The Rondani Cecidomyiidae (Diptera)

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Abstract: The Rondani collection of Cecidomyiidae in Florence, Italy, is cataloged to account for existing specimens of Rondani species. A report is made on the status and identity of each of Rondani's 16 species of Cecidomyiidae. Types of 12 species are represented by specimens in good to poor condition; those of the remaining four species cannot be found. A lectotype is designated for Brachineura fuscogrisea and illustrations are given of its male genitalia and part of its antenna. Recommendations are made for future fixation of lectotypes or neotypes of some of Rondani's species.

Introduction

Camillo Rondani (1808-1879) was an entomologist from Parma, Italy, who described species in many families of Diptera. Between 1840 and 1869, he described 16 species of Cecidomyiidae, which are among the earliest gall midges described. Several of them are type species of various genera, yet current concepts relating to their identity are not based on actual specimens. An example of this is Dasineura obscura Rondani, the type species of Dasineura Rondani. Probably no one since Rondani has seen specimens of D. obscura, known only from a very sketchy description. Today Dasineura is used as a catchall category and contains over 450 described species, some of considerable economic importance. For these reasons we investigated what we could find of Rondani's collection of Cecidomyiidae to determine the status and identity of his species.

Most of Rondani's Diptera are in the Museo Zoologico de "La Specola," Florence, Italy. They were acquired by that museum after Rondani's death (Pape 1988). Most but not all of Rondani's species of Cecidomyiidae were represented in that collection. In a search for the remaining types, we visited three other Italian museums, in Bologna, Milan, and Parma, to learn whether any other specimens existed in those collections. The Dipartimento di Zoologia, Università di Bologna, has a large collection of Rondani specimens, many presumably types, but these belong to other families

of Diptera besides Cecidomyiidae. The few specimens of Cecidomyiidae there did not belong to species described by Rondani and were not necessarily seen by him. According to the curator in Bologna, many additions have been made to that collection over the years. The Museo Civico di Storia Naturale in Milan has no Rondani specimens of Cecidomyiidae. Any that might have been there before World War II would have been destroyed with the rest of the insect collection. The Museo di Storia Naturale, Parma, has no specimens collected by Rondani. Having eliminated these possibilities, we assume that no Rondani specimens of Cecidomyiidae exist outside Florence.

This paper has two parts. The first is a description of the Rondani collection of cecidomyids, the second is a list of the species described by Rondani with notes on their status and identity.

The Cecidomyiidae in the Rondani Collection in Florence

The Cecidomyiidae are in drawer 65 of the Rondani Collection in the Museo Zoologico de "La Specola" in Florence, Italy. The drawer is a wooden box, 26.5 cm wide, 35.5 cm long, and 6.7 cm high, with a fitted, removable top framing a glass cover. On the front of the drawer is a centrally placed, wooden framed, hand lettered label that reads "Cass. 65. *Mimosciara* Rnd.-*Lasioptera* Mgn.," and to the left of that label is glued a smaller, typed,

paper label reading "Collezione Rondani." specimens and labels are arranged in seven columns running the long dimension of the box. The labels read consecutively beginning with the first row at the left rear and proceeding towards the front of the box, continuing again with the second row at the rear, etc. On almost all of the pins is an oval label with a number unique to each species or series, in order from 3313 to 3372. Name labels in the collection follow the specimens they describe. To avoid confusion in our tabulation, we describe the specimens on the same lines as their pertinent species labels. Label data is in quotation marks. with explanatory notes in brackets. An asterisk before a name indicates a Rondani species, which is treated separately in the second part of this paper. Several manuscript names appear in the collection. They are identified as such and not marked with an asterisk. Labels for genera and higher taxa are in boldface. For brevity in this part we abbreviate the word specimen to spn. "Zurig" [Zurigo] means Zurich, and specimens so labeled are evidently originally from Bremi. Their pins and microvials are similar to those used for specimens in the Bremi collection in Zurich. The collection may include other specimens that Rondani may have received from other collectors.

First Row:

"Micromyna Rndn."

"Mimosciara Rnd."

Blank label. Two spns, each speared by a pin: one pin with a square label showing sketch of a *Lestremia* wing and with the name "*Mimosciara* [illegible]"; the other pin with a smaller square label with a sketch of a *Catocha* wing; each pin with oval label 3313.

*"Molobrina Mihi" Two spns, each on a separate pin, one speared by pin, one glued to a card speared by pin; each pin with oval label 3314.

"Catocha latipes Hal." One spn glued to a card speared by pin with oval label 3315.

"Anarete candidata Hal." One spn glued to a card speared by pin with oval label 3316.

*"Lestremina Rnd" Two pins, one with remains of a thorax, one without spn, each bearing rough sketch of a wing on rectangular piece of paper but no oval label with number.

"Campylomiza [illegible letter] Mg"

"Neuroliga Rndn"

*"Fenestralis o" Four spns on separate pins, three speared by pins, one glued to card speared by pin; each with oval label 3317.

*"Silvalis Rnd" One spn glued to a card speared by pin with oval label 3318.

Second Row:

"Cecidomynae"

"Cecidomyna Rndn."

"Dasineura Mihi"

"Rufiventris Mihi" Two spns speared by separate pins with oval label 3319. This is a manuscript name.

"Porricondyla Mihi"

"14-15 articoli ♂ ♀?"

"Albitarsis of Mg Art. 14-15" One spn speared by pin with oval label 3320 and one pin with label "preparato" and arrow pointing toward front of box

Blank label. Six spns on separate pins: three speared by pins; three glued to cards speared by pins; each pin with oval label 3321.

"Cecidomya? Meig."

"Phytophaga Mihi"

"antenne \circlearrowleft 24-25 [illegible, poss. "articoli"] \circlearrowleft 12 14 \heartsuit "

Blank label. One spn glued to card speared by pin with oval label 3322.

Blank label. Fourteen spns on separate pins, 13 speared by pins, one glued to card speared by pin; each pin with oval label 3323.

Blank label. Five spns speared by separate pins with oval label 3324.

Blank label. Four spns speared by separate pins with oval label 3325.

"Palustris? Mg 26-12"

Third Row:

"Plumicornis Mihi" This is a manuscript name.

"Tessarata Mihi" This is a manuscript name.

"Fuscicollis Mg" One spn speared by pin with oval label 3326.

"Salicina Pavia Germanica art 20 ♂ ♀" Three pinned spns, two speared by same pin, each pin with oval label 3327.

*"Cecidomyia frumentaria Rnd" Six spns, each speared by pin, two pins bearing also a puparium, all with oval label 3328.

*"Cecidomyia frumentaria Rndn" Thirteen spns each speared by pin with oval label 3328.

"Cecidomya tritici Zurig" One corked microvial containing three loose spns of Micromyini, speared through cork by pin with oval label 3329.

"Cecidomya Agaricola Bremi Zurig" One corked microvial containing three loose spns of Winnert-

zia sp., speared through cork by pin with oval label 3330.

"Cecidomya [illegible, rosa or rosia, but not agreeing with any available Bremi name] Bremi Zurig" One corked microvial containing five loose spns of Asynapta sp., speared through cork by pin with oval label 3331.

"Cec. saliciperda Duf." One rectangular piece of pith speared by a pin with oval label 3332; 10 minuten nadeln are inserted in pith, three each spearing a spn, some of the others showing signs of once having held spns.

"Cecidomyia circinans" Two pins each with oval label 3333, one spearing a rectangular card to which four spns are glued, the other spearing two triangular cards to each of which is glued a spn.

"Cecidomyia circinans Gir" One pin with oval label 3333, spearing a card to which three spns are glued.

"Cecidomya capitigena Bremi Zurig" Three spns speared by a single pin with oval label 3334 and rectangular label with following data: "Cecidomyia capitigena Bremi now in Spurgia see Gagné 1990: 337."

"Cecidomyia sonchi Bremi" Two pins with oval label 3335, each spearing a card to which four spns are glued.

Fourth Row:

"Cecidom[word apparently not finished] sonchi Bremi" One pin with oval label 3335, spearing a rectangular card which once apparently held eight spns, of which five remain. Four are Oligotrophini and one is a parasitic hymenopteran.

"euphorbia Wtz." Four pins each spearing a rectangular piece of pith and oval label 3336; one piece of pith with one spn, one piece with two spns, and two pieces each with three spns, each of the nine spns speared by a minute nadel inserted into pith. One of the pins with three spns also bears a rectangular label with following data: "Cecidomyia euphorbiae Loew =Spurgia capitigena see Gagné 1990: 337."

"Cecidomya Klugii Mgn Zurig" One corked microvial with seven loose spns speared through cork by pin with oval label 3337.

"[illegible word] Cecidomya pini Deg."

"Cecidomya Rachineura m"

Blank label. Two pins, one speared through a piece of paper with drawings of a wing and parts of male and female antennae, [probably a *Lestodiplosis*], the other spearing a spn and with oval label 3338.

"Cecidomya Papaveris Pavia" Three pins each with oval label 3339, two pins each spearing a piece of celluloid, one with a spn glued to it, the other without a spn, and one pin spearing two spns.

"Cec. rosariae Lw." One pin spearing card with one glued spn and with oval label 3340.

Blank label. Two pins each spearing card with one glued spn and with oval label 3341.

Blank label. One pin spearing card with one glued spn and with oval label 3342.

"Gen. Diplosis Löw"

"Diplosis buxi Lab." Two pins each with oval label 3343, one of the pins spearing rectangular piece of pith to which six separate minuten nadeln, each spearing a spn, are inserted, the other pin spearing one spn.

*Blank label. Two pins each spearing a card to which a spn is glued and with oval label 3344. One of the pins has a label that reads, "in florib aristoloch flori[illegible letters]," and may possibly be the remains of the type of *C. atricapilla*. The other spn is a male sciarid.

Blank label. Two pins with oval label 3345, one of the pins spearing rectangular card to which two spns are glued, the other pin spearing a spn.

Blank label. Seven pins, four spearing card to which a spn is glued, three spearing a spn, all with oval label 3346.

Blank label. Two spns each speared by pin with oval label 3347.

Fifth Row:

Blank label. Six spns each glued to a card speared by pin with oval label 3348.

Blank label. Two spns each speared by pin with oval label 3349

Blank label. Three spns each speared by pin and two spns glued to one card speared by pin, all pins with oval label 3350.

Blank label. Three spns each speared by pin with label 3351.

"Gen. Bremia?"

*"Br. aphidimyza? Rnd." Two spns each glued to a card speared by pin with oval label 3352.

"Gen. Hormomyia Rnd."

"cucullata [sketch of male flagellomeres] \circlearrowleft 24" Fifteen spns each speared by a pin with oval label 3353.

"Gen. Angelinia Rnd."

*"gybba Mihi Art 26 [sketch of two male flagellomeres]" One spn speared by pin with oval label 3354.

Blank label. One spn speared by pin with oval label 3355.

"Asinapta Löw"

Blank label. Four spns each speared by pin with oval label 3356.

Sixth Row:

Blank label. One spn speared by pin with oval label 3357.

Blank label. One Trichoceridae spn speared by pin with large thrice-folded label with sketches of male genitalia and head including whole antenna. The pin bears no oval, numbered label. This spn is obviously in wrong box of the Rondani collection.

"G. Asphondylia Loew Phillophaga R"

"Asphondylia coronillae Rond" Eight pins, six each spearing one spn, two each spearing a rectangle of pith in which a minute nadel spearing a spn is inserted; each pin with oval label 3359. This is not a Rondani but a Vallot species.

"Fusca Mg" Two spns each speared by pin with label 3360.

"Malassus Mihi" Two spns each speared by pin with label 3361. This is a manuscript name.

"Asphondylia Loew [three illegible letters] Pruniperda [the "perda" appearing to be written over "cola"] 89" Two spns each speared by pin with label 3362.

"Asphondylia Löw scrophulariae Mihi [three letter word, illegible] Scrop. camina" One spn speared by pin with label 3363. This is not a Rondani but a Schiner species.

"G. Brachineura Mihi"

* "Brachineura R. Fuscogrisea R." One spn on card speared by pin with oval label 3364.

*"Fuscogrisea Mihi" One spn on card speared by pin with oval label 3364.

"Diversineura Mihi" One spn speared by pin with oval label 3365.

"Ozirhincus Mihi"

Blank label. Two spns each on card speared by pin with oval label 3366. These are not referable to *Ozirhincus*.

"Lasioptera Mg."

"Lasioptera Rubi Bremi Zurig" One corked microvial with three loose spns, speared through cork by pin with oval label 3367

"Lasioptera Rubi Schrk." One rectangular piece of pith speared by a pin with oval label 3367; eight minuten nadeln are inserted in pith, each spearing a spn.

Seventh Row:

"Lasioptera arundinis Schin" Two pins, one spearing rectangular piece of pith in which five minuten nadeln, each spearing a spn, are inserted, the other spearing a spn; both pins with oval label 3368.

"Lasioptera arundinis Mihi" Two pins, each spearing a piece of pith in which is inserted a minute nadel spearing a spn; both pins with oval label 3368. This is a Schiner, not a Rondani name.

"Lasioptera Fabae m." One pin spearing a piece of pith in which are inserted three minuten nadeln each spearing a spn; each pin with oval label 3369. This is a manuscript name.

"Vitripennis Mihi albipennis? Mg 18" One spn speared by pin with oval label 3370. Vitripennis is a manuscript name.

"Pulcra Mg. Larva [illegible words]" Three spns each speared by pin with oval label 3371.

Blank label. Two pins, one spearing two spns [adult and pupa], the other spearing one spn, both pins with oval label 3372.

Blank label. Three spns each speared by pin with oval label 3373.

In the front right hand corner of the box is a typed note reading as follows: "22 June 1987. This drawer includes many Bremi spns- at least all those in vials and glued onto horizontal paper stages, e.g. 3335. I saw mounts exactly like these in the Bremi Collection in Zurich. Raymond Gagné."

Cecidomyiidae Species Described by Rondani

The 16 Rondani species are listed in the order they appear in the collection or would appear were they not lost.

1. Neurolyga fenestralis Rondani 1840: 24. Four female specimens (#3317) are under this name, all evidently the same species but varying in condition. This species is the type of Neurolyga Rondani (1840). The only specimen with a head and antenna was slide mounted during this study. According to M. Jaschhof, Ernst Moritz Arndt Universität, Greifswald, Germany (personal communication), this species is no longer referable to Campylomyza, where Edwards (1938: 175) tentatively placed it and where it has remained since that time (Pritchard 1947, Skuhravá 1986). Jaschhof will designate a lectotype of N. fenestralis and correctly place the genus Neurolyga in his study of Holarctic Lestremiinae.

- 2. Neurolyga silvalis Rondani 1840: 24. One specimen (#3318) is under this name and is identifiable as a wide-ranging Holarctic species. M. Jaschhof will be placing this species in his work in progress on the Lestremiinae.
- 3. Neurolyga turmalis Rondani 1840: 25. No specimen labelled as such could be found. The specimen of N. silvalis could be made the neotype of this species because no essential distinction between the two species was made in the short, two line, original description of N. turmalis.
- 4. Mimosciara molobrina Rondani 1840: 25. Two unidentifiable specimens (#3314) are under this name. Both lack the head, genitalia, legs, and wings, and their remains, parts of thoraxes and abdomens, are covered with fungus. Edwards (1929) tentatively considered this species a synonym of Catocha latipes (Haliday 1933). Pritchard (1947) made the synonymy formal, although it was still not based on definite evidence. His reasons were: only one species of Catocha is known from Europe; Rondani did not differentiate in anything but shading between his two species of Mimosciara, M. molobrina and M. lestremina (vide infra); and the wing of M. lestremina as drawn in Rondani (1846) resembles that of C. latipes. The holotype of C. latipes should be designated the neotype of M. molobrina in the next revision of the genus. Mimosciara molobrina is the type species of four genera now considered junior synonyms of Catocha Haliday (1933) (see Pritchard 1947, Skuhravá 1986).
- 5. Mimosciara lestremina Rondani 1840: 26. Fragments of the thoraxes of two specimens, each on a separate pin, are all that remain of this species. Each pin bears a tiny sketch of a wing, one representing a possible sciarid, the other a Catocha latipes, similar to that drawn for M. lestremina in Rondani 1846. Pritchard (1947) placed this species in Catocha on the basis of the drawing of the wing in Rondani (1846). Because the types of M. lestremina are no longer recognizable and there appears to be only one species of Catocha in Europe, we suggest that the holotype of C. latipes be designated the neotype of M. lestremina in the next revision of this genus.
- 6. Micromya lucorum Rondani 1840: 23. This species is not represented. The name has traditionally been used for a wide-ranging European species (Skuhravá 1986), but, because other Palearctic species of Micromya are known, a neotype should be designated for this, the type species of Micromya.

- 7. Brachineura fuscogrisea Rondani 1840: 17. Two male specimens (#3364) of B. fuscogrisea Rondani are present. Both were slide mounted during this study. Their genitalia and a flagellomere of the one remaining antenna between them are illustrated for future identification. This is the oldest species name of the genus in the Palearctic. The specimen with its genitalia mounted in dorsoventral view (Figs. 2-3) is here designated the lectotype, the other specimen with its genitalia mounted in lateral view (Fig. 4) is a paralectotype. The genitalia of the latter specimen was first mounted in dorsoventral view, so we could be sure the two specimens were identical, and then turned before it had dried so we could draw it in lateral The paralectotype is the only one with remains of an antenna (Fig. 1). The specimens fit the traditional concept of Brachineura as outlined in Edwards (1937). As Edwards (1937) noted, Rondani's (1840, 1846) earliest descriptions of the antennae of Brachineura did not agree with the concept of the genus current in 1937. Rondani (1860) later correctly characterized the antennae.
- 8. Ozirhincus longicollis Rondani 1840: 16. This species is not represented except by a label. It is the type of Ozirhincus, a distinctive genus of many species, all with elongate adult necks and heads adapted for feeding in flowerheads of Asteraceae. The host of O. longicollis is unknown, but the species has traditionally (Möhn 1966) been considered to be the same as Ozirhincus chrysanthemi (Loew 1850) from chrysanthemum.
- 9. Dasineura luteofusca Rondani 1840: 17. This species is not represented. Because it cannot be identified on the basis of Rondani's sketchy description or be readily found again because its host is unknown, D. luteofusca must be considered a nomen dubium.
- 10. Dasineura obscura Rondani 1840: 18. This species is not represented but is important because it is the type species of Dasineura, which contains hundreds of species, many of economic importance. Separately, Gagné et al. (in preparation) are applying to the International Commission on Zoological Nomenclature to suppress D. obscura and designate a different, well-known species as the type of Dasineura.
- 11. Phytophaga cerealis Rondani 1843: 151. This species is not represented as such. Rondani (1864) renamed P. cerealis as Phytophaga frumentaria (q.v.) for unstated reasons and may have placed his specimens of P. cerealis with those of P. frumentaria. Phytophaga cerealis has been recognized as a junior

synonym of *Mayetiola destructor* (Say) because it was reared from the distinctive puparia of this species found in wheat culms.

- 12. Phytophaga frumentaria Rondani 1864: This species is represented by 19 adult specimens (#3328) in two separate series. The first series is made up of 4 females, 1 male, and one of undetermined sex because it lacks antennae and abdomen. A puparium is associated with each of two specimens. This series belongs to Mayetiola destructor (Say). The next series includes five species of Cecidomyiidae and one of Ceratopogonidae. The Cecidomyiidae are: three specimens of *M. destructor*, three of *Lasioptera* sp., one of Hybolasioptera sp., three of Campylomyza sp., and one of Asynapta sp. Notwithstanding these other species in the series, Phytophaga frumentaria is a junior synonym of P. cerealis and M. destructor because it was originally described as coming from the peculiar puparia of this species in wheat culms.
- 13. Asphondylia pruniperda Rondani 1867: 37. A male and a female of this species are present (#3362). This is a widespread European species reared originally from Prunus domestica L. and later from other Prunus spp. (Barnes 1948, under Ischnonyx prunorum Wachtl, then thought to be a separate species).
- 14. Cecidomya (sic) aphidimyza Rondani 1847: 446. Two male specimens (#3352) are present, both showing the species' typically long antennal circumfila. The whole abdomen of one and the genitalia of the other are missing.
- 15. Angelinia gibbosa Rondani 1860: 290. One male specimen (#3354) is present with a label reading "gybba," possibly an error for gibbosa. The antennae and abdomen are missing, but the specimen has a greatly elongated thorax that is produced anteriorly over the head as is typical for Planetella species. The species is the type of Angelinia, now a junior synonym of Planetella Walker, which includes many cecidomyiids that infest Cyperaceae. Angelinia gibbosa was caught in flight so may never be identified with certainty because Planetella has a great number of species.
- 16. Cecidomyia atricapilla Rondani 1869: 190. No specimen is labelled as atricapilla, but one of the two specimens of #3344 bears a label reading "in florib aristoloch flori[illegible letters]," and may possibly be the type of this species. The head without antennae and the thorax with wings but without legs are all that remain of this specimen. Rondani (1869) wrote that this species was "In perian-

tio Aristolochiae rotundae clausa a D. Delpino detecta", which we translate as, "found by D. Delpino in closed perianth of Aristolochia rotunda." Skuhravá (1986) listed C. atricapilla as a doubtful species of Cecidomyiidae, but the possible type specimen in the Rondani collection might be referable to some species from the perianth of A. rotunda and could then be used to fix this species.

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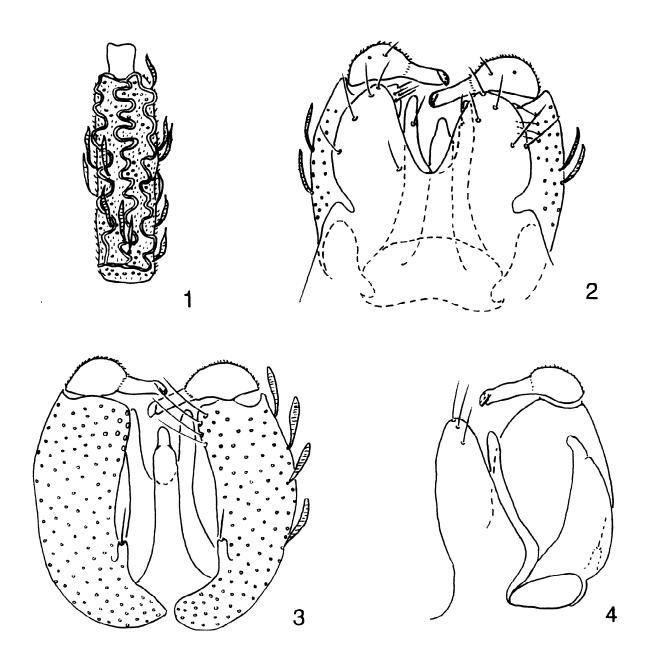
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Figs. 1-4. Brachineura fuscogrisea. 1, Male fifth flagellomere. 2, Male genitalia (dorsal). 3, Same (ventral). 4, Same (lateral sagittal).