

STUDY OF THE BOHEMIAN SPECIES OF THE GENUS  
ERRANNIS HÜBNER (LEP.)

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*Errannis defoliaria* CL.

CLERCK, Syst. Nat. allegatis Holmiae 1759—1764.

STERNECK, Prodrumus 1929, p. 204 (No. 868).

Syn.: *pulveraria* HUFN. nec. L. Teste SEITZ, Großschmett. Pal. IV, 1915, p. 352.*discolor* STRÖM., l. c.*bistrigaria* GIORNA, l. c.ab. *obscura* HELFER (*nigrofasciata* NEUBURGER), l. c.ab. *progressiva* HAVERK. (*brunnescens* RBL.), l. c.ab. *holmgreni* LAMPA (*obscurata* STGR.), SEITZ, Suppl. IV, 1940, p. 415.ab. *punctata* GORNIK, l. c.ab. *nigra* BANDERMANN, l. c.ab. *destrigaria* GORNIK, l. c.ab. *tristrigata* SCHAW., l. c.ab. *eutaeniaria* SCHAW., l. c.ab. *albescens* SCHAW., Verh. Zool.-bot. Ges. Jg. 64, 1914, p. 371.ab. *fuscognata* HEINDRICH D. E. Z. 1916—17, p. 530.race: *teriolensis* DANNEHL, SEITZ, Suppl. IV, p. 415.

Habitat: Europe, Armenia.

For orientation I give briefly the definitions of the species and aberrations. PROUT (SEITZ, Pall. IV, 1915, p. 352): "The male has longer wings than *aurantiaria* and *marginaria*, is relatively larger, the areal spot and line are blacker, the antemedial vein is at the bend strongly bent. Extremely variable, but always recognisable by the shape and by the antennae in which each segment has two pairs of tufts of very long ciliae. The female is wingless, whitish or clear yellow, with black lines and with regular black dorsal spots. The typical form has a light yellow ground colour with reddish bands which are unsharp and accompany the lines."

J. CULOT (Noctuelles et Géomètres d'Europe II, p. 81) says: "*Defoliaria* is so variable that it is rare to find two similar specimens. As typical are considered those specimens whose wings are decorated on a background of straw-yellow with distinct black lines accompanied by rust-coloured bands."

Ab. *obscura* HELFER (*nigrofasciata* NEUBURGER) — has the ground colour of the typical form or often whitish, the bands blackish.

Ab. *progressiva* HAVERK. (*brunnescens* RBL.) — ground colour uniformly reddish brown to blackish, but with black bands.

Ab. *holmgreni* LAMPA (*obscurata* STGR.) — as the preceding one, but lacking bands. Fringes one-coloured.

Ab. *punctata* GORNIK — as the preceding one, but with areal dots.

Ab. *nigra* BANDERMANN — is an extreme form, black without drawings.

Ab. *destrigaria* GORNIK — upper side lighter or darker red ochre brown, with the blackish brown transverse bands lacking completely while at the same time their wide and darker shading is preserved.

Ab. *tristrigata* SCHAW. — has in the middle of the anterior wings still a third transverse band.

Ab. *eutaeniaria* SCHAW. — has above and below a median band on the posterior wings.

Ab. *albescens* SCHAW. — is strongly whitish yellow, scarcely dusted, almost without drawings — from Mostar.

Ab. *fuscognata* HEINDRICH — has on the anterior wings blackish brown lines, the ground colour is unchanged.

The race *teriolensis* DANNEHL differs by its considerable size (44 to 46 mm); it is a normally coloured, little variable, local race from the Southern Tyrol.

In the collection of the National Museum the species *Erannis defoliaria* is very numerous represented. First there is a number of very light yellow, more or less dusted specimens. All these specimens and a whole number of the following ones are characterised by the anterior wings having a more darkly marked very small basal part and very close to this a rather arc-shaped transverse band and then a zigzagging transverse band near the distal end of the wing. The dark coloration of the basal part and of the two bands is orange, rusty brown to brownish black. Also the ground colour changes in weaker tones from straw yellow via orange, rusty to reddish brown. Within this variation series there are individual specimens in which a brown or rusty dusting of the anterior wings is more or less visible. Most specimens have a somewhat translucent character due to the slight dusting (loc.: Krč, Chuchle, Varnsdorf, Šluknov, Rumburk, Skalice, Jirny). With a closer dusting also the drawing stands out far more distinctly (loc.: Rozdělov, Svádov, Skalice, Krč, Česká Lípa, Splavy, Mariánské Lázně, Šluknov, Rumburk). Another interesting occurrence in this variation series is the stronger coloration of the whole apical part of the anterior wing outside the light median area and the darker zigzag line delimiting it. In such specimens a light, more or less distinct pre-apical wavy line is formed very often (loc.: Praha, Krč, Česká Lípa, Varnsdorf). A very interesting form of this series comes from Frýdlant. This specimen is coloured so that almost the whole inner surface of the anterior wings, delimited by an apically slightly indicated dark zigzag line, is straw yellow. Transverse bands are not developed at all in this form, the only drawing being the zigzag line mentioned above, and the part apical from this line is one-coloured light rusty with a very slightly indicated white wavy line. The base of the anterior wings is only very slightly dusted. I designate this aberration ab. *simplex* m. Another series

is formed by specimens which with a general light habitus and with finely preserved transverse bands have a more striking black zigzag line. Loc.: Rozdělov, Frýdlant, Chuchle, Skalice Splavy.

In the aberration *obscura* HELFER with a general light habitus of the butterfly two transverse bands, the prebasal and the broad pre-apical one, are considerably strongly emphasised on the anterior wings (loc.: Krč, Černošice, Trutnov, Šluknov, Rozdělov). In this series is a very good specimen from Trutnov with a special drawing. It is dark ochre, with the pre-apical shadow of the black line longitudinally divided so that two shadowy dark bands are formed. The inner shadowy band connects in the lower third of the wing with the band situated at the base, and again separates from it. I designate this aberration ab. *wihani* m.

The aberration *progressiva* HAVERK. appears to be very abundant in Bohemia to judge from the number of specimens collected (Praha, Česká Lípa, Děčín, Svádov, Varnsdorf, Rozdělov, Klánovice, Karlovy Vary, Šluknov). When we examine this aberration more closely we find that the basic colour tends to become intensively darker, from a rather light to a rusty brown and bluish grayish brown. Together with this also the intensity of the colouring of the lines and bands is considerably variable. When these transverse bands and zigzag line disappear these specimens pass into ab. *holmgreni* LAMPA. Thus this form has neither drawing nor shadows on the anterior wings, and its variability can be observed only in the greater or less darkening of the surface (loc.: Děčín, Frýdlant, K. Vary, Skalice). Very similar to this aberration is ab. *punctata* CORNICK, which differs from the preceding one only by having the spot on the anterior wings preserved (Praha, Děčín). Ab. *destrigaria* GORNIK is represented in our collection by specimen from Rozdělov, Děčín, Frýdlant.

In the females, which are as if yellow-back dappled, the variability shows only in the shade of the yellow colour and in the more or less present black spots. In most specimens the black spots form in the centre of the thorax and abdomen two bands interrupted by a band of the basic colour extending longitudinally between them. Only the specimen from Krč has in our collection irregularly scattered spots. Some specimens show a rather considerable tendency to darken (Skalice, Šluknov, Praha-Petřín). In these specimens the black colouring predominates; there is only little yellow. The females from Sweden, of which we have several specimens in our collections, agree in coloration completely with ours.

### *Erannis leucophaearia* SCHIFF.

SCHIFF., Systematisches Verzeichniß der Schmetterlinge der Wiener Gegend, Wien 1776.  
HERRICH-SCHÄFFER, Syst. Bearbeitung der Schmetterlinge von Europa, Bd. II, J. 1943,  
p. 61, female.

SPULLER, Die Schmett. Europas, Bd. II, p. 98, 1910.

SEITZ, Großschmett. Pal. IV, 1915, p. 352.

SEITZ, Suppl. Pal. IV, 1940, p. 412.

CULOT, Noctuelles et Géomètres d'Europe. Géomètres. Vol. IV, 1919—20.

NORDSTRÖM, WAHLGREN, Svenska Fjärilar, Stockholm, 1941.

STERNECK, Prodrromus 1929, p. 203 (no. 865).

VÖLKER: *H. leucophaearia* variation, Int. ent. Z. 21, p. 383.

BADEMANN, *Erannis leucophaearia* ff. *desparsata*, *destrigaria*, Ent. Z. 51, p. 394.

SÜSSNER, *Hyb. leucophaearia* (SCHIFF. ab. *merularia* WEYN., Jhb. des Sudetendeutschen Entomologenbundes f. das Jahr 1940.  
Syn.: *trilinearia* SIBILLE.

Habitat: Europe, Armenia, North Africa, Manchuria.

List of the aberrations:

*Ab. nigricaria* HB. — proximal and, apart from the subterminal line, whole distal area strongly darkened.

*Ab. medioobscuraria* UFFELN - shows the median area broadly blackish filled, especially between the medial and postmedial line.

*Ab. merularia* WEYM. (*funebraria* THIERRY) — is one-coloured dark brown to blackish.

*Ab. confusaria* PREISSECKER — both lines delimiting the median area touch in the bend and diverge again.

*Ab. subrufaria* UFFELN, anterior wings brownish black.

*Ab. desparsata* HEYD., all wings are pure ivory white without brownish gray dusting, with all three lines on the anterior wings sharply blackish gray as if picked out in ink. Posterior wings with two transverse lines indicated.

*Ab. destrigaria* HEYD. — the ante- and postmedial of both wings disappear in the close uniform dusting.

*Ab. fuscata* HAWRK. (SEITZ, Suppl. p. 412) — can scarcely be a synonym of *merularia*, at any rate not if the enlarged figuring of *fuscata* in Ann. Soc. Ent. Bulg. 1904, Taf. 1, Nr. 3797 is correct. This figuring shows the bordering and the median area at least as light as the typical figure by HÜBNER Nr. 195 (in my two editions), whose lines are just as strong and black. According to the figuring cited *fuscata*, which has only a slightly brown covering, would have to be regarded as a synonym of *leucophaearia*.

Race *dira* BTLR. abundant in Japan.

In this species it is very interesting that in most of the collections in the National Museum the female was wrongly determined and confused with the female of the species *E. marginaria*. The same mistake occurs in several entomological works, where the female is figured so as to be rather reminiscent of the species *marginaria*. See e. g. CULOT's work (cited above), pl. 51, no. 1050 and especially no. 1053, where the figure is said to represent the female of the species *leucophaearia* ab. *merularia*, but shows rather ab. *denigraria* UFFELN of the species *marginaria*. Also in the excellent work "Svenska Fjärilar" a female of *leucophaearia* is figured, which again resembles more *marginaria*. There is after all a great difference in the length of the wings of the females of the two species, even though the wings are very stunted in both. The female of *marginaria* has relatively much larger wings than female of *leucophaearia*, in which they are almost mere stumps. There is also a great difference in the palpa of the females of the two species. In *leucophaearia* especially the second segment of the palpa is very short and broad. HÄRRICH-SCHÄFFER says in his work: "The female of *leucophaearia* has unusually short and narrow wings with long hairlike fringers at the tip. Nut-brown with many admixed

white scales, especially distinct on the head, thorax and median line of the abdomen. Ends of the tarsal segments whitish. Antennae regularly black and white banded. Posterior tibiae somewhat conical, not longer than the femurs, middle spurs in two thirds, very small."

SPULLER: "*leucophaearia* shorter built than the female of the preceding species (*bajaria*), the wings which are just as short are with individual fringe-like hairs."

Concerning the males of the species *E. leucophaearia* their variability is great, as indeed is obvious from the literature and from our collections. Thus we have many specimens very variable with regard to colouring and drawing. Concerning the colouring specimens with a fine brownish gray, often brown dusting predominate. Also the intensity of the coloration is very variable. From light specimens there is a continuous series to very darkly dusted specimens. In these dark specimens the white interrupted wavy line in the marginal border stands out. Here we can also observe that the median area is either somewhat lighter or almost fuses with the basic colour of the wings. This phenomenon is, however, visible also in some lighter forms. The darkest forms are mostly from Northern Bohemia, but very dark specimens are also from localities around Prague. Very numerous represented is a striking aberration, *nigricaria* HBN.; most specimens are in the collection of Nickerl and come from Krč near Praha. Further specimens are from Tábor, Děčín, Teplice. In all these specimens the interrupted strong white wavy line in the distal dark area is very striking. But we have also specimens where this wavy line disappears completely in the dark brown margin of the wing. Also transition specimens to the aberration *nigricaria* are very numerous represented in the collection. Some specimens of this aberration have in the light median area also a dark line indicated, passing through the centre. The second, very beautiful aberration is ab. *merularia* (Teplice). Also to this aberration we have several very beautiful transition forms. Thus we have a specimen in which the anterior wings are entirely brown while the lines delimiting the median area are very strongly marked. The collections contain also ab. *desparsata*, in which all the wings are of a pure ivory colour without any brownish gray dusting. We have such specimens from Krč near Praha, Kobylisy, Jirny, Rumburk. These specimens impress one by their special, almost silky lustre. The collections have also numerous transition specimens to this aberration. Ab. *destrigaria* HEYD., where both lines disappear in the dense uniform spraying, are from the localities of Chuchle, Závist, Hrádek n. Nisou. Very beautiful ab. *confusaria*, where the lines delimiting the median area touch in the bend and again diverge, are from Kobylisy and Rumburk. Thus the variability shows itself here in the lines delimiting the median area. When we consider these lines we see that the outer line is formed by the wavy line, which has two convex bends in the direction towards the apical end of the wing and three concave bends in the direction towards the base of the wing. The basal line forms an arc with reference to the base of the wings. The median line when preserved is usually slightly bent in an arc or is almost straight. Its distance from the two lines delimiting the median area is very variable. It is only in some cases that it runs me-

dially, in most cases it has a tendency to approach the outer line, especially in the lower part of the wing at the third concave bend, with which it fuses in many cases.

### *Erannis marginaria* F.

SEITZ, Großsmett. Pal. IV, 1915, p. 352.

SEITZ, Suppl. IV, 1940, p. 414.

STERNECK, Prodrömus, 1929, p. 204, No. 867.

Syn.: *testacea* RETZ.

*progemmaria* HBN.

*capreolaria* ESP.

Habitat: Europe, Central Asia.

SEITZ: "male less golden yellow than the species *aurantiaria*, with a somewhat lighter median area and with an interrupted subterminal line, as well as with more whitish posterior wings. The border spots are more vivid. In the females both wings are longer than in *aurantiaria*, the posterior ones are more lengthened."

SEITZ, Suppl. IV, p. 414: "On this occasion it may be recalled that in the original description FABRICIUS designated the colouring with the words: with whitish dusted wings approximately as shown in HÜBNER's fig. 183; our figure in the principal volume 18k turned out too yellowish brown, and the typical form would approach more *pallidata*."

Forms described of the species:

Ab. *pallidata* TRTL., is more whitish.

Ab. *denigraria* UFFELN is on the anterior wings from the root to the medial line and from the postmedial to almost the margin brownish. The female has the proximal half of the wings darkened.

Ab. *fuscata* (MOSLEY) (*infumata* FUCHS, *uniformata* FUCHS) has both wings strongly browned, almost black.

Ab. *unistrigaria* UFFELN, the male is characterised only by the sharper postmedial transverse band of the anterior wings.

Ab. *diversaria* F. (*rufipennaria* FUCHS) has one-coloured redder anterior wings. Lines usually normal, in FABRICIUS's type suppressed.

When we compile the whole series of specimens of this type we see that there is here a whole series of transitions from light forms to dirty reddish brown forms. In some specimens the dusting is only very slight, in others it is stronger, and some give the impression of being slightly sprayed. The anterior wings have three lines, the arc-shaped basal line, the almost straight medial line, and the broken postmedial line. In our collections the basal and medial lines lack in some specimens, whereas the broken postmedial line lacks only in two specimens. The posterior wings have usually one line, in isolated cases two lines. The coloration of the area beyond the postmedial line is usually darker. A lighter interrupted line is often indicated in this area. Two specimens (Northern Bohemia, Jirny) in our collection belong to ab. *pallidata* TRTL.; they are most almost without any drawing, very light. Ab. *denigraria* UFFELN is represented also by numerous transitions to it (Teplice). Ab. *unistrigaria* UFFELN is characterised only by the sharper postmedial band. We have a very large number

of such specimens and transitions (from Northern Bohemia, Jirny). Worth mentioning is a specimen from Teplice in which only the postmedial line hemmed by a narrow sharply marked band has been preserved on a light ground. Further there are in our collections two completely identical specimens, in which all lines have disappeared and only a darker band and a somewhat darker margin have been preserved and between them the interrupted lighter wavy line stands out. Many specimens belong to the ab. *diversaria* F. (Klánovice, Jirny, Krč, Kyšičky, Č. Lípa, Hrádek n. Nisou, Teplice). Most of them have all three lines preserved; it is only in three specimens out of a total of twenty-six that the basal line lacks, and in two specimens only the medial line.

The females of this species have the wings coloured in different shades, either ochre to brown, the larger part light grayish brown, only some specimens whitish gray. Ab. *denigraria* is not among our females. The drawing on the wings of the females is composed of two lines on the anterior and posterior wings. The preapical lines of both wings form as if one line. The second line of the anterior wings is rather considerably far from the first line, whereas on the posterior wings it is very close to it and sometimes fuses with it. Some specimens have on the anterior wings still a third, medial line, which then approaches the preapical line or fuses with it.

The specimens from Southern Russia which we have in our collections (females) are light gray.

#### *Erannis aurantiaria* HB.

HÜBNER, Syst. Vers. 1822.

SEITZ, Großschmett. Pal. IV, 1915, p. 352.

SEITZ, Suppl. Pal. IV, 1940, p. 414.

STERNECK, Prodrömus, 1929, p. 204, No. 866.

Syn.: *mellearia* SCHARFENB.

Habitat: Europe, Anterior Asia.

#### Survey of aberrations:

Ab. *fumipennaria* HELLW.

Ab. *tristrigata* HEIN. (*fasciata* PROUT, *fasciaria* LINSTOW).

Ab. *alvindata* BANDERMANN.

SEITZ: "The male differs from all other species by its vivid golden brown colouring, but for the rest it resembles *marginaria*. The antennae (comb-like, just as in *marginaria*) are similar to those of *leucophaearia*. Female golden brown, wings extremely short, with two dark lines.

Ab. *fumipennaria* HELLW., wings brownish (purple brown), only the fringes yellow, also the posterior wings more or less smoked.

Ab. *tristrigaria* HEIN., with still another line which is straight and subbasal so that the wings have all in all four lines with the subterminal band.

Ab. *alvindata* BANDERMANN has a greenish yellow colouring on all wings, drawing normal."

In our collections this species is represented most numerously by ab. *tristrigaria*. As far as the shade of colour is concerned we have speci-

mens ranging in colour shade from very light to dark, the latter being more closely dusted with dark scales. Some specimens have the anterior wings sprayed dark (Praha, Ústí, Mariánské Lázně). The subterminal band forms in some specimens an almost continuous band, in others it appears as a more or less developed row of spots (Praha, Šárka, Závist, Č. Lípa, Šluknov, Karlovy Vary, Litoměřice). An extreme example of this series is given by several specimens in which in the area between the postmedial and the subterminal line a connected, broad, purplish band is formed (Praha, Litoměřice). Less numerous are specimens with three lines, the basal, medial and postmedial one. The variability of these lines shows itself mainly by the basal and medial lines being more or less far apart from each other, with the medial line closer to the basal line than to the postmedial line. Further the postmedial line may sometimes occur as a narrow band. In many specimens this line divides almost from the anterior margin of the wing (as far as to the maximum curving) and then unites again, so that it forms in these places an oval area. Also the drawing on the posterior wings varies. The greater number of specimens has on the posterior wings two lines, one which attaches itself directly to the postmedial line or runs close to it, and another line which begins on the median line or in its proximity. This second line is more or less suppressed. In some specimens it disappears completely. We have, however, specimens with the complete drawing on the anterior wings while on the posterior wings the drawing on the anterior wings while on the middle of the wings. We see also specimens where marked black dots are beautifully developed at the root of the fringes. These dots sit either on both pairs of wings or only on one, sometimes there are only traces of them, in other cases they lack completely. Then we arrive at specimens where the whole drawing is almost suppressed (Děčín, Krč).

SEITZ on the female: "golden brown, wings particularly short, with two dark lines." In our collections two specimens are worth mentioning, a very dark, entirely brownish gray specimen from the vicinity of Praha and a very light specimen from Zbečno.

#### *Erannis bajaran* SCHIFF.

Syn.: *aerugaria* SCHIFF.  
*ligustraria* LANG.  
*sericearia* BKH.

The normal specimens are characterised by the anterior wings being brownish gray, with the median area almost gray whereas the proximal and the distal parts of the wing are more brown coloured. Through the median area there runs a dark line, more or less developed; but in some specimens it disappears completely. Some of our specimens have the median area very light gray; but specimens with a dark gray median area predominate. There are here several transitions; thus there is in our collections a specimen from Zbečno which is completely brownish gray, the bordering lines of the median area and the white wavy line are, however, completely preserved. Similar to this specimen are also the dark brownish gray specimens with the brown colour predominating. Our collection includes



specimens which we can place to ab. *unicolor* SCHAW., characterised by the fact that it is entirely without drawing, one-coloured dirty gray. There are here also many transitions to this aberration. Ab. *sorditaria* HB. is not found in the material from Bohemia, but we have here two good specimens from Dalmatia. This aberration is characterised by total albinism, only the area at the root of the wings and the band between the submedian and subterminal line remain dark. From Bohemia we have only two, rather distant transition forms. In Silbernagel's collection a specimen is designated as ab. *sorditaria*, which is not even a very distant transition to it. It is an entirely dark brownish gray specimen in which the lines of the median area are completely lost.

In the collections of the National Museum we have specimens from Vůznice, Zbečno, Roblín, Plasy, Karlštejn, Litoměřice, and besides also from Austria, Hungary, Dalmatia. Though in the literature the time of occurrence is given by some authors as from October to March we have in our collections specimens caught in the second half of October and the first half of November.