

**Hemimene cinerosana HS.,
a widely distributed, but hitherto
unappreciated, species. (Lep., Tortr.).**

By
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Some years ago Kremky & Maslowski (1933, p. 61—85) published a study on some of the species of the genus *Hemimene* Hb. The species covered by their investigation, viz. *petiverella* L., *alpinana* Tr., *flavidorsana* Knaggs, *politana* Hb., and *incognitana* Kremky, are all characterized by having a more or less well defined, although in some specimens obsolete, yellowish or orange dorsal patch on the forewings. Besides this group, which also includes a few further species (e. g. *heegeriana* Dup. and *alpestrana* HS.), the genus *Hemimene* also contains quite another group of species, which in the past has caused troubles. This group, including species as e. g. *plumbagana* Tr., *tanaceti* Stt., *consortana* Wilk., *cinerosana* HS., and *senectana* Gn. forms a connecting link with the genus *Lipoptycha* Ld. Indeed, some specimens of this group may be so much alike e. g. *Lipoptycha plumbana* Sc. or *saturnana* Gn., that only the presence of the costal fold on the forewing in the male indicates their place in the genus *Hemimene* instead of *Lipoptycha*.

For some years past I have been studying the material of Danish Microlepidoptera preserved in different public and private collections in Copenhagen in order to verify the determination of doubtful specimens. During this work four years ago I came across some specimens belonging to the group just mentioned, which obviously

were wrongly named, but whose identity I was unable to clear up out of hand.

The question was about three specimens preserved in the Zoological Museum of Copenhagen. One of these (a male¹) taken by C. S. Larsen: Faaborg, May 31, 1921) had been determined by Prof. H. Rebel as *alpestrana* HS. while the other two (a male²) and a female taken by Bang-Haas: Ewalds Høj, Rungsted, June 25, 1871 and Hillerød, June 28, 1874, respectively) were placed under the name of *consortana* Wilk., the male being labelled: "*Tanaceti* Wilk.? recorded as *consortana* by Heine-mann.", the female being labelled: "*Tanaceti* Wilk. probably ♀ of *tanaceti* vide *consortana*". These two specimens are recorded by Bang-Haas (1881, p. 197) and C. S. Larsen (1916, p. 123) as *consortana* Wilk. A fourth specimen (♀), quite similar to the last mentioned and taken together with it by Bang-Haas (Hillerød, June 28, 1874), was placed under the name of *plumbagana* Tr. in the same collection.

The first mentioned specimen, determined as *alpestrana*, had not the slightest resemblance with that species and, although it was much more distinctly marked than the three others, it was most likely that all four were the same species. Having mounted the genitalia of the two males, I also found them identical.

Figures of the genitalia of a number of *Hemimene* species are reproduced by Kennel (1913, p. 623, p. 625, p. 637), Pierce (1922, pl. 33—34), and Benander (1939, p. 127—132). The figures in Kennel must, however, be used with criticism, as in some cases the genitalia figured do not belong to the right species but to some other one. Benander figures the male genitalia of the Swedish species and his paper gives the student of Danish species a useful help.

1) Figured here as fig. 1, no. 6.

2) Figured here as fig. 1, no. 7.

According to the literature the doubtful specimens just mentioned could be no other than *plumbagana* Tr., as far as the genitalia evidently agreed with Kennel's figure of the genitalia of *tanaceti* Stt. (p. 637) which was stated by Benander (1939, p. 131) to represent, not *tanaceti* Stt., but *plumbagana* Tr. The figures of the genitalia of *plumbagana* given by Benander (1939, pl. II) and Pierce (1922, pl. 33) do not precisely agree with Kennel's just mentioned figure, the cucullus of the valves being broader, but Benander (1939, p. 131) expressly states that this character in *plumbagana* is subject to a certain amount of variation.

Later on Benander (1946, p. 77) changed his view concerning this subject, now having come to the conclusion that *plumbagana* in reality must cover two species, one of which being that figured by Kennel, stating that this species, which he terms "*tanaceti* Kenn. nec. Stt.", must be given a new name.

At that time I discussed the problem with him, but got the impression that the chief feature distinguishing the two species had to be the presence or absence of an obtuse projection at the inside of cucullus. Going over my mounts I was, however, unable to find two species; some of the specimens possessed this character, in others it was absent, but apparently no definite connection existed between this character and that of the wing markings. I therefore satisfied myself that *plumbagana* Tr. was a species showing considerable variability concerning wing patterns as well as genitalia.

Recently my friend, Mr. E. Kjær, pointed out for me that the differences in size, markings, colour, &c., between some of the "*plumbagana*" specimens in reality were so pronounced that they could, in his opinion, impossibly belong to the same species. I then examined a considerable number of specimens, including females, and now it became obvious that there were two distinct

species, the first of which I figure here as fig. 1, no. 1—4, the second as fig. 1, no. 5—8. The male genitalia of the same specimens of the two species are shown in fig. 2, no. 1—4 and fig. 2, no. 5—8 respectively; while

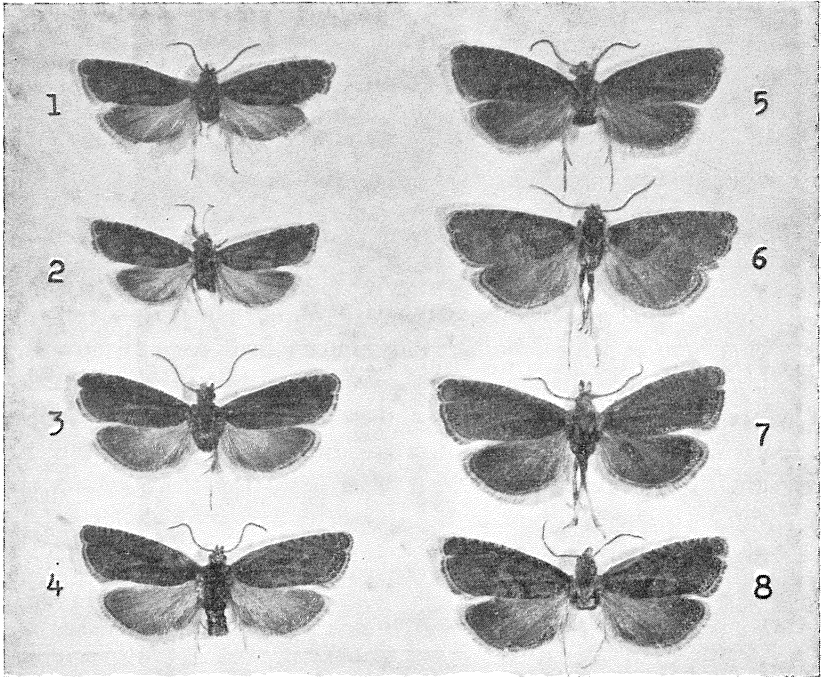


Fig. 1. No. 1—4: *Hemimene plumbagana* Tr., no. 5—8: *H. cinerosana* HS. ($\times 2\frac{3}{4}$) — No. 1: Møens Klint $7/7$ 42, no. 2: Amager $21/6$ 45, no. 3: Kregme $30/5$ 48, no. 4: Hannenov $16/6$ 46, no. 5: Mellem-skoven Falster $10/7$ 46 (leg. N. L. Wolff), no. 6: Faaborg $31/5$ 21 (leg. C. S. Larsen), no. 7: Ewalds Høj, Rungsted, $25/6$ 71 (leg. Bang-Haas), no. 8: Hillerød $15/6$ 40 (leg. van Deurs).

fig. 3, no. 9—10 and fig. 3, no. 11—12 show the female genitalia. Both species are inclined to variation and some individuals may come very close to each other, but as a whole the two species are very different.

The first one (fig. 1, no. 1—4) is the smaller, exp. 11—13 mm., ground colour dark grey, sometimes with a greenish tint, the forewings transversed by a number of whitish striæ, rather sharply angulated near the middle of the wing. Hindwings in the male light grey,

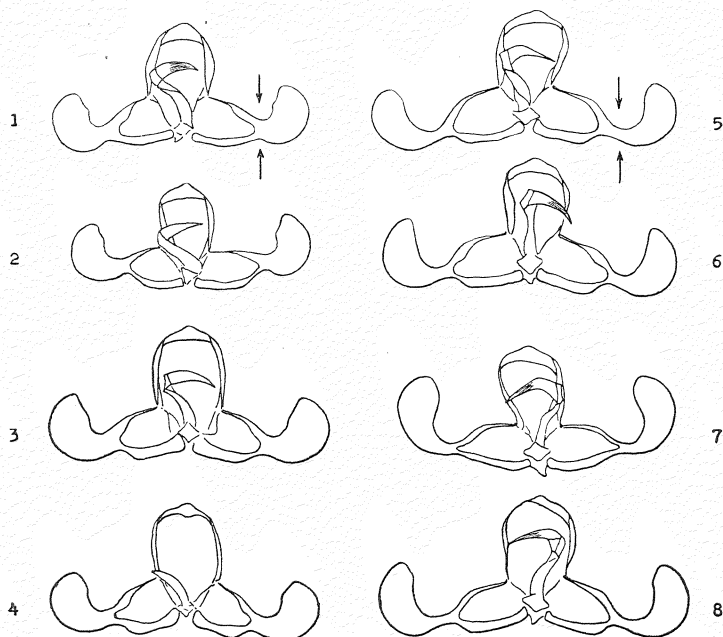


Fig. 2. Male genitalia (x 18). No. 1—4: *Hemimene plumbagana* Tr., no. 5—8: *H. cinerosana* HS. — Same specimens as shown on fig. 1.

whitish near the base. The typical form of this species is figured by e. g. Kennel (pl. 23, fig. 40). The ostium plate of the female genitalia (fig. 3, no. 9—10) shows a well defined orifice strongly chitinized on the edge, ductus bursæ very weakly defined. The male genitalia (fig. 2, no. 1—4) have the inner margin of cucullus irregular, convex, the base of cucullus short and broad.

The figures of the male genitalia of *plumbagana* given by Pierce (pl. 33) and Benander (1939, pl. II) represent this species.

The second species (fig. 1, no. 5—8) has a wing expanse of 13—16 mm, the wings are broader and darker, markings often very indistinct. Ground colour ochreous brown, dorsal patch, if present, slightly paler than the ground colour, broad, subtriangular, reaching the middle of the wing, divided by a narrow darker shade. Hind-

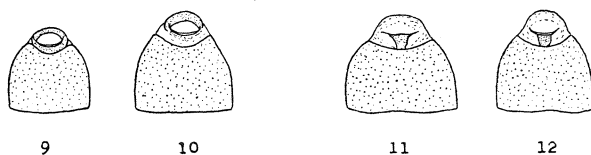


Fig. 3. Female genitalia, ostium plate (x 18). No. 9—10: *Hemimene plumbagana* Tr., no. 11—12: *H. cinerosana* HS. — No. 9: Kregme $\frac{29}{6}$ 47, no. 10: Kværkeby $\frac{22}{6}$ 41 (leg. N. L. Wolff), no. 11—12: Hillerød $\frac{28}{6}$ 74 (leg. Bang-Haas).

wings in both sexes brown. The ostium plate of the female genitalia (fig. 3, no. 11—12) has the orifice weakly chitimized, ductus bursæ well defined. The male genitalia (fig. 2, no. 5—8) have the inner margin of cucullus very regular, excavated, the base of cucullus longer and narrower. The figure of the genitalia of *tanaceti* in Kennel (1913, p. 637, fig. 36) represents the male of this species, while Pierce's figure (pl. 33) of *plumbagana* female represents the female of this species.

Most of the Danish specimens of "*plumbagana*" belonged to the first species, but a considerable number proved to be the second species, to which a male and a female from Mecklenburg, Germany (det. *tanaceti*) in the collection of the Zoological Museum of Copenhagen also belonged.

Having come to this conclusion, I communicated with my friend, Mr. Benander, who told me that he in de-

tails agreed with my statement and, having examined his mounts, informed me that his material belonged to the first species, except some specimens from Blekinge (Sweden) and a specimen from Finland, which belonged to the second species. On his request I here publish the results.

As to the first species there can be little doubt that it represents what is generally considered *plumbagana* Tr. The specimens figured by e. g. Herrich-Schäffer (1849, pl. 41, fig. 289) and Kennel (1913, pl. 23, fig. 40) as well as the descriptions in the commonly used handbooks directly point to this species. Moreover the original description of *plumbagana* (Treitschke 1830, p. 218—219) stating: “. . . der Grund ist mit vielen weissen Querlinien durchschnitten, jene bis zur Flügelmitte sind bogenförmig, die folgenden, hinter einer bindenartig dunkleren Stelle der Hauptfarbe *eckig*, auf der Mitte einen Winkel bilden. Alle Linien entspringen aus weissen Streichen und Häckchen am Vorderrande . . .” seems sufficiently explicit. The species figured here as fig. 1, no. 1—4 then has to be termed *plumbagana* Tr.

The second species is more difficult to interpret. That a so widely distributed species should never have been described, did not seem likely. As stated above it has in the past been mixed with *plumbagana*, but the possibility also existed that it could be identical with one of the species described under the following names:

(1) *tanaceti* Stt. As previously mentioned the genitalia figured by Kennel (1913, p. 637) as *tanaceti* Stt. represent the species in question, and it is likely that the Continental material as a whole also belongs here. The figure of the genitalia of *tanaceti* Stt. given by Pierce (1922, pl. 33), who figures them from British specimens, being entirely different, the species can, however, not be Stainton's *tanaceti*.

(2) *consortana* Wilk. In this case Pierce's figures

(pl. 33) of the genitalia also clearly indicate quite another species.

(3) *senectana* Gn. In spite of the resemblance with *senectana* the figures of the genitalia given by Pierce (pl. 33) and Benander (1939, pl. II) eliminate this species.

(4) *cinerana* Hb. Herrich-Schäffer (1849, p. 290) and Staudinger-Rebel (1901, II, p. 128) refer this species (with a ?) to *plumbagana* Tr. The figure in Hübner (pl. 33, fig. 211) is, indeed, very poor, but the shape of the wings in that figure excludes the possibility that it can belong to the species in question.

(5) *salicetana* Prittwitz. This species is by Prittwitz (1844, p. 419—421) described as near related to *Tortrix Zachana* (*Lipoptycha plumbana* Sc.). From the description appears that it has to be referred to *Hemimene plumbagana* Tr., as also stated by e. g. Staudinger-Rebel (1901, II, p. 128).

(6) *herbosana* Barr. According to Pierce (1922, p. 95) = *tanaceti* Stt.

(7) *saturnana* Hein. Although referred to *tanaceti* Stt. by Staudinger-Rebel (1901, II, p. 128), who erroneously treats *tanaceti* Stt. as a *Lipoptycha*, *saturnana* Hein. cannot belong to the genus *Hemimene*, as far as Heine-mann (1863, p. 239) directly states that he has both sexes and that the costal fold on the forewing is missing.

(8) *cinerosana* HS. This species is considered very rare, in the hand-books recorded only from Austria and Hungary. As appears from Kennel and Hering great confusion has occurred as to the identification of the species *tanaceti* Stt., *senectana* Gn., and *cinerosana* HS. Kennel (1913, p. 637) remarks that most of the Continental *tanaceti* may belong to *senectana* Gn., *cinerosana* HS., or *Lipoptycha saturnana* Gn., while Hering (1932, p. 217) mentions that possibly *senectana* Gn. is nothing but a form of *cinerosana* HS., or *tanaceti* Stt.

The figure of the type of *cinerosana* given by Herrich-Schäffer (1849, pl. 41, fig. 290) as well as his description (ib. p. 255) seems, however, to correspond with the species in question. The figure in Kennel (pl. 23, fig. 44) also agrees. The size (exp.) of *cinerosana* is specified rather different in the literature. Kennel (ib. p. 635) states 17 mm, and Herrich-Schäffer (l. c.), who had only two specimens before him, gives 20 mm (9 "Linien"). The largest of the Danish specimens measures 16 mm, but in return Spuler (1910, p. 288) states *cinerosana* being of the same size as *plumbagana*, which is less than the average Danish specimens.

Applying to the British Museum in London I was informed that they possessed two specimens (♀♀) of *Hemimene cinerosana* HS. (from Asia Minor, ex coll. Paravicini) and thanks to the kindness of Mr. W. H. T. Tams I got the opportunity to examine the genitalia, which proved to be identical with those figured here as fig. 3, no. 11—12.

I now feel convinced that the species figured here as fig. 1, no. 5—8 must be *cinerosana* HS. and that it is this species which in the past has caused most of the confusion in this group of the genus *Hemimene*, being mixed with as well *plumbagana*, as with *tanacetii*, *con-sortana*, and *senectana*.

The distribution of *cinerosana* HS. now has to be explored in details. The species is most easily obtained flying in the dusk near *Tanacetum*, the probable food plant of the larva.

Summary.

Examination of the material of *Hemimene plumbagana* preserved in various collections in Copenhagen has proved that two distinct species were mixed, the first of which is figured here as fig. 1, no. 1—4, the second as fig. 1, no. 5—8.

A study of the literature leads to the conclusion that the first species is *plumbagana* Tr., while the second species must be identified as *cinerosana* HS. The last

named species is in the hand-books recorded only from Austria and Hungary but seems to have a wide distribution. Further records are: Finland, Sweden, Denmark, Germany, the British Isles, Asia Minor. In the past it has been confused with *plumbagana* Tr., *consortana* Wilk., *senectana* Gn., and *tanaceti* Stt. Probably most of the Continental material of *tanaceti* has to be referred to *cinerosana* HS.

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