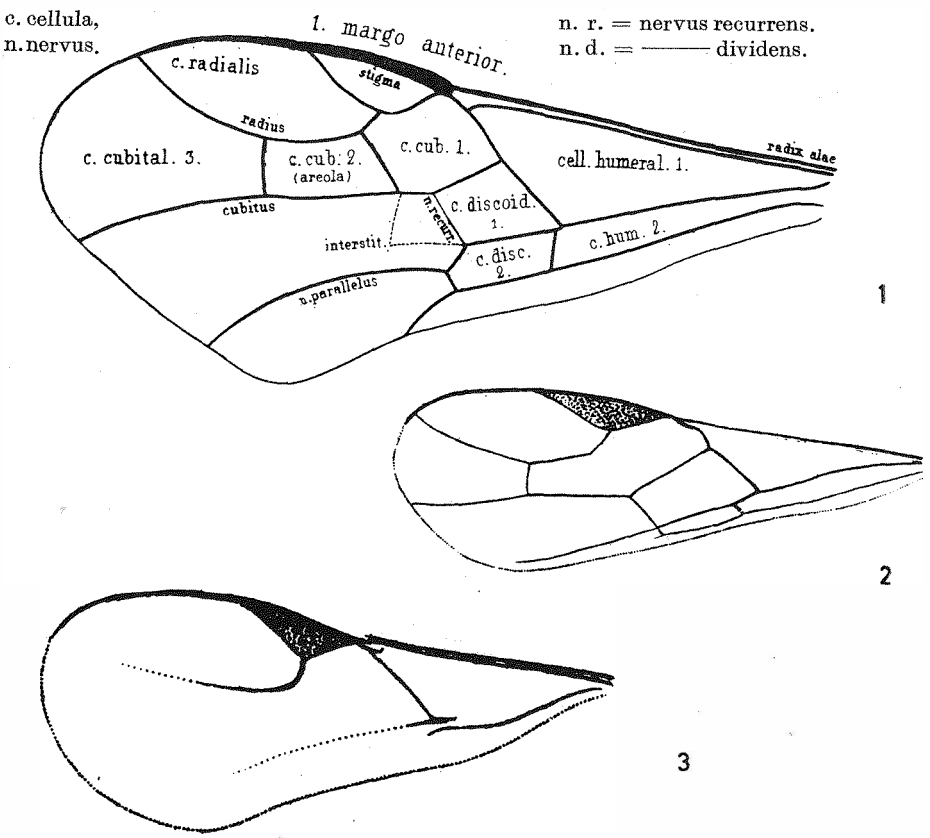

Figs. 1—3. Fore wings (Photographs of the original engravings): Fig. 1. Terminology of the wing venation of a typical braconid [after RATZEBURG, 1848, Taf. I, Fig. 1]. — Fig. 2. *Heterospilus incompletus* (RATZEBURG) [after RATZEBURG, 1848, Taf. II, Fig. 3]. — Fig. 3. *Lysiphlebus salicaphis* (FITCH) s. l. [after RATZEBURG, 1848, Taf. II, Fig. 27]

The host material was obtained by collecting larvae and pupae of the nun moth, *Lymantria monacha* (LINNAEUS) (Lepidoptera: Lymantriidae).

Though *flavipes* was listed and described as a species of the genus *Aphidius*, RATZEBURG (1844a) concluded the original description by remarking that the morphological and biological distinctions of the insect would justify a separate genus, for which he proposed the name of *Orthostigma*. A very sketchy description of the parasite, as *Ichneumon* (*Aphidius*) *flavipes*, may be found also in the third volume of the "Forst-Insecten" which, however, appeared some months later than the first volume of the "Ichneumonen".

In 1848, RATZEBURG transferred *Aphidius flavipes* (in the generic combination of *Orthostigma flavipes*) to the subfamily Alysiinae of the family Braconidae (1848, p. 57). This position conforms with the description and the host recorded by RATZEBURG and was accepted by subsequent taxonomists.

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It may be noted that the genus *Orthostigma* was described a second time as a new genus in volume 2 of the "Ichneumonen", probably on the assumption that the proposal of a new generic name (1844a, p. 53) did not meet all qualifications. However, under Articles 12 and 16 a, vi, of the International Code, the first description of *Orthostigma* is available.

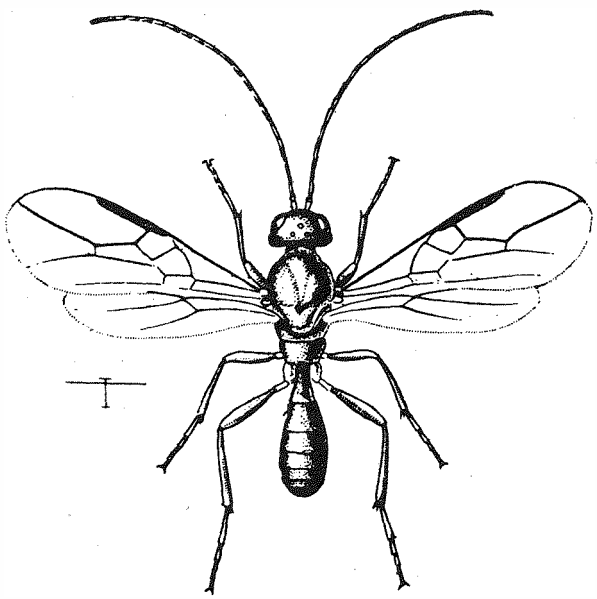

Fig. 4. *Orthostigma flavipes* (RATZEBURG), ♂ [after RATZEBURG, 1844, Taf. VII, Fig. 13 (Photograph of the original engraving)]

7. ***Aphidius inclusus*** RATZEBURG

A[*phidius*] *inclusus* RATZEBURG, 1852, Ichn. d. Forstins., **3**, 63 [Orig. descr.]; 62 [Morph.], 261 [Host: *Phalaena* (*Tortrix*) "*resinana*"].

The species was described as being very similar to "*Aphidius*" *flavidens* RATZEBURG. The following details were noted by the author:

> Mandibles widely separated. Antennae 19-segmented. Abdomen petiolate. Venation of the fore wing resembling the *Diaeretus* type (Fig. 3), except for one cubital crossvein that is faintly developed in *inclusus*. Colour: dark brown; mandibles and various parts of the abdomen lighter coloured. Length: ca. 1.6 mm.
>
> Types: (authentic material lost).
> Locus typ.: ? Eberswalde, Germany.
> Hab. typ.: "Tachinen-Tönnchen", ex "Harzbeule der *Tortrix resinana*".

The morphological characters listed above, particularly the widely separated mandibles, reliably exclude *inclusus* from the family Aphidiidae. The species probably belongs to the subfamily Dacnusinae of the Braconidae, some members

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of which are reported to have the venation of the fore wings as much reduced as was described for *inclusus*. This classification is corroborated by RATZEBURG's host record.

8. „***Aphidius obsoletus*** WESMAEL"

A[*phidius*] *obsoletus* WESM., — RATZEBURG, 1848, Ichn. d. Forstins., **2**, 58—59, Taf. II, Fig. 27, ♂♀ [Descr.; Germany; Hosts: "*Tinea populella*", "*Bostrichus binodulus*"], 211 [Host: ? *Bostrichus* "*binodulus*"], 216 [Host: ? "*Aphis*"], 223 [Host: ? *Phalaena* (*Tinea*) "*populella*"].

A[*phidius*] *obsoletus* WSM., — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 12 [Host: "sogenannte Weidenrosen mit *Gallmücken*"], 62 [Listed; Host: "*Cecidom.*"], 249 [Host: ? *Bostrichus* "*binodulus*"], 253 [Hosts: *Tipula* "*Salicina*"; ? "*Aphis*"], 259 [Host: ? *Phalaena* (*Tinea*) "*populella*"].

The identity of RATZEBURG's "*A. obsoletus*" was briefly discussed by MACKAUER (1959a) who surmised that the specimens were not of *Binodoxys heraclei* (HALIDAY) [= *A. obsoletus* WESMAEL] but probably belonged to the genus *Diaeretus* sensu auctt., nec FOERSTER. The host originally reported included a leaf-rolling species of Lepidoptera, a barkbeetle, and a gallmidge, all three feeding either on poplar or on willow. The reliability of these records was first doubted by RATZEBURG (1848) who surmised that some aphids were also contained in the rearing cages.

The venation of the fore wings of "*A. obsoletus*" (Fig. 3) is of the *Diaeretus* type and agrees with that of species of the genera *Trioxys-Binodoxys*, the *Diaeretus-Diaeretiella* group, certain of the smaller *Aphidius* species, and with those species of the genus *Lysiphlebus* that have a completely reduced discocubital vein. Most of these taxa, except the *Lysiphlebus* species, can be reliably excluded by the structure or shape of the propodeum, the petiole, or by the form or length of the ovipositor. RATZEBURG's description and host records would conform best with *Lysiphlebus salicaphis* (FITCH) s. l., which is a common and very widely distributed parasite of *Chaitophorus* species on *Salix* and *Populus*. The only difference, which, because of individual variation, is negligible, is in the number of antennal segments: *salicaphis* mostly has 12 segments in the female and 14 to 15 in the male.

9. „***Aphidius protaeus*** WESMAEL"

A[*phidius*] *Protaeus* WSM., — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 62 [Descr.; Germany; Host: "*Aphis Aceris*"], 253 [Host: "*Aphis*"], 259 [Host: ? *Phalaena* (*Tinea*) "*populella*"].

The species was known to RATZEBURG from two samples that he reported as parasites of *Periphyllus aceris* (LINNAEUS) [= "*Aphis Aceris*"]. Determination of the specimens as of *A. protaeus* WESMAEL is not satisfactory because of the compound nature of that species.

Wing venation and shape of the petiole, as described by RATZEBURG, would confirm the generic position proposed, or that of a genus of the subtribe Aphidiina. However, the number of the antennal segments, varying between 17 and 19 in one lot (Stuttgart-Hohenheim, NÖRDLINGER leg.) and between 19 and 20 in the other (Berlin, BOUCHÉ leg.) reliably excludes *Euaphidius setiger* MACKAUER, the only

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known parasite of the genus *Periphyllus*. If the host record is interpreted more broadly, e. g. as "reared from an aphid on maple", then RATZEBURG's *protaeus* definitely could be interpreted as referring to male specimens of *Falciconus pseudoplatani* (MARSHALL). This parasite attacks species of the genus *Drepanosiphum* KOCH that are living on the underside of the leaves of various maples. Occasionally, *Drepanosiphum* occurs in mixed colonies together with *Periphyllus*. As *Drepanosiphum* is very sensitive to any disturbances and jumps off, mummified specimens of the species may be taken together with the more sessile *Periphyllus* specimens. Thus, the collector may easily confound *Periphyllus* mummies attacked by *Euaphidius* with *Drepanosiphum* mummies attacked by either *Falciconus* or by *Trioxys cirsii* (CURTIS), if morphological differences are overlooked.

The circumstantial evidence presented is believed sufficient to place "*Aphidius protaeus*" sensu RATZEBURG (1852) as a subjective synonym of *Falciconus pseudoplatani* (MARSHALL, 1896). The record must not be included as a synonym of *Aphidius rosae* HALIDAY (cf. DALLA TORRE, 1898).

10. „*Aphidius restrictus* NEES"

A[phidius] restrictus NEES, — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 63, ♀ [Descr.; Germany; Host: "*Aphis Aceris*"].

RATZEBURG's "*A. restrictus*" was reared by Professor NÖRDLINGER, of Stuttgart-Hohenheim, from an aphid on maple, probably *Periphyllus aceris* (LINNAEUS). A comparison of the detailed description with NEES' (1834) original shows clearly that RATZEBURG dealt with a different species. The female of *restrictus* NEES has 12-segmented antennae and was taken on dill, *Anethum graveolens* L., whereas RATZEBURG's specimens are described as having 13 to 14 antennal segments in the female and were reared from an aphid on *Acer*. In addition, there are numerous colour differences between the two parasites.

"*A. restrictus*" sensu RATZEBURG agrees in all details with *Euaphidius setiger* MACKAUER, 1961, which was originally described as a parasite of *Periphyllus aceris* (LINNAEUS) but was recorded later as also attacking other species of that aphid genus.

11. "*Aphidius varius* NEES"

A[phidius] varius NEES, — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 62, ♀ [Descr.; Germany; Host: "*Aphis Pini*"], 253 [Host: "*Aphis*"].

Aphidius varius was originally described by NEES (1834). It probably is a compound species that comprises a species of the genus *Pauesia* QUILIS and material of the genus *Aphidius* NEES; its systematic position will be discussed elsewhere. The name "*varius*", as understood by RATZEBURG (1852), refers to a member of the genus *Pauesia* that attacks a "black" aphid of the *Cinara* group living on pine, possibly *C. pini* (LINNAEUS).

RATZEBURG's specimen probably was of *P. pini* (HALIDAY, 1834). The description of the female would also agree with *P. abietis* (MARSHALL). This latter species,

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however, can be excluded on the basis of the given host record: whereas *pini* is a typical and common parasite of *Cinara* species that occur on pine trees, *abietis* was reared mostly from species of the same aphid genus feeding on spruce or larch.

12. *Aphidius wissmannii* RATZEBURG

A[*phidius*] *Wissmannii* RATZEBURG, 1848, Ichn. d. Forstins., **2**, 59, ♀♂ [Orig. descr.]; 216 [Host: "*Lachnus Quercus*"]. — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 253 [Host: "*Lachnus Quercus*"].
Types: (authentic material lost).
Locus typ.: ? Hannoversch-Münden, Germany.
Hab. typ.: "*Aphis* (*Lachnus*) *Quercus*".

A. wissmannii is morphologically the most distinct of all the species of aphid parasites that were named by RATZEBURG. The original description, however, was generally misinterpreted by subsequent authors, probably because representatives of the species were not available for examination. Of the older authors, MARSHALL (1896), DALLA TORRE (1898), and SZÉPLIGETI (1904) listed *wissmannii* RATZEBURG as of genus *Aphidius* NEES. The first to comment on the systematic position of the species was GOIDANICH (1934) who, in describing *Menozzia formicaria*, referred to *wissmannii* as a possibly similar insect. FAHRINGER (1937) transferred *wissmannii* to the genus *Coelonotus* FOERSTER on the basis of the deeply excavated posterior half of the propodeum. Re-examination of the type material of some of FOERSTER's (1862) genera and species caused STAŘY (1958) to synonymize *Protaphidius rufus* (FOERSTER, 1862) [= *Coelonotus r.*] and *Menozzia formicaria* GOIDANICH, 1934, under *Aphidius wissmannii* RATZEBURG, 1848, and to redescribe the parasite as *Protaphidius wissmannii* (RATZEBURG).

STAŘY's interpretation of the original description of *wissmannii* seems to be justified and was accepted by subsequent authors.

13. *Bracon* [*Achoristus*] *aphidiiformis* RATZEBURG

(a) *Achoristus* RATZEBURG

[*Bracon*] *Achoristus* RATZEBURG, 1852, Ichn. d. Forstins., **3**, 31 (Orig. descr.).
Type Species: *Bracon aphidiiformis* RATZEBURG, 1852 (By monotypy).

RATZEBURG (1852) divided the genus *Bracon* FABRICIUS into several sections ("Abtheilungen") and subsections which, following Article 42d, of the I. C. Z. N., rank as subgenera. He named the first section *Xylophagophthorus*, indicating by this that the species contained were parasites of woodboring insects, mainly Coleoptera (RATZEBURG, 1852, pp. 29—30). Morphologically this section was characterized by the flatter petiole of its members as compared with the "big-bellied" true *Bracon* species. Differences in the venation of the fore wing were used for further subdivisions. Thus, the subsection *Achoristus* was defined as follows:

> Cubital cells of fore wing united to form one large cell; cubital crossveins lacking completely; brachial cell ["2te Discoidalzelle"] very small, as long as first abscissa of discoideus; subdiscoideus ["nervus parallelus"] interstitial; wing venation similar to that of *Heterospilus incompletus* (RATZEBURG) [= "*Bracon i.*"] (Fig. 2), except for the lack of the cubital crossvein shown for *incompletus*.

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Achoristus, as described by RATZEBURG, cannot be accepted as a subgenus of the genus *Bracon* nor as belonging to the subfamily Braconinae. It was transferred by MARSHALL (1888, pp. 200, 203) as a distinct genus to the tribe "Hecabolidae". ASHMEAD (1901, p. 147) placed the genus in the tribe Pambolini which he included in the subfamily Spathiinae. Though the Pambolini are currently classified as a tribe of the subfamily Rogadinae, the position of the genus *Achoristus* seems to be unchallenged by students of the family Braconidae.

None of the previously proposed classifications of *Achoristus* appears to be justified on the basis of the original description of the type species, *Bracon aphidiiformis* RATZEBURG. As will be shown below, *B. aphidiiformis* in all probability is conspecific with *Praon abjectum* (HALIDAY), a member of the aphidiid subfamily Prainae. Consequently, the (sub-) genus *Achoristus* RATZEBURG, 1852, must be transferred from the tribe Pambolini, subfamily Rogadinae, family Braconidae, to the subfamily Prainae, family Aphidiidae. It becomes a junior subjective **synonym** of the genus *Praon* HALIDAY, 1833.

(b) *Bracon aphidiiformis* RATZEBURG

B[*racon* (*Achoristus*)] *aphidiiformis* RATZEBURG, 1852, Ichn. d. Forstins., **3**, 31—32, ♀ [Orig. descr.].
Bracon aphidiiformis, — RATZEBURG, 1852, Ichn. d. Forstins., **3**, 11 [Host: "sogenannte Weidenrosen mit *Gallmücken*"], 253 [Host: *Tipula* "*Salicina*"].

The original description of the single female known to RATZEBURG contains the following information:

♀ — Body smooth, shiny, relatively densely hairy. Propodeum strongly arched, not areolated ["ohne Schilder"]. Abdomen sessile, narrow, almost as long as head and thorax combined; ovipositor compressed, cone-shaped. Antennae 16-segmented, slightly more than half as long as the body; the three distal segments closely united. Colour: blackish-brown; mouth, most of the legs, basis of the wings, and tegulae reddish-brown; pterostigma pale and transparent; one half of the radius as intensely coloured as pterostigma and basal vein, the other half discoloured and fading. Length: ca. 1.5 mm.
Types: (authentic material lost).
Locus typ.: ? Danzig, Germany.
Hab. typ.: "*Cecidomyia salicina*".

The species was recorded by RATZEBURG as a parasite of *Dasyneura salicina* (DEGEER) (Diptera: Cecidomyidae). This record, however, appears to be incorrect as the female of *aphidiiformis*, which has only a short and cone-shaped ovipositor, cannot possibly have oviposited into the woodboring larvae of *D. salicina*. The variety of the insects reported by RATZEBURG (1852, pp. 11—12) would indicate that the rearing cages probably contained also some other insects in addition to the *Dasyneura* galls. It may be surmised that the cage lodged some aphids, which were brought in with plant material.

That assumption would seem to be correct as the description of *B. aphidiiformis* conforms with the description of the female of *Praon abjectum* (HALIDAY) (MACKAUER, 1959b). There is perfect agreement in the number of antennal segments, the wing venation, and the shape and structure of propodeum, petiole, and

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ovipositor. RATZEBURG's observation that the female was relatively densely hairy gives additional support to that interpretation. The parasite is widely distributed and relatively common throughout Europe. It was reared from various aphids of the subtribe Aphidina (Aphididae), and also from *Aphis farinosa* GMELIN, which is one of the most common aphids on willow in central Europe.

On the basis of the conjectural evidence presented I transfer *Bracon* (*Achoristus*) *aphidiiformis* RATZEBURG, 1852, to the genus *Praon* HALIDAY, 1833 (Hymenoptera: Aphidiidae). *Praon aphidiiforme* (RATZEBURG, 1852), **n. comb.**, is conspecific with *Praon abjectum* (HALIDAY, 1833) and becomes a junior subjective **synonym** of the latter species.

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Summary

The paper discusses the taxa of the family Aphidiidae (Hymenoptera) that were described by J. T. C. RATZEBURG.

The seven species described by the author were interpreted as follows (original combination included in square brackets):

(a) Family Aphidiidae: *Praon aphidiiforme* (RATZEBURG, 1852), **n. comb.** [= *Bracon a.*], = **n. syn.** of *Praon abjectum* (HALIDAY, 1833); *Praon aphidivorum* (RATZEBURG, 1844), **n. comb.** [= *Aphidius a.*], = ? syn. of *Praon flavinode* sensu auctt., nec HALIDAY, 1833; *Aphidius duodecimarticulatus* RATZEBURG, 1852, = **n. syn.** of *Aphidius salicis* HALIDAY, 1834; and *Protaphidius wissmannii* (RATZEBURG, 1848) STARÝ, 1958 [= *Aphidius w.*].

(b) Family Braconidae, subfamily Alysiinae: *Orthostigma flavipes* (RATZEBURG, 1844) RATZEBURG, 1848 [= *Aphidius f.*]; ? *Aphaereta flavidens* (RATZEBURG, 1844), **n. comb.** [= *Aphidius f.*].

(c) Family Braconidae, subfamily ? Dacnusinae: Gen. *inclusus* (RATZEBURG, 1852), **n. comb.** [= *Aphidius i.*].

Two taxa of the generic level were described by RATZEBURG. They are as follows: *Achoristus* RATZEBURG, 1852, = **n. syn.** of *Praon* HALIDAY, 1833 (Hymenoptera: Aphidiidae), and *Orthostigma* RATZEBURG, 1844 (Hymenoptera: Braconidae, Alysiinae).

In addition, five species of the family Aphidiidae, that were dealt with by RATZEBURG, were interpreted as to their systematic position.

Zusammenfassung

Die vorliegende Arbeit behandelt die von J. T. C. RATZEBURG beschriebenen Taxa der Familie Aphidiidae (Hymenoptera).

Die Überprüfung der Originalbeschreibungen der von RATZEBURG aufgestellten sieben Spezies führte zu nachstehenden Ergebnissen:

(a) Familie Aphidiidae: *Praon aphidiiforme* (RATZEBURG, 1852), **n. comb.** [= *Bracon a.*], = **n. syn.** von *Praon abjectum* (HALIDAY, 1833); *Praon aphidivorum* (RATZEBURG, 1844), **n. comb.** [= *Aphidius a.*], = ? syn. von *Praon flavinode* sensu auctt., nec HALIDAY, 1833; *Aphidius duodecimarticulatus* RATZEBURG, 1852, = **n. syn.** von *Aphidius salicis* HALIDAY, 1834; und *Protaphidius wissmannii* (RATZEBURG, 1848) STARÝ, 1958 [= *Aphidius w.*].

(b) Familie Braconidae, Unterfamilie Alysiinae: *Orthostigma flavipes* (RATZEBURG, 1844) RATZEBURG, 1848 [= *Aphidius f.*]; ? *Aphaereta flavidens* (RATZEBURG, 1844), **n. comb.** [= *Aphidius f.*].

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(c) Familie Braconidae, Unterfamilie ? Dacnusinae: Gen. *inclusus* (RATZEBURG, 1852), **n. comb.** [= *Aphidius i.*].

Die von RATZEBURG aufgestellten generischen Einheiten sind folgenden Familien bzw. Unterfamilien zuzuordnen: *Achoristus* RATZEBURG, 1852, = **n. syn.** von *Praon* HALIDAY, 1833 (Hymenoptera: Aphidiidae) und *Orthostigma* RATZEBURG, 1844 (Hymenoptera: Braconidae, Alysiinae).

Fünf weitere von RATZEBURG besprochene, aber nicht als neu beschriebene Arten wurden ebenfalls auf ihre systematische Stellung hin untersucht.

Резюме

Предлагаемая работа рассматривает описанные J. T. C. RATZEBURG taxa семейства Aphidiidae (Hymenoptera)..

Пересмотр оригинала описания установленных RATZEBURG семи spezies привело к следующим результатам:

a) Семейство Aphidiidae: *Praon aphidiiforme* (RATZEBURG, 1952), **n. comb.** [= *Bracon* a.], = **n. syn.** к *Praon abjectum* (HALIDAY, 1833); *Praon aphidivorum* (RATZEBURG, 1844), **n. comb.** [= *Aphidius a.*], = ? syn. к *Praon flavinode* sensu auctt., nec. HALIDAY, 1833; *Aphidius duodecimarticulatus* RATZEBURG, 1852, = **n. syn.** к *Aphidius salicis* HALIDAY, 1834; и *Protaphidius wissmannii* (RATZEBURG, 1848) STARÝ, 1958 [= *Aphidius w.*].

b) Семейство Braconidae, подсемейство Alysiinae: *Orthostigma flavipes* (RATZEBURG, 1844) RATZEBURG, 1848 [= *Aphidius f.*]; ? *Aphaereta flavidens* (RATZEBURG, 1844), **n. comb.** [= *Aphidius f.*].

c) Семейство Braconidae, подсемейство ? Dacnusinae: Gen. *inclusus* (RATZEBURG, 1852), **n. comb.** [= *Aphidius i.*].

Установленные RATZEBURG родовые единицы надо отнести к следующим семействам или подсемействам: *Achoristus* RATZEBURG, 1852, = **n. syn.** к *Praon* HALIDAY, 1833 (Hymenoptera: Aphidiidae) и *Orthostigma* RATZEBURG, 1844 (Hymenoptera; Braconidae, Alysiinae).

Пять других обсужденных RATZEBURG, но не описанных как новые виды были проверены с точки зрения их расположения в систематике.

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