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Directions for using the Binder.



1. PLACE BINDER FLAT ON DESK OR TABLE AS SHOWN.
2. PRESS BACK TOP BOARD *with Left Hand* - THIS WILL OPEN THE SPRING BACK & CONTENTS ARE INSERTED OR RELEASED *by Right Hand.*
3. SIDES OR BOARDS *Must Not* BE PULLED APART TO OPEN.

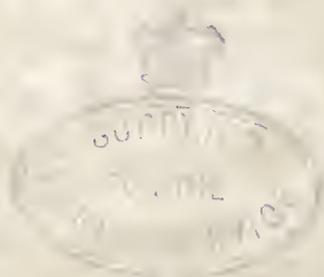
Stocked in the following stock sizes:-

No. 1 Octavo upright	9½ x 5½ in.	No. 01 Octavo oblong	5½ x 7¼ in.
" 2 Quarto upright	11¼ x 8¼ in.	" 02 Quarto oblong	9 x 10¼ in.
" 3 Foolscap upright	13¾ x 8 in.	" 03 Foolscap oblong	8¾ x 12¾ in.
No. 4 Music	- - 15 x 10¼ in.		

Also Obtainable in the following sizes:-

No. 1a Small Quarto	10¾ x 6¾ in.	No. 4b Dance Music	13 x 9¼ in.
" 2a Glee	11¾ x 8½ in.	" 5 Large Post Folio	16½ x 10½ in.
" 2b Students Papers	12 x 9 in.	" 6 Illus. London News	17 x 11½ in.
" 4a "Musical Times"	11 x 6¾ in.	" 7 Brief	13½ x 15½ in.
No. 8 Demy	18 x 12 in.		

REGISTERED **PIONEER** TRADE MARK



Noct. Vol. 1.

ABERRATIONAL
AND
SUBSPECIFIC
FORMS OF
BRITISH
LEPIDOPTERA

BY

A. L. GOODSON & D. K. READ.

FOR INTERNAL USE ONLY

Volume 7

Noctuidae Part 1

Aberrational Forms

Noctuidae Vol. I.

Index to Species.

advena Fabr.			dahlia Hbn.	D.	22.
see bombycina Hufn.	P.	58.	decimalis Poda.	T.	93.
advena Schiff.	O.	88.	denticulatus Haw.	A.	8.
see opima Hbn.			dentina Hufn.		
agathina Dup.	A.	28.	see nana Billb.		63.
albicolor Hbn.	H.	91.	depuncta Linn.	A.	27.
albimacula Bkh.	H.	74.	dissimilis Knoch.		
alpicola Zett.	A.	29.	see suasa Schiff.		66.
ashworthii Dbldy.	A.	30.	ditrapezium Schiff.	A.	34.
augur Fabr.	G.	19.	dysodea Schiff.	H.	70.
baja Schiff.	A.	32.	exclamationis Linn.	A.	11.
barrettii Dbldy.	H.	79.			
bicolorata Hufn.	H.	71.	festiva Schiff.		
bicruris Hufn.	H.	76.	see mendica Fabr.		21.
biren Goeze.	H.	69.	fimbriata Schreb.	L.	48.
bombycina Auct.			flammea Curt.	Mel.	97.
see biren Goeze.	Had.	69.	flammea Schiff.	Pan.	90.
bombycina Hufn.	Pol.	58.	florida Schmidt.	D.	24.
brassicae Linn.	M.	55.			
brunnea Schiff.	D.	20.	genistae Bkh.		
			see w-latinum Hufn.		65.
caesia Schiff.	H.	72.	glareosa Esp.	A.	26.
calcatrippae View.	H.	92.	glaucia Hbn.		
capsincola Schiff.			see biren Goeze.		69.
see bicruris Hufn.	H.	76.	gothica Linn.	O.	81.
capsophila Dup.	H.	87.	gracilis Schiff.	O.	89.
carpophaga Bkh.			graminis Linn.	C.	95.
see perplexa Schiff.	H.	78.			
castanea Esp.	A.	31.	hepatica Clerck.	P.	57.
cespitis Schiff.	T.	94.	herbida Schiff.		
chrysozona Bkh.			see prasina Schiff.		40.
see dysodea Schiff.	H.	70.			
cinerea Schiff.			incerta Hufn.	O.	86.
see denticulatus Haw.	A.	8.	instabilis Hbn.	O.	86.
clavigerus Haw.			interjecta Hbn.	E.	46.
see clavis Hufn.	A.	7.	ipsilon Hufn.	A.	12.
clavis Hufn.	A.	7.	irregularis Hufn.	A.	80.
c-nigrum Linn.	A.	33.			
comes Hbn.	E.	44.	janthina Schiff.	E.	42.
compta Schiff.	H.	75.	lepida Esp.		
confusa Hufn.	H.	73.	see perplexa Schiff.		78.
conspersa Schiff.			leucographa Schiff.	G.	49.
see confusa Hufn.	H.	73.	lucernea Linn.	A.	16A.
conspicillaris Linn.	X.	96.	lunigera Stephs.	A.	10.
contigua Schiff.	H.	68.			
cordigera Thunb.	A.	53.	melanopa Thunb.	A.	54.
corticea Schiff.			mendica Fabr.	D.	21.
see clavis Hufn.	A.	7.	miniosa Schiff.	O.	32.
cruda Schiff.	O.	83.	munda Schiff.	O.	87.
cucubali Schiff.			myrtilli Linn.	A.	52.
see rivularis Fabr.	H.	77.			
cursoria Hufn.	E.	1.			

Noctuidae Vol. I.

Index to Species (cont.).

nana Billb.	H.	63.	stabilis Schiff.	O.	84.
nana Rott.			stigmatica Hbn.		
see confusa Hufn.		73.	see rhomboidea Esp.		36.
nebulosa Hufn.	P.	59.	strigula Thunb.		
nigricans Linn.	E.	2.	see varia de Vill.		14.
nitens Haw.			suasa Schiff.	H.	66.
see bombycina Hufn.		58.	subsequa Schiff.		
			see orbona Hufn.		45.
obelisca Schiff.	E.	4.			
occulta Linn.	E.	41.	thalassina Hufn.	H.	67.
oleracea Linn.	D.	61.	tincta Brahm.		
opima Hbn.	O.	88.	see hepatica Clerck.		57.
orbona Hufn.	E.	45.	triangulum Hufn.	A.	35.
			trifolii Hufn.	D.	64.
			tritici Linn.	E.	3.
perplexa Schiff.	H.	78.	trux Hbn.	A.	10.
persicariae Linn.	M.	56.	typica Linn.	N.	51.
piniperda Panz.					
see flammea Schiff.		90.			
pisi Linn.	C.	62.	umbrosa Hbn.		
plecta Linn.	O.	25.	see sexstrigata Haw.		38.
popularis Fabr.					
see decimalis Poda.		93.			
populeti Fabr.	O.	85.	varia de Vill.	L.	14.
porphyrea sensu Edelsten			vestigialis Hufn.	A.	6.
see saucia Hbn.		16.			
porphyrea Schiff.					
see varia de Vill.		14.	w-latinum Hufn.	H.	65.
praecox Linn.	A.	15.			
prasina Schiff.	A.	40.	xanthographa Schiff.	A.	37.
pronuba Linn.	N.	47.			
pulverulenta Esp.	O.	83.			
puta Hbn.	A.	9.			
putris Linn.	A.	39.			
pyrophila Schiff.					
see simulans Hufn.		17.			
ravida Schiff.	S.	18.			
reticulata de Vill.					
see calcatrippae View.		92.			
rhomboidea Esp.	A.	36.			
ripae Hbn.	A.	13.			
rivularis Fabr.	H.	77.			
rubi View.	D.	23.			
rubricosa Fabr.	C.	50.			
sagittigera Hufn.	P.	60.			
saponariae Bkh.					
see calcatrippae View.		92.			
saucia Hbn.	P.	16.			
segetum Schiff.	A.	5.			
serena Schiff.					
see bicolorata Hufn.		71.			
sexstrigata Haw.	A.	38.			
simulans Hufn.	R.	17.			
sobrina Bsd.	E.	43.			
spinaciae View.					
see dysodea Schiff.		70.			

cursoria Hufn. typical form.

Ground colour yellowish-grey to yellowish, often with brownish tint, markings distinct.

spec. ? sagitta Hbn. Samml. Eur. Schmett. 1809-13 pl. 130 f. 596.

The figure shows the costa and inner margin bright ochreous, the latter with a reddish tint. Above the median nervure a long blackish wedge-shaped mark in which are placed the reniform and orbicular, contrastingly paler. This extends from just before the reniform down to the fine transverse basal line. Below the median nervure dark brown. A pale transverse shade between the dark median area and the dark margin, the veins whitened.

This is now regarded as a separate species and not an aberration of cursoria, see Seitz Suppl. 3 p. 242.

ab. sagittata Stgr. Iris (1896) 1897: 9; p. 249.

Forewings with a lighter (whiter) costal stripe, the stigmata mostly lighter with a dark surround. The forewings with fewer transverse and longitudinal lines but all sorts of transitions occur.

ab. mülleri Hänel. Int. Ent. Z. 1920 13 p. 185.

On the whole resembling sagittata Stgr. but the inner and outer transverse lines of the forewing are completely absent.

ab. nigrovittata Hänel. Int. Ent. Z. 1920 13 p. 185.

Ground colour of the forewings yellowish-brown, the area between the inner and outer transverse lines is dark brown. The darkening reaches the inner margin but the costal area above the subcostal vein is yellowish.

ab. nigrescens Hänel. Int. Ent. Z. 1920 13 p. 185.

General colour of the forewings black brown with the exception of a fine pale yellow surround to the orbicular and reniform, and a pale yellow submarginal line.

ab. obscura Stgr. Cat. Ed. 2. 1871. p. 86.

Forewings almost totally red-brown.

ab. mixta Fabricius. Ent. Syst. 1794 3 pt. 2 p. 36 no. 91.

Forewings greyish-white with the transverse markings distinct..

ab. obsoleta Tutt. Brit. Noct. 1892 2 p. 41 & 42.

Neither the transverse lines nor longitudinal markings developed, the stigmata faintly perceptible.

ab. obsoleta-puncta Tutt. Brit. Noct. 1892 2 p. 42.

As the above obsoleta but with the lower part of the reniform represented by a black spot.

ab. coerulea Tutt. Brit. Noct. 1892 2 p. 40.

Ground colour slate grey, including costa.

ab. costa-coerulea Tutt. Brit. Noct. 1892 2 p. 40.

Ground colour slate-grey with the costa pale.

ab. pallida Tutt. Brit. Noct. 1892 2 p. 41.

Ground colour greyish-white, slightly ochreous, with longitudinal markings.

ab. ochrea Tutt. Brit. Noct. 1892 2. p. 41.

Ground colour yellow-ochreous with longitudinal markings.

ab. brunnea Tutt. Brit. Noct. 1892 2 p. 41.

Ground colour brown with a reddish tint with distinct transverse markings.

ab. distincta Tutt. Brit. Noct. 1892 2 p. 42.

Ground colour pale as in pallida Tutt but the space between the orbicular and reniform, a wedge-shaped spot beyond the orbicular, another spot outside the reniform, the claviform and a longitudinal marking under the base of the median nervure are deep blackish-brown.

ab.marginata Tut.. Brit.Noct.1892 2 p.43.

Whole of forewings as far as the subterminal line of a deep blackish fuscous, the outer area beyond the subterminal is ochreous.

ab.puncta Tutt. Brit.Noct.1892 2 p.41.

Unicolorous greyish-white with markings absent except a dark dot which is the lower part of the reniform.

ab.cruda van Wisselingh. Ent.Ber.(Amst.).1962.22.p.141.

Forewings practically without markings, except for the orbicular and reniform, and the two transverse lines. These lines are dark and contrast strongly with the ground colour.

ab.fusca Lempke. Tijdschr.Ent.1962.105.p.157; pl.1,f.5 & 6.

Ground colour of the forewings rather dark brownish without any red tint; markings normal.

Lempke says this is the principal form on the Dutch heaths, but also occurs to a lesser extent on the dunes along the North Sea coast of Holland.

Noct. 2.
p. I.

Euxoa Hbn.

nigricans L. aberrational forms etc.

ab. rubricans Esper. Eur. Schmett. 1788 4 p. 395 pl. 130 f. 2.
Forewings dark reddish-brown, the markings lighter.

ab. vilis Hubner. Samml. Eur. Schmett. 1809-13 fig. 511.
Dark reddish-brown, the stigmata and transverse lines whitish-yellow.
The figure does not look at all like nigricans.

ab. quadrata Tutt. Brit. Noct. 1892 2 p. 33.
Dark reddish-brown with a dark quadrate spot between the orbicular and reniform.

ab. ochrea Tutt. Brit. Noct. 1892 2 p. 33.
Dark reddish-brown with transverse strigae nearly obsolete but the stigmata
and transverse shades along the nervures ochreous.

ab. ruris Haworth. Lep. Brit. 1809 p. 221.
Pale reddish with the stigmata and transverse lines yellowish.
It would seem doubtful if this belongs to nigricans, Haworth refers to the
figure in Hubner Eur. Schmett Noct. fig. 416 which looks more like obelisca.

ab. fusco-variegata Tutt. Brit. Noct. 1892 2 p. 34.
Dark reddish-brown with dark quadrate spot between the orbicular and reniform
which are ochreous as are also the transverse shades along the nervures.

ab. obeliscata Haworth. Lep. Brit. 1809 p. 222.
Pale reddish with the space between the orbicular and reniform and also beyond
the orbicular, much darker than the ground tint.

ab. rufa Tutt. Brit. Noct. 1892 2 p. 33.
Pale reddish with the stigmata and strigae paler.

~~ab. striata Tutt. Brit. Noct. 1892 2 p. 33.
Pale reddish with the stigmata, transverse strigae and longitudinal dashes along
the nervures ochreous. See p. 2.~~

ab. rufo-variegata Tutt. Brit. Noct. 1892 2 p. 33.
Pale reddish with a darker patch between the stigmata which are bright ochreous
together with the longitudinal dashes along the nervures.

ab. pallida Tutt. Brit. Noct. 1892 2 p. 33.
Ground colour grey with a reddish tinge, the stigmata and strigae almost obsolete

ab. flavo-pallida Tutt. Brit. Noct. 1892 2 p. 33.
Grey with a reddish tinge, the stigmata and strigae yellow.

ab. dubia Haworth. Lep. Brit. 1809 p. 222.
Blackish fuscous with darker stigmata and strigae and conspicuous white line
on outer margin.

nigricans L. typical form.
Brownish black with the stigmata paler.

ab. marshallana Westwood. Humphrey & Westwood Brit. Moths 1843 p. 122 pl. 24 f. 15.
Blackish brown with yellow strigae and, to a lesser extent, stigmata.

ab. ursina Godart. Pap. de France 1824 271 pl. 71 f. 3.
Blackish brown with darker transverse lines and stigmata, the outer border of
reniform whitish. A subterminal line of whitish points.

ab. fuliginea Hubner. Samml. Eur. Schmett. 1809-13 pl. 131 f. 602.
Smoky black and almost unicolorous, the stigmata and subterminal line faintly
outlined.
Tutt credits Godart with this form incorrectly.

ab. fumida Warren. Seitz ¹⁹¹⁴ 1909 3 p. 31.
= fumosa Godart. Pap. de France. 1824 5 p. 264 pl. 70 f. 3-4. (nom. preoc. Fabr.)
Smoky brown with ochreous reniform and yellowish subterminal line.

ab. fumosa Fabricius. Ent. Syst. 1794 3 part 2 p. 115 no. 348.
Black, with a subterminal row of white points.
Similar apparently to ursina Godart but forewings much darker.

ab. carbona Hubner. Samml. Eur. Schmett. 1809-13 pl. 151 f. 700.
The figure shows the ground colour blackish with the transverse lines and
stigmata yellowish, especially the subterminal line.

I844 p. I93)

ab. rustica Eversmann. Bull. des Nat. de Mosc. 1842 3 p. 545. (Faun. Volgo-Uralensis
= ^{subrae Robson. Young Nat. 1888: 9: p. 121.}
Dark brown, the markings more or less obsolete.

ab. fumata Warren Seitz 1914 3 p. 31.
= fumosa Haworth. (nom. preoc. Fab.) Lep. Brit. 1809 p. 221.
Black with the upper stigmata pale edged.

ab. striata Tutt. Brit. Noct. 1892 2 p. 33.
= radiata Turner. Ent. Rec. 48. Suppl. Tutt's Brit. Noct. 1936 p. (40)
Pale reddish, the claviform and reniform distinctly ochreous. The elbowed and
subterminal lines consisting of ochreous dots, the space between them strongly
sprinkled with ochreous along the nervures giving a streaked appearance, the
striations extending to the outer margin.
Turner's radiata appears to be exactly the same -- The waved line and outer
marginal line emphasized by light straw dots, each joined to its corresponding
dot by a light horizontal connection along the vein.

ab. subradiata Turner. Ent. Rec. 48. Suppl. Tutt's Brit. Noct. 1936 p. (40)
With medium brown nervures, the stigmata outlined with blackish brown, the
orbicular with brown dot in centre. The rest of the wing is of a dirty cream
with a slight brown suffusion near the inner margin base and a band across
the wing. It has a curious radiated appearance.
This appears to be an extreme form of striata Tutt.

ab. junctoides Lempke. Tijds. Ent. 1962. 105. p. 155.
The orbicular and reniform touch each other.
Lempke usually gives the name "juncta" to this form but states that since
Foltin has used the name for a different form he has had to use "junctoides".
According to Lempke Foltin's juncta is the form in which the stigmata are
confluent, forming one stigma, with no boundary at point of juncture. Since it is
not possible to be certain without seeing the type, the description merely
saying "the orbicular and reniform connected", Lempke's determination is accepted
See Tijdsch. Ent. 105. p. 155.

ab. juncta Foltin. Zts. Ost. Ent. Ver. 1938. 23. p. 125.
The description merely says "the orbicular and reniform connected", the German
word being "verbunden".
This may mean several different ways of connection. Lempke states that in his
view the form is the one in which the stigmata are confluent, with no boundary
line at point of juncture.

ab. semiconfluens Lucas. Ent. Ber. (Amsterdam). 1959. 19. p. 204.
The orbicular and reniform connected by a double line.

Noct. 3.

Euxoa Hbn.

p. I.

tritici L. aberrational forms etc.

ab. eruta Hubner. Samml. Eur. Schm. 1814-17 pl. 136 f. 623.

Greyish-brown, the markings more or less distinct in a lighter grey, costa not pale. Corti in Seitz Suppl. says this is now a separate species.

ab. coerulea Tutt. Brit. Noct. 1892 2 p. 45.

Clear slate or dove-colour without pale costa, the markings more or less distinct

ab. obsoleta Tutt. Brit. Noct. 1892 2 p. 45.

Pale slaty-grey, without pale costa, the markings obsolete.

ab. puncta-obsoleta Tutt. Brit. Noct. 1892 2 p. 45.

Pale slaty-grey, without pale costa, the markings obsolete except for the lower half of the reniform which is blackish.

ab. pallida Tutt. Brit. Noct. 1892 2 p. 46.

Greyish-white, without pale costa, the markings more or less distinct.

ab. fusca Tutt. Brit. Noct. 1892 2 p. 46.

Pale greyish-fuscous, without pale costa, the markings distinct.

ab. sordida Haworth. Lep. Brit. 1803 p. 222.

Dark greyish-brown, without pale costa, the markings distinct.

ab. pupillatus Haworth. Lep. Brit. 1809 p. 118.

Dark greyish-brown, without pale costa, the stigmata subocellate, the median area pale.

ab. ochracea Tutt. Brit. Noct. 1892 2 p. 46.

Pale yellowish-ochreous, without pale costa, the markings more or less distinct.

ab. valligera Haworth. Lep. Brit. 1809 p. 222.

Reddish-brown, without pale costa, the markings more or less distinct.

ab. cuneigera Stephens. Ill. Haust. 1829 2 p. 123.

Reddish brown or dusky ash, the transverse lines obsolescent but a series of acute wedge-shaped fuscous spots towards the margin.

This was obviously named to cover all forms with large cuneate spots in the margin since Stephens himself says the colour and markings vary considerably.

ab. hortorum Stephens. Ill. Haust. 1829 2 p. 122.

Deep dusky ash, without pale costa, the markings distinct and showing a row of elongated dusky streaks on the margin as in the preceding cuneigera. The hindwings are fuscous, the body deep fuscous. The darker hindwings and brown abdomen distinguish it from tritici typical form.

ab. venosa Stephens. Ill. Haust. 1829 2 p. 123.

Grey brown without pale costa, the markings distinct but without marginal wedge-shaped streaks. The nervures of the wing are pale griseous-ash.

It would seem by the name that this form was separated because of the pale veins and not on colour or markings.

ab. nigra Tutt. Brit. Noct. 1892 2 p. 47.

Black, without pale costa, the markings more or less distinct.

ab. costa-nigra Tutt. Brit. Noct. ¹⁸⁹² 1829 2 p. 47.

Black, with a pale costal streak well developed.

The name does not make sense.

ab. nigro-fusca Esper. Eur. Schm. 1788 4 pt. 2 p. 383 pl. 127 f. 6.

Reddish brown with pale ochreous costa, the longitudinal markings blackish and distinct. The transverse lines do not show in the figure, the costa is also shown as unicolorous with the ground, the figure is bad.

tritici L. typical form.

Dark greyish-brown with lighter costa.

subgothica Haworth. is an American species. Tutt treated it as a form of tritici which has been named ab. pseudogothica by Parkinson Curtis, see below.

ab. pseudogothica Parkinson Curtis. Ent. Rec. 1927 39 p. 141. (nom. nov. pro subgotha = subgothica Tutt. (nec. Haworth.) Brit. Noct. 1892 2 p. 46. Tutt.

Pale greyish-fuscous, with pale costa and a dark space between the stigmata and no cuneiform spots.

ab. sagittifera^{genu} Stephens. Ill. Haust. 1892 2 p. 119.
Greyish-white with pale costa, a long black arrow-shaped line at base and the space between the stigmata deep fuscous, also a black streak extending from the claviform. On the margin an angulated pale line with a few dusky wedge-shaped lines.

ab. obsoleta-pallida Tutt. Brit. Noct. 1892 2 p. 46.
Greyish-white, with pale costa and indistinct markings.

ab. costa-coerulea Tutt. Brit. Noct. 1892 2 p. 45.
Clear slate or dove-colour, with pale costa, the transverse and longitudinal markings more or less distinct.

ab. minor-coerulea Tutt. Brit. Noct. 1892 2 p. 45.
Clear slate or dove-colour, with pale costa, the markings more or less distinct but very small in size.

ab. costa-obsoleta Tutt. Brit. Noct. 1892 2 p. 45.
pale slaty-grey, with pale costa and transverse markings indistinct, the longitudinal ones slightly developed

ab. costa-fusca Tutt. Brit. Noct. 1892 2 p. 46.
Pale greyish-fuscous, with pale costa and distinct transverse markings.

ab. albilinea Haworth. Lep. Brit. 1809 p. 223.
= lineolata Haworth. Lep. Brit. 1809 p. 223.
Reddish-brown with white costa and distinct markings, a row of cuneiform spots on margin.
lineolata is so similar as to be not worth separating, the cuneiform marginal spots are more developed.

ab. virgata Tutt. Brit. Noct. 1892 2 p. 58.
= fasciata Richardson. Ent. Rec. 1952 64 p. 272. pl. XI fig. 23.
A distinct, dark, central band between the complete basal line and the elbowed line, deep reddish-brown on a reddish-ochreous ground. Tutt refers to the real basal line as the incomplete one, the "complete" one is actually the antemedian. Richardson's fasciata is described as having the median areas of the forewing darkened to form a pronounced band.

ab. juncta Lempke. Tijdschr. Ent. 1939 82 p. 217. (description p. 197)
The stigmata, orbicular and reniform, distinctly joined.

ab. semiconfluens Lempke. Tijdschr. Ent. 1939 82 p. 217 (description p. 197)
The stigmata joined together by a double line.

ab. confluens Lempke. Tijdschr. Ent. 1939 82 p. 217 (description p. 197)
The orbicular and reniform joined, forming one single spot, their boundary absent at the point of juncture.

ab. ocellina Stephens. (nec. Schiff.) Ill. Haust. 1829 2 p. 122.
Dusky or rufescent with pale costal streak, abbreviated. The stigmata ocellated, slightly rufescent in the middle with a narrow pale-ashy margin.

ab. obeliscata Haworth. Lep. Brit. 1809 p. 222.
See nigricans for this form. Some authors place it under tritici.

obeliscata Wagner. Mitt. Munch. Ent. Ges. 1929 19 p. 74.
Almost certainly a subspecies. From Turkestan, 12 June to 20 July, so apparently taken in series, therefore not an aberration.

ab.vinosa Schawerda. Zts.Ost.Ent.Ver.1930.15.p.9.

The normal light brown ground colour covered over with light wine-red, the black markings normal but weaker.

ab.fumosoides Culot.[Oberth.in litt.] Noct.& Geom.(1909-13)1911.1(1).p.78; pl.12,
f.15.

The figure shows the ground colour unicolorous yellow-brown, the markings distinct, and without any trace of a paler costa.

ab.rhabdota Edelsten. South's Moths Brit.Isles 1961.New Ed., Ser.1.pl.41,f.7 & 8;
p.128.

Usually larger than the typical form, and the ground colour more ochreous.

Since the plate and its legend are bound into the book before the page bearing the description, the plate is cited first in the reference.

ab.bicolor Lempke. Tijdschr.Ent.1962.105.p.153.

The basal and submarginal areas brown, the central and marginal areas unicolorous greyish, the subterminal line sharp.

ab.unicolor Lempke. Tijdschr.Ent.1962.105.p.153; pl.1,f.10.

On the forewings all the markings are absent, with the exception of the orbicular and reniform, which are still feebly visible.

ab.xanthostaxis Lempke. Tijdschr.Ent.1962.105.p.153.

The orbicular and reniform pale, without dark centre, sharply contrasting with the unicolorous forewings.

ab.protensa Lempke. Tijdschr.Ent.1962.105.p.154.

The orbicular lengthened towards the base and touching the antemedian line.

ab.lyra Hoffmeyer & Knudsen. Danske Storsommerfugle.1938.p.98 & 309,fig.

ab.brevipennis Hoffmeyer. Flora og Fauna 1958.64.p.12.

We have not seen the original; presumably this is the usual "brevipennis"-form, with the wings shortened and rounded.

Noct. 4.
p. I.

Euxoa Hbn.

obelisca Schiff. aberrational forms etc.

obelisca Schiff. the typical form is dull reddish brown with ochreous costa.

race stephensii Heydemann. Int. Ent. Z. 1933 27 p. 246.

Ground colour of the forewings blackish-grey, tinged with yellow, the costa lighter as far as the reniform.

British specimens would appear to belong to this race.

ab. villiersii Guenee. Ann. Soc. Ent. France 1837 6 p. 173. pl. 8 f. 2.

= villiersii Hbn.-Geyer. Samml. Eur. Schmett. pl. 183 f. 869-870.

This form does not belong to obelisca but to E. temera Hbn., according to Corti in Seitz Suppl. 3 p. 28.

ab. ruris Hubner. Samml. Eur. Schmett. pl. 89 f. 416.

= ruris Guenee. Noctuelles 5 p. 292.

Not an obelisca form but belongs to E. temera group. See Seitz 3 Suppl. p. 28.

It would seem almost impossible to place these old figures correctly in such a variable group and therefore better not to use the names.

hastifera Donzel. Trans. Ent. Soc. France 1847 p. 525

This is now considered a separate species together with - -

ab. carbonis Warren. Seitz 1914 3 p. 27. which is a form of hastifera and not of obelisca as stated by its author Warren.

ab. plectoides Guenee. Noctuelles 5 p. 292

Shining violet-brown, resembling plecta. uniform, without any transverse lines and little trace of the subterminal.

Possibly not obelisca.

ab. ? pratincola Borkhausen. Naturegesch. p. 553. no. 225.

Treated by most authors as a synonym of the type form, not worthy of separation.

ab. grisea Tutt. Brit. Noct. 1892 2 p. 31.

Grey ground colour shading imperceptibly into the still paler costa which therefore does not stand out conspicuously as in dark forms.

ab. juncta Lempke. Tijdschr. Ent. 1939 82 p. 214 (description p. 197)

The orbicular and reniform join but remain distinct.

ab. unicolor Lempke. Tijdschr. Ent. 1939 82 p. 214.

Forewings unicolorous. All the markings, also the black filling-up of the middle cell, are absent, only the orbicular and reniform are weakly ringed with black and therefore just visible.

ab. badia Gillmer. Int. Ent. Z. 1910 4 p. 145.

Unicolorous dark red-brown, the costa of the same shade, traces of transverse lines.

ab. nigrescens Lempke. Tijdschr. Ent. 1962. 105. p. 151.

The ground colour of the forewings blackish, without any trace of a red tint.

ab. protensa Lempke. Tijdschr. Ent. 1962. 105. p. 151.

The orbicular lengthened towards the base, and touching the antenarian line.

ab. brevipennis Lempke. Tijdschr. Ent. 1962. 105. p. 151.

Fore- and hindwings strongly shortened.

Noct. 5.
p. I.

Agrotis O.

segetum Schiff. aberrational forms etc.

ab. *catenatus* Haworth. Lep. Brit. 1803 p. II4.
Pale grey with distinct transverse lines and stigmata.

ab. *monileus* Haworth. Lep. Brit. 1803 p. II5.
Pale grey with more or less indistinct suffused markings, irrorated and clouded with black.

segetum Schiff. type form.
Varying shades of dark brown, the markings more or less distinct.

ab. *segetis* Hubner. Samml. Eur. Schm. 1800-03 pl. 31 f. 146.
The figure shows the upper half of the forewings dark brown, the lower half pale grey, the transverse lines very distinct, also a diagonal median shade.

ab. *fuscosa* Esper. Schm. Eur. 1786 3 p. 324 pl. 64 f. 4.
Rather pale greyish-brown, the markings more or less distinct.

ab. *caliginosa* Esper. Schm. Eur. 1786 3 p. 323 pl. 64 f. 3.
Red-brown, the lines somewhat indistinct, stigmata distinct. (See also ab. *delineata* Lempke, on p. 3 of these notes.)

ab. *pectinatus* Haworth. Lep. Brit. 1803 p. II5.
Pale grey, the claviform small, the transverse line beyond the reniform double instead of single.

ab. *spinulus* Haworth. Lep. Brit. 1803 p. II5.
Grey, with the postmedian line replaced by a row of pale spots.

ab. *connexus* Haworth. Lep. Brit. 1803 p. II6.
Grey, with the reniform and orbicular joined by a double line.

ab. *corticcus* Haworth. Lep. Brit. 1803 p. II6.
Grey, with the orbicular tridentate instead of round and the lines partially obliterated.

ab. *venosus* Haworth. Lep. Brit. 1803 p. II6.
Forewings with the veins broadly fuscous.

ab. *subatratus* Haworth. Lep. Brit. 1803 p. II6.
Blackish-grey, with a row of pale dots parallel to the margin.

ab. *nigricornis* Villers. Linn. Ent. 1789 2 p. 175.
= *nigricornutus* Haworth. Lep. Brit. 1803 p. II7.
The antennae black as well as the forewings, the markings mostly hidden by the black ground.

ab. *anthracitica* Alpheraky. Horr. Soc. Ent. Ross. 1908 38 p. 590.
Forewings completely unicolorous black with the exception of a luteous marginal line. This must be very similar to *subatratus* Haw. but much blacker.

ab. *paradoxa* Cockayne. Ent. Rec. 1952 64 p. 189. pl. 8 f. 1.
The median area between the transverse lines is pale brownish, the basal area and marginal area blackish.

ab. *bilineata* Cockayne. Ent. Rec. 1952 64 p. 189.
The ground colour pale, the ante and postmedian lines well marked, the reniform and faintly marked orbicular are present but all other markings, except two fine lines at the extreme base, are absent.

ab. *seminigra* Cockayne. Ent. Rec. 1952 64 p. 189 pl. 8 f. 2.
Forewings with a heavy suffusion of black from the base to the outer border of the reniform and the costa as far as the subterminal line is blackish, the rest of the wing is pale and normal.

ab. *mediocuneata* Cockayne. Ent. Rec. 1952 64 p. 189 pl. 8 f. 3.
Pale ground, the reniform and orbicular pale filled in the centre with blackish-brown. a streak of blackish-brown running from the antemedian to the orbicular, broadening and filling the space between the stigmata and continuing as a still broader stripe to the postmedian forming a roughly pear-shaped dark area in which the stigmata stand out conspicuously, a narrow blackish band along the termen, the transverse lines indistinct. The area outside the postmedian is almost clear, the rest of the wing from base to the postmedian faintly irrorated.

ab. *semiconfluens* Cockayne. Ent. Rec. 1952.64.p.189.
 = *semiconfluens* Lucas. Ent. Ber. (Amst.). 1959.19.p.204.
 The reniform and orbicular are united by a narrow isthmus.

ab. *marginata* Cockayne. Ent. Rec. 1952 64 p.190 pl.8 f.4.
 Forewings blackish as far as the subterminal line, outwards from this it is pale, with a row of marginal interneural black dots and a faint shading just outside the subterminal line.

ab. *pallida* Staudinger. Stett. Ent. Z. 1881 42 p.423.
 Wings pale yellowish grey to ash grey, the markings more or less absent.

ab. *pallida-obsolata* Dannehl. Ent. Z. 1925 39 p.135.
 Ground colour smooth greyish-yellow, the stigmata and outer line completely absent, but the marginal spots strongly shaded, often forming an irregular broad submarginal band.

ab. *unicolor* Pillich. Rov. Lapok. 1909 16 p.187.
 Forewings unicolorous, without marking.

ab. *albiptera* Turati. Atti. Soc. Ital. Sc. Nat. 1921 60 p.225. fig.
 Male with the hindwings pure silky white, uninterrupted by the usual dark shading and darkened veins.
 Turati says the genitalia is different from *segetum* but hesitates to make a separate species on the strength of one specimen.

ab. *pseudocos* Tutati. Atti. Soc. Ital. Sc. Nat. 1924 63 p.61 pl.3 f.3.
 Female, very much resembles *A. sicula* Oberth., the double transverse lines are well indicated on a uniform brownish-grey ground with no speckling which is slightly reminiscent of *A. cos*.

ab. *minorata* Turati. Atti. Soc. Ital. Sc. Nat. 1924 63 p.61 pl.3 f.1-2.
 Small form.
 Turati's specimens were taken in May-June, he describes it as a small summer form.

ab. *infuscofasciata* Chalmers-Hunt. Entom. 1961.94.p.281.
 Ground colour pale brown; subterminal paler with darker shading proximally; marginal area darker than ground, nervures pale. Antemedian bordered distally by black line from costa to inner margin; postmedian bordered by similar black line from reniform to inner margin. Orbicular and reniform dark centred with intervening space partly filled in with dark scales. Interneural spaces from antemedian to orbicular and from reniform to postmedian filled with black, the space between 2 and 3 also filled with black. Claviform same colour as ground; the proximal and anterior part of the space between 1 and 2 filled with black and the rest of the space speckled with black.
 The specimen is figured in Proc. S. Lond. Ent. Nat. Hist. Soc. 1938-39 pl.2 fig.3.

ab. *juncta* Lucas. Ent. Ber. (Amst.). 1959.19.p.204.
 The orbicular and reniform touching each other.
 Lucas gives reference to the figure of the "juncta"-type of variation by Lempke at Tijdschr. Ent. 82.p.196.

ab. *fuscolimbata* Lempke. Tijdschr. Ent. 1962.105.p.163.
 The marginal area of the forewings, (between the submarginal line and the termen) is blackish, contrasting with the pale ground colour of the wings.

ab. *protensa* Lempke. Tijdschr. Ent. 1962.105.p.163.
 The orbicular lengthened towards the base and touching the antemedian line.

ab. *nictitans* Lempke. Tijdschr. Ent. 1962.105.p.164.
 Forewings with the ground colour unicolorously dark, the transverse lines normal, but the orbicular and reniform with a pale edge, and therefore very striking.

ab. centrifasciata Lempke. Tijdschr. Ent. 1962. 105. p. 164; pl. 1, f. 7.
Forewings with a thick central shadow-line.

ab. delineata Lempke. Tijdschr. Ent. 1962. 105. p. 164.

Forewings with the stigmata well developed, but the transverse lines completely absent or only quite weakly visible. Particularly striking in specimens with a light ground colour.

Presumably more extreme than ab. caliginosa Esper, p. 1 of these notes. Lempke has made an error in translating his original Dutch description into English, using "obsolete" where the original meaning is "obsolescent".

Noct. 6.
p. I.

Agrotis O.

^{Hufn.}
vestigialis ~~Retz.~~ aberrational forms etc.

^{Hufn.}
vestigialis ~~Retz.~~ type form - -
Light grey or whitish brown, markings on the forewings distinct.

ab. signata Boisduval. Icon. Hist. Lep. 1840 pl. 75.
Light grey or whitish brown, the markings indistinct.

ab. olivacea Hartig. Ent. Rundsch. 1924 41 p. 45.
Olive ground colour. Whitish only present in the form of a whisp (streak) above the claviform. A broad olive-coloured patch runs out to the inner and middle transverse lines, the marginal area, costa and reniform darkened with olive, the ring spot more whitish.

ab. sagittiferus Haworth. Lep. Brit. 1803 p. 118.
Greyish-fuscous, the markings distinct.
The most usual form in England, according to Lempke but Haworth says rare, a single capture in Norfolk.

ab. trigonalis Esper. Schmett. Eur. 1786 3 p. 382 pl. 75 f. 6.
The figure shows the three stigmata well outlined on a grey ground, little different from the typical form.
Tutt says greyish-fuscous with more or less obsolete markings and Lempke has apparently copied him.

ab. velligera Borkhausen. Naturgesch. Eur. Schmett. 1792 4 p. 551.
Dark brown, the markings distinct.

ab. brunnea-obsolata Tutt. Brit. Noct. 1892 2 p. 18.
Brownish or reddish-brown, with more or less obsolete markings.

ab. nigra-obsolata Tutt. Brit. Noct. 1892 2 p. 18.
Blackish fuscous with more or less obsolete markings.

ab. obsolata Tutt. Brit. Noct. 1892 2 p. 19.
Tutt has already described this form under brunnea-obsolata and nigra-obsolata on the previous page. He says "The markings more or less obscured owing to the duskiness or increased depth of the ground colour."

ab. nigra Tutt. Brit. Noct. 1892 2 p. 18.
Blackish-fuscous, the markings even darker.

ab. lineolata Tutt. Brit. Noct. 1892 2 p. 20.
The wedge-shaped or cuneiform dashes extend outwards to the margin of the wings

ab. basidistincta Turner. Ent. Rec. 1932 44 p. 130.
The basal oval on the forewings almost pink.

ab. juncta Lempke. Tijdschr. Ent. 1939 82 p. 225 (described p. 197)
The orbicular and reniform join but remain distinct.

ab. confluens Lempke. Tijdschr. Ent. 1939 82 p. 225 (described p. 197)
The orbicular and reniform joined, forming a single spot, their boundary absent at the point of juncture.

ab. pseudochretieni Heydemann. Int. Ent. Z. 1929 22 p. 430 pl. f. 10-12.
The "ring spot" (orbicular) completely absent as in A. chretieni Dum.

ab. violascens Heydemann. Int. Ent. Z. 1929 22 p. 430 pl. f. 9.
The marginal and inner marginal and particularly along the costal areas of the forewing shaded beautiful violet-rose on the pale brown ground.

ab. albidior Petersen. Lep. Faun. Estland 1902 I p. 166.
Forewings whitish.

ab. clavis Esper. Schmett. Eur. 1782 3 p. 319 pl. 63 f. 5.
Not worthy of separation, the ground colour appears to be ochreous-brown, the markings more or less normal.

ab. *extersa* Slastshevsky. Horae Soc. Ent. Ross. (1911-13) 1911.40. (1). p.71.
Forewings almost unicolorous brownish grey, beyond the outer transverse line somewhat paler in the middle. The two transverse lines very indistinct, the subterminal line completely washed-out, and the cuneate spots only visible due to a slight darkening. The whole of cell 1b, between the two transverse lines very weak, and the position of the orbicular rather more distinctly darkened. There is no visible trace of the stigmata themselves.

ab. *pseudovalligera* Turner. (nom. nov. pro *valligera* Hübn. nec Borkh.)
Ent. Rec. 1936. 48. Suppl. p. (29).

= *valligera* Hübner. (nec Borkhausen) Samml. Eur. Schmett. 1802. pl. 32, f. 150.
Brownish and reddish-grey forms with distinct markings, and with the basal half of the forewings brown.

ab. *pallida* Spuler. Schmett. Eur. (1901-08) 1905. 1. p. 164.

Paler, yellowish-coloured forewings and whiter hindwings.

Stated by the author to be a race, but Corti (Seitz Suppl. p. 48) makes it an aberration; it probably occurs as both.

ab. *indistincta* Cockayne. Ent. Rec. 1952. 64. p. 190.

Forewings very pale and the usual dark markings are replaced by pale brownish-grey; the body similar.

ab. *virgata* Cockayne. Ent. Rec. 1952. 64. p. 190; pl. 8, f. 5.

The space between the ante- and postmedian lines filled-in with blackish-brown to form a median band, in which the stigmata stand out conspicuously; there is no white along the median nervure.

ab. *nigricosta* Lempke. Tijdschr. Ent. 1962. 105. p. 161.

Forewings with a broad black costa, but the rest of the ground colour not darkened.

ab. *semiconfluens* Cockayne. Ent. Rec. 1952. 64. p. 190.

= *semiconfluens* Lucas. Ent. Ber. (Amst.). 1959. 19. p. 204.

A narrow union between the orbicular and reniform.

ab. *junctoides* Lempke. Tijdschr. Ent. 1962. 105. p. 161.

The reniform lengthened towards the base, and touching the claviform. In transitional examples the reniform is noticeably lengthened, but it does not reach the claviform.

ab. *postfasciata* Hanson. Ent. Tidskr. 1962. 83. p. 127, fig. 2.

Differs from other forms especially in the hindwings having a distinct blackish central line and a broad, distally dentated submarginal line.

The forewings are also described, as they are somewhat aberrant, but since the name implies that this is principally a hindwing form, it is treated as such in these notes. See description for forewing characters.

ab. *angustipennis* Bart.

Described at Seitz 3 Suppl., p. 48 as having somewhat narrower wings.

Noct. 7.
p. 1.

Agrotis Ochs.

clavis Hufn.
= corticea Schiff.
= clavigerus Haw. aberrational forms, etc.

clavis Hufn. typical form -- Light grey without dark dusting, transverse lines more or less distinct, the stigmata distinct.

ab. irrorata-pallida Tutt. Brit. Noct. 1892. 2. p. 61.

Light grey, but much irrorated with black scales, especially along the costa, the transverse lines and also the stigmata distinct.

ab. virgata-pallida Tutt. Brit. Noct. 1892. 2. p. 61.

= paradoxa Lempke. Tijdschr. Ent. 1962. 105. p. 166; pl. 1, f. 8.

Basal and outer areas black, central area containing the stigmata, pale whitish-grey. Lempke was apparently unaware of Tutt's prior name for this rather rare form.

ab. sicerii Freyer. Neuere Beitr. 1852. 6. p. 101; pl. 544, f. 2.

= obscura Freyer. Neuere Beitr. 1858. 7. p. 51; pl. 628, f. 1-2.

= [nigra-virgata Tutt. Brit. Noct. 1892. 2. p. 63-4.]

The area between the ante- and postmedian lines filled with blackish-brown, forming a dark median band.

The two forms vary only in their ground colour, sicerii is pale brown running into greyish, whilst obscura is dark brown. nigra-virgata, mentioned casually by Tutt in Brit. Noct. 1892 2 p. 63 but not fully described, is sicerii Freyer.

ab. subfuscus Haworth. Lep. Brit. 1803 p. II4.

The greyish-fuscous ground thickly covered with dark scaling almost completely concealing the transverse lines and stigmata.

ab. irrorata-fusca Tutt. Brit. Noct. 1892 2 p. 61.

Fuscous or smoky grey ground, much irrorated with black scales, especially the costal area.

ab. obsoleta-fusca Tutt. Brit. Noct. 1892 2 p. 61.

Fuscous or smoky-grey, the transverse lines more or less obsolete, sometimes entirely so, the stigmata distinct. The wings not irrorated with black scales.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 61.

Reddish-brown, slightly irrorated with black scales, the transverse lines and stigmata distinct.

ab. suffusa-brunnea Tutt. Brit. Noct. 1892. 2. p. 61.

Reddish-brown, much suffused with black scales, the transverse lines and stigmata very indistinct.

ab. brunnea-virgata Tutt. Brit. Noct. 1892. 2. p. 61.

Ground colour black, the extreme outer margin pale brown or bright ochreous.

ab. venosa Tutt. Brit. Noct. 1892. 2. p. 61.

Ground colour black, with paler veins.

ab. transversa Tutt. Brit. Noct. 1892. 2. p. 61.

Ground colour black, with pale transverse lines.

ab. nigra Tutt. Brit. Noct. 1892. 2. p. 61.

Entirely black, with still more intense stigmata.

ab. obscura Schawerda. Zts. Ost. Ent. Ver. 1930. 15 p. 9.

Black-brown with the lighter transverse lines completely absent.

ab. pallida Schawerda. Zts. Ost. Ent. Ver. 1930. 15 p. 9.

Completely pale brown but not yellow, the markings normal.

ab. orbiculella Strand. Arch. Naturg. 1915. 81. A. 12. p. 143.

The ring-spot on the forewing is large, square and open above.

ab. neocomensis Rougemont. Bull. Soc. Neuchatel. Sci. Nat. 1903. 29. p. 95 pl. I f. 7.

No pattern except the three spots, the claviform almost invisible, the reniform well-marked.

ab. obsoleta Meade-Waldo. Entom. 1915. 48. p. 225 fig.

The claviform and orbicular stigmata almost obsolete.

The figure shows the transverse lines present.

ab. *costa-irrorata* Tutt. Brit. Noct. 1892.2.p.62.

Light grey, much irrorated with black scales, the transverse lines and stigmata distinct, the costa intensely black.

ab. *strigosa* Strand. Arch. Naturv. Christian 1903.25.no.9.p.10.

The two transverse lines of the forewings sharply contrasting or standing out.

ab. *sordida* Hubner. Samml. Eur. Schmett. 1800-03.pl.32 f.154.

The figure shows the ground colour greyish-brown, the markings distinct, the outer margin, from the subterminal, of a darker shade.

This may or may not belong to this species, Tutt includes it in his Brit. Noct.

ab. *semiconfluens* Lempke. Tijdschr. Ent. 1939 82.p.223. (description p.197.)

The stigmata united by a double line.

ab. *unimaculata* Maslowscy. Polski Pismo Ent. 1923.2.p.130; pl.2, f.11.

Forewings showing only the reniform stigma, speckling absent.

Description from Seitz, original not seen.

ab. *juncta* van Wisselingh. Ent. Ber. (Amst.). 1962.22.p.141.

The orbicular and reniform touch each other.

ab. *protensa* Lempke. Tijdschr. Ent. 1962.105.p.166.

The orbicular lengthened towards the base and touching the antemedian line.

Noct. 8.
p. I.

Agrotis Ochs.

denticulatus Haworth. 1803. aberrational forms etc.
= cinerea Schiff. 1775 (homonym)
= cinerea Hbn. 1800.

denticulatus Haw. Typical form male, forewings grey with two transverse lines denticulate black lines, hindwing whitish, the front of the thorax (collar) black.

ab. obscura Hubner. Samml. Eur. Schmett. 1800-03 pl. 33 f. 157 and 490.

= fusca Boisduval. Icon. Hist. Lep. 1834. 2. pl. 78 f. 4.

Both of these figures show females with the forewings black-brown or black-grey.

ab. obsoleta Lempke. Tijdschr. Ent. 1939. 82. p. 225.

The markings of the forewings very weak or almost completely absent.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 76.

Forewings ashy grey, the transverse lines black but less strongly marked than in typical examples, orbicular absent or very small, reniform distinct; median shade almost entirely obsolete, subterminal shade pale lined on either side with a slightly darker shade. Hindwings slightly paler than typical.

ab. virgata Tutt. Brit. Noct. 1892. 2. p. 76.

The broad strongly marked median shade is replaced by a clear, but much narrower red median shade, forming a central band between the stigmata, thus intermediate between the type and ab. pallida, there is also a dark reddish shade bordering the inner side of the subterminal, tending to develop into cuneiform spots.

ab. variegata Schawerda. Int. Ent. Z. 1934. 28. p. 416 (see fig. Seitz 3 Suppl. pl. 7 A.)

Forewings pure grey, with prominent heavy transverse lines and a broad dark middle shadow. A similar example is figured in Seitz Suppl. as above.

subsp. ? tephрина Staudinger. Cat. 1901. Ed. 3. p. 148.

= eximia Culot. Noctuelles 1909-13. I. p. 69 pl. II f. 4.

Staudinger described examples from the south of England as a race, but from our series it is not constant. A series from Lewes match his description but other S. England localities produce a mixture of forms including tephрина. Culot says eximia is a pale lilac grey form of tephрина and may be different since Staudinger does not mention colour in his description whereas eximia is strikingly lilac tinged, they are probably the same form.

tephрина is smaller, narrower winged, markings distinct, hindwings in the ♂ whitish

ab. (subsp. ?) aragonensis Schawerda. Int. Ent. Z. 1934. 28. p. 417 pl. - f. II.

A small narrow winged male, with forewings very dark but more grey-brown than brown, the markings still just visible.

Schawerda had only one specimen and is not certain as to whether or not it is an aberration. It does not seem likely that all males would be so dark so it is most probably an ab.

The forms livonica Teich. and alpigena Turati are doubtful races occurring on the Continent.

ab. zeleznyi Skala. Arb. Ent. Abt. Landesmus Brunn. 1936. no. 3. p. 42.

? albescens Zerny. Eos 1927. 3. p. 363.

Described under A. turatii Standfuss, which is said to be similar to, but specifically distinct from, the present species. Lempke, however, at Tijdschr. Ent. 1962. 105. p. 158, includes this form under denticulatus Haw., without stating his reasons. There seems to be no justification for this, but should it prove later to belong here, it would almost certainly fall as a synonym of ab. pallida Tutt.

ab.violescens van Wisselingh. Ent.Ber.(Amst.).1962.22.p.141.
The ground colour of the forewings purplish tinted, otherwise normal.

ab.brunnea Lempke. Tijdschr.Ent.1962.105.p.159.
The ground colour of the forewings brown. (see also ab.obscura Hubn., p.1.)

ab.nigrescens Lucas. Ent.Ber.(Amst.).1959.19.p.204. p.1.)
The ground colour blackish, the markings still darker. (see also ab.obscura Hubn.,

ab.unipuncta Lucas. Ent.Ber.(Amst.).1959.19.p.204.
All markings obscure except the reniform, which is well developed, and hence very prominent.

ab.cruda Lucas. Ent.Ber.(Amst.).1959.19.p.204.
The first and second transverse lines are very prominent.

ab.lineata Lucas. Ent.Ber.(Amst.).1959.19.p.204.
The orbicular and reniform connected by a single line.

ab.juncta van Wisselingh. Ent.Ber.(Amst.).1962.22.p.141.
The orbicular and reniform touch each other.

puta Hbn. typical form ♀ The figure is bad, forewings yellowish grey with prominent markings, the outer margins fulvous with few markings. Apparently found only in Italy.

subsp. insula Richardson. Ent. Gaz. 1958. 9. p. 129 pl. 9 f. 1-2.

The race from Scilly Islands. Male, forewing tiller buff varying by irrorate with snuff-brown and drab; median area usually very pale; proximal of antemedian fascia the anterior half of the wing is densely irrorate with fuscous; antemedian and postmedian fasciae variable in breadth and a degree of development, black and contrasting sharply with the pale ground colour. Hindwings white.

Female - Both wings heavily suffused with fuscous; orbicular area on forewing and distal half of fringes on hindwing alone remaining pale.

ab. radius Haworth. Lep. Brit. 1803 p. 119. = radiola Steph. Ill. Haust. 1829. 2. p. 119. = radiola Stephens. Ill. Haust. 1829. 2. p. 119 pl. 20 f. 1. ♂

Male - forewings pale fuscous or greyish, with quadrate basal mark, three stigmata the two anterior ones small and streak-like, the outer one kidney shaped. The costal margin here and there dotted with fuscous and paler tints, the outer margin dark in which there are pale sagitate spots. Hindwings whitish.

The male of radiola Stephens seems little different, also his radiola.

ab. lignosa Godart. Pap. France. 1821. 5. p. 241 pl. 67 f. 5. ♂ (f. 6 ♀ see golignosa) = renitens Hubner. Samml. Eur. Schmett. 1823-24. f. 715 ♂ (f. 717 ♀. see below)

Male - Little different from the preceding but slightly tinged with reddish along costa and outer margin. The female has been renamed golignosa by Berio. Female renitens Hbn. shows forewings deep brown except for a lightening around the reniform, the chief character, if it is to be relied upon, being the hindwings which are white with greyish borders. It would seem that the name renitens Hbn. would best be used for female form with whitish hindwings.

♀ ab. golignosa Berio Ann. Mus. Civ. Genova 1935. 59. p. 77 pl. 2 f. 16.
nom. nov. pro ♀ lignosa Godart.

According to Berio distinct from the almost black females, the colour being being more of the tint of "burnt Sienna". Since the name lignosa applies to the male form, Berio considered it necessary to give this unusual form a new name. It probably does not occur in Britain having been found only in southern regions of the Continent.

♂ ab. tutti Berio. Ann. Mus. Civ. Genova 1935. 59. p. 93 pl. 3 f. 21.

Forewings with a median shadow starting at the reniform. On the hindwings the white cilia are speckled with marginal dots between veins 2 & 7.

Berio says this is the form described by Tutt as radius Haworth but Tutt does not mention a middle shadow in radius but does so in lignosa, Berio apparently is also in error.

♀ ab. renitens Hubner. Samml. Eur. Schmett. 1823-24. pl. 154 f. 717. ♀

The female figured by Hubner has whitish hindwings much whiter than normal and since the male is probably the same as lignosa Godart, the name can be used for females with light coloured hindwings. Forewings are shown as very dark brown with a paler area around the reniform.

♂ ab. catalaunensis Milliere. Rev. Mag. Zool. 1873. 36. p. 4.

Ground colour whitish, smudged with purple, the base, costa and cellular space purplish-brown. Several elongated black spots, one on costa and one in the the centre of wing starting from the base and reaching as far as the reniform. A third black spot, elongated, ending at the fringe, crosses the reniform which is large, brown in centre and encircled with black. A series of sagitate black spots project internally. Two other small oblong spots superimposed, one white, the other brown, precede the reniform. Hindwings whitish-brown with brown nervures, a series of brown lunular spots at the edge of the fringe which is entirely white, a faint dark cellular spot.

Bred from two larvae in Spain. Possibly racial, the ground colour would appear to be exceptionally pale.

ab. nuda Dannehl. Mitt. Munch. Ent. Ges. 1929. 19. p. 106.

The ground colour yellowish-white-grey, completely without markings.

ab. amartia Schawerda Verh. zool.-bot.-Ges. Wien. 1911. 61. p. (82)

Forewings strikingly pale brown with a whitish subterminal line. The brown colouring is only slightly present in the reniform and at base of costa.

ab. subrubra Dannehl. Mitt. Munch. Ent. Ges. 1929. 19. p. 106.

Ground colour reddish-brown, markings similar to renitens Hbn. The transverse lines are absent, the hindwings pure white. Female approaches lignosa Godart but the reddish tone predominates.

ab. ? race? erythroxylea Treitschke. Schmett. Eur. 1826. 5. (3) p. 31.

According to Seitz Supplement not an aberration but a local race in N. Africa, etc. See page 6 of these notes.

ab. joannisi Dufrane. Mem. Soc. Ent. Belg. 1930. 23. p. 62.

Forewings pale yellow and slightly greenish, the base, especially on costa, lightly scaled blackish-brown. The normal lines are completely obliterated, the three stigmata of the same colour as the ground and lightly but distinctly outlined with blackish-brown; thus the orbicular and claviform are without centres but the reniform has a blackish-brown centre separated from the outer rim by a ring of ground colour. Nervures lightly traced in blackish-brown, sagitate blackish-brown spots followed by paler wedge-shaped streaks between the veins in the outer margin, a line of pale brown runs along the outer edge in the fringe. Hindwings very white. The aberration is therefore extreme in its paler features.

ab. marianii Berio. Boll. Soc. Ent. It. 1932. 64. p. 146.

Forewings, also thorax, uniform dark mahogany colour on which the lines are hardly visible at all; in the male only the black basal spot and a few black wedge-shaped spots on the distal margin remain visible; the black border of the orbicular is hardly visible. In the female the pattern is hardly more visible although it can always be discerned, it is not as a whole darker than the male. This must be a very rare form of the male.

ab. andreasi Turati. Atti. Soc. Sci. Nat. 1924. 63. p. 68.

Related to ab. catalaunensis but with whiter ground colour and the markings more distinct.

Possibly a race, described from N. Africa.

ab. silvestrii Turati. Atti. Soc. It. Sci. Nat. 1924. 63. p. 62. pl. 3 f. 15.

Forewings dark coppery-brown largely covered along costa by a blackish suffusion which does not reach apex but fills space between the stigmata, its termination obscure. Proximal transverse line almost obsolete, the distal one only small black traces on costa, an obscure median shade from reniform. Hindwings greyish dusty.

ab. obscura Tutt. Brit. Noct. 1892. 2. p. 73 & 75.

Male- forewings dull greyish fuscous as in some females, thus obscuring the markings. Hindwings not clear white as is generally the case in males but dull greyish-white.

ab. nigra Tutt. Brit. Noct. 1892. 2. p. 73 & 75.

Female - the extreme form of the female with the ground colour black, the markings intense black, no pale patches but the orbicular outlined in pale, in some specimens even this pale outline is not present. Hindwings dark grey with generally, but not always, the base paler.

ab. obscurina Berio. Ann. Mus. Civ. Genova 1935. 59. p. 93 .

Male- Wings dark grey as normally found in females, but differs from obscura Tutt in having white hindwings.

♂ *ab. agenjoi* Berio. Ann. Mus. Civ. Genova 1935. 59. p. 93 pl. 4 f. 3I underside.
Forewings wine-colour the markings dark but not black, orbicular with ochre ring scarcely lighter than ground colour. Hindwings white with median shadow from costa to near anal angle. Underside colouring similar to upperside, but a thick dark line crosses both wings starting at the costa in front of the reniform and then curved outwards. On the hindwing this line begins a little further inwards than it ends on the inner margin of the forewing and continues towards the anal angle, following the contours of the outer margin.

ab. transfixa Berio. Ann. Mus. Civ. Genova 1935. 59 p. 94.

Male - Forewings with light ground colour and diffused longitudinal lines on and between the veins. The chief character is a very conspicuous claviform of a dark brown which extends without interruption to the base of the wing. The dark basal spot is indistinct.

ab. debilis Berio. Ann. Mus. Civ. Genova 1935. 59 p. 94.

Male - Forewings with the ground colour a whitish, yellowish-pink ivory; basal spot grey; distal field suffused with red. A single, clearly marked postmedian on the veins which are thinly patterned in brown. Distinguished from *radius*, *renitens* etc. by a more delicate appearance, the apex of forewings more pointed, the longitudinal contrasting patterns absent. In some specimens there is a well pronounced median shadow starting from the costa and touching and merging with the reniform, also transitional forms so they are not separated.

ab. toisca Berio. Ann. Mus. Civ. Genova 1935. 59 p. 92 pl. 3 f. I7.

Male - Ground colour yellowish white straw, with claviform, basal field, reniform. The cell between the latter and the orbicular and two marks on the termen all patterned in black. Hindwings completely white, abdomen white. The form is chiefly defined by its light background and very dark markings, by the spot on vein I and the clear white hindwings.

Possibly occurs only in the N. African races. Holotype from Tripoli.

ab. unica Berio. Ann. Mus. Civ. Genova 1935. 59. p. 90 pl. 3 f. I9.

Male - Forewings etc. light reddish, basal and costal spots, fringes, cuneiform antemarginal spots, centres of reniform and orbicular and apex of forewings all burnt sienna, the ante and postmedian lines absent. Border of claviform and two cuneiform antemarginal spots, (those between veins 4 & 6) black. A continuous black border enclosing in one ring the reniform and orbicular which are confluent. Hindwings white with fine antemarginal line.

ab. juncta Berio. Ann. Mus. Civ. Genova 1935. 59. p. 90; pl. 3, f. 20. (Restricted Lempke: Tijdschr. Ent. 1962. 105. p. 175-6.)
= *confluens* Lucas. Ent. Ber. (Anst.). 1960. 20. p. 229.

Male - Forewings and costal cell of hindwings uniform brown. Basal, costal, cuneiform ante and postmedian, the ring of claviform and single ring comprising orbicular and claviform, all black. Hindwings white slightly speckled brown. Similar to the preceding form but with duller background so that there is less contrast between it and the black of the pattern. The orbicular and reniform are confluent as in the preceding. Restricted by Lempke to a markings-only form, at Tijdschr. Ent. 1962. 105, p. 175-6, where he names *ab. brunnescens*, which also see on p. 6 of these notes. Berio seems to have mentioned "claviform" instead of reniform when he says a single ring encloses them since the figure shows no such character, only the orbicular and reniform are so enclosed.

Lucas's *confluens* had "orbicular and reniform coalescent".

ab. perfusa Berio Ann. Mus. Civ. Genova 1935. 59. p. 90 pl. 3 f. 23.

Male - Forewings etc. brilliant cream; the markings black. The light surround of the orbicular merges with that of the reniform so that the two spots appear one. The figure shows little difference from the two preceding forms except for the ground colour.

ab. *cremea* Berio Ann. Mus. Civ. Genova 1935. 59. p. 91.

Male. Head, thorax, forewings and abdomen, uniformly cream. The following are lightly defined in black - the double sub-basal, antemedian, frame of claviform, lower edge of orbicular and reniform which is almost absent, square in shape, postmedian in the shape of dots on the veins. On the distal margin are two dark spots between veins I and 2, 5 & 7, the centre of reniform also dark, the orbicular has a cream ring. Hindwings white.

ab. *algerina* Berio. Ann. Mus. Civ. Genova 1935. 59. p. 91 pl. 3 f. 22.

Male - Median area of forewing ochre-red, basal and distal areas (from postmedian to the fringes) a deep, fiery yellow. Basal spot, reniform, centre of orbicular and costa entirely black. Sub-basal not distinguishable and antemedian uniform and rounded, claviform absent, postmedian indicated by dots on veins. In the dark yellow postmedian area the very small cuneiform markings show between veins I & 2 and 4 & 7. Hindwings clear white.

Type from Algeria in Rothschild Coll. Trig. Possibly confined to N. African race, but appears, from the figure, to be an aberration.

ab. *pheroa* Berio Ann. Mus. Civ. Genova 1935. 59. p. 92 pl. 3 f. 18.

Male - Forewings light reddish-ochre (similar to *subrubra*); transverse bands clearly marked, the claviform ringed with brown, orbicular not very conspicuous, its contours being of the same colour as the wing; black basal spot, and the reniform, with its costal field, are the only dark spots but these are not black but brown, scaled with Burnt Sienna. Hindwings slightly yellowish white.

ab. *umbra* Berio Ann. Mus. Civ. Genova 1935. 59. p. 95 pl. 4 f. 35.

Female - Ground colour burnt Sienna. On forewings the double antemedian is well defined in black and very angular; the postmedian also doubled; a distal spot between veins 5 & 7 and a median shadow clearly shown between the markings. Margin of orbicular, interior of ante and postmedian lines and the cuneiform spots on distal margin are light like the fringes which have a double line of brown. Hindwings brown with white fringes.

Originally described as *lignosa* ♀ by Berio, who states that he mistook the nature of *lignosa*.

ab. *tricolor* Berio Ann. Mus. Civ. Genova 1935. 59. p. 95

Female - Head, antennae, abdomen, thorax and hindwings milk white. Forewing divided into three fields, one black which extends to the antemedian which is double and rounded, one dark grey extending from the antemedian to the postmedian, the last reddish-black extending to the fringes. Claviform absent, orbicular circled white and preceded in the direction of the costa by two white streaks, reniform hidden by ground colour, cuneiform antemarginal spots ochreish and small. The nervules of the white hindwings are outlined in blackish.

ab. *monochroma* Berio Ann. Mus. Civ. Genova 1935. 59. p. 96 .

Female - Forewings mouse-grey, except the orbicular, the costal markings, the contour of the reniform and the marginal cuneiform spots which are light and the basal region which is black. Black also are the costal markings next to the light ones; veins outlined in black. The postmedian represented by a break in colour on each vein while the antemedian is distinct and double, the claviform absent. Hindwings dirty white in places, the distal area brown.

ab. *uniformis* Berio. Ann. Mus. Civ. Genova 1935. 59. p. 96 pl. 4 f. 33.

Female - Forewings uniform brownish-grey, the fringes white. Basal spot of forewing the antemedian (double and very angular), reniform and postmedian (double) are a darker brownish-grey (not black). The interiors of the ante and postmedian are a trifle lighter as are also the contours of orbicular and a costal mark. The cuneiform spots hardly perceptible and a little lighter than the ground colour. Hindwings with basal area light ochre.

ab. *paupera* Berio Ann. Mus. Civ. Genova 1935. 59. p. 96 pl. 4 f. 36.

Female - Forewings ochre-yellow suffused with reddish-brown, basal spots, ante and postmedian, contours of claviform, orbicular and reniform and veins reddish-brown. Pre-distal cuneiform spots very conspicuous uniting at their external ends to form an ochraceous zig-zag distal band extending from apex to tornus (continued)

ab. paupera Berio continued from previous page.

This zig-zag band is contained on the one side by the reddish-brown with which the wings are suffused and on the other, the distal side, by the black dots at the base of the fringes. Hindwings dark brown with ochre fringes separated from the wing by a light and a dark line.

ab. purolimbata Berio Ann. Mus. Civ. Genova 1935. 59. p. 97 .

Female - Forewings brown, the fringes light ochreish and completely lacking in pattern, either longitudinal or transverse, which gives the insect the appearance of possessing forewings bordered by a wide light band. Hindwings light at the base and slightly darkened on the margins. For the rest similar to renitens Hbn.?

ab. masculina Berio Ann. Mus. Civ. Genova 1935. 59. p. 97 .

Female - Surprisingly similar to the male of syricola Corti in its general light appearance, transverse markings and the robust appearance of the wings. The ante-marginal cuneiform spots are welded together at the tips, forming a white undulating line on the reddish distal field. The orbicular is noticeably close to the reniform at one end. In another specimen from the same locality, these last two characters are not present, thus agreeing entirely with the male of syricola Corti.

ab. transiens Berio Ann. Mus. Civ. Genova 1935. 59. p. 97 .

Female - Forewings dark ochre. The sub-basal, the double and distinctly rounded antemedian between vein I and the internal margin, the contour of the claviform, the double postmedian, the cuneiform markings between veins 4 & 6 and the marginal spots in front are brownish-black. The contour of the orbicular and the cuneiform distal markings are white, fringes light ochreish-yellow with a double band of brown. Hindwings brown, the base lighter.

ab. extrema Berio Ann. Mus. Civ. Genova 1935. 59. p. 98.

Female - Forewings dark brown. The basal spot, antemedian, contour of the claviform, and the orbicular, a median shadow which starts very wide from the costa, encloses the reniform and finishes on the inner margin, the single postmedian and a spot between veins 5 & 7 on the distal margin are all very dark brown, almost black. Contour of the orbicular and the antemarginal cuneiform markings light, the fringes brown with a single light stripe. Hindwings dark brown, the fringes light.

ab. feratra Berio Ann. Mus. Civ. Genova 1935. 59 p. 98.

Female - Like the female ab. nigra Tutt this form is quite black without white patterns, not even the orbicular is visible, the ground colour is deep coal-black. The orbicular however, is outlined by its conspicuous white contour. Hindwings dark except at the base, the fringes of all wings ochre coloured.

ab. venata Berio Ann. Mus. Civ. Genova 1935. 59. p. 99 pl. 4 f. 37.

Female - Dark forewings and white hindwings. On these the veins 2, 3, 4, 6, and 7 are well marked in black.

ab. lignosina Berio Ann. Mus. Civ. Genova 1935. 59. p. 99 pl. 4 f. 34.

Identical in colour with female ab. golignosa Berio (= lignosa Godart) merely a little duller. Hindwings brown, much smaller in size. Described from Algeria, Type in Rothschild Coll. Tring.

ab. composita Berio Ann. Mus. Civ. Genova 1935. 59. p. 99 pl. 4 f. 38.

Female - Forewings with basal and median areas deep black; from the postmedian to the fringes dark fiery chestnut. The ante and postmedian lines are distinctly marked in uniform black, the orbicular in conspicuous white. Hindwings uniformly dark with pale fringes.

Noct. 9
p. 6.

Agrotis Ochs.

puta Hbn. aberrational forms etc.

ab. erythroxylea Treitschke. Schmett. Eur. 1826. 5. (3) 31.

Berio in Ann. Mus. Civ. Genova vol. 59 p. 80 defines this form as having an ivory ground colour and entirely lacking the ante and postmedian transverse lines, a tiny orbicular and without spots. He had one specimen from Sicily so it would appear to be an aberration and not a subspecies.

ab. erythrosimilis Berio. Ann. Mus. Civ. Genova 1935. 59 p. 93 pl. 4 f. 27.

Similar to erythroxylea Tr. but the ante and postmedian lines are completely visible; lunulate but single.

ab. brunnescens Lempke. Tijdschr. Ent. 1962. 105. p. 175.

The ground colour of the forewings brownish.

This is the original description. Lempke then restricts ab. juncta Berio (see p. 3 of these notes) to a markings-only form, stating "Berio describes a form juncta, with brown ground colour and confluent spots, but with a view to the name used by him it seems more logical to restrict this name to all specimens showing the confluent spots independent of the ground colour."

ab. junctoides Lucas. Ent. Ber. (Amst.). 1960. 20. p. 229.

The orbicular and reniform touching each other.

ab. semiconfluens Lempke. Tijdschr. Ent. 1962. 105. p. 176.

The orbicular and reniform connected by a narrow isthmus.

Noct, IO.
P. I.

Agrotis Ochs.

trux Hubner.
subsp. lunigera Stephens.

trux Hubner. The type form does not occur in Britain.

subsp. lunigera Stephens. 1829.2.p.113 pl.20 f.3.

Described from Ireland. The form is very distinct from typical trux, occurs chiefly on S.W. Coast of England, rarely in Scotland.

ab. pallida Tutt. Brit. Noct. 1892.2.p.15.

Pale whitish-grey with a slaty tinge, transverse lines and stigmata as in type, not irrorated with yellowish. Occurs only in the male.

ab. virgata Tutt. Brit. Noct. 1892.2.p.15.

Like the preceding pallida but with a dark transverse shade inside of and through the reniform, and all the outer area of the wing beyond the elbowed line darker than the ground colour. Occurs in both sexes.

ab. suffusa Tutt. Brit. Noct. 1892.2.p.15.

The whole area of the wing dark blackish-grey except the pale orbicular and a small patch between the reniform and elbowed line which are slightly paler, transverse lines indistinct, claviform and outline of reniform intensely black. Hindwings of males almost as dark on outer margin as in females. Occurs in both sexes but very rarely in the male.

ab. nigra Tutt. Brit. Noct. 1892.2.p.15.

Unicolorous blackish, orbicular indistinct, transverse lines almost obsolete. Female form.

ab. rufescens Tutt. Brit. Noct. 1892.2.p.15.

Markings normal but shaded with reddish.

ab. asticta Cockayne. Ent. Rec. 1946.58.p.73 pl.X f.I.

Male. The black ring around the orbicular is absent and there is no trace of the claviform; in other respects normal.

Noct. II.
p. I.

Agrotis Ochs.

exclamationis L. aberrational forms etc.

ab. serena Alpheraky. Mem. Rom. 1889. 5. p. 137
= pallida Tutt. 1892. 2. p. 65.

Forewings pale whitish grey, somewhat darker in the female.

ab. costata Tutt. Brit. Noct. 1892. 2. p. 65.

Ground colour grey with distinct reddish costa.

ab. picea Haworth. Lep. Brit. 1809. p. 220.

Forewings black grey, markings normal. Female form.

ab. rufescens Tutt. Brit. Noct. 1892. 2. p. 65.

Ground colour clear reddish-grey, the markings more or less distinct.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 65.

Ground colour dark reddish-brown, the markings more or less distinct.

ab. wehrlii Vorbrodt. Schmett. Schweiz. 1914. 2. p. 622.

Remarkable form of picea Haworth which has a 4mm. wide ochre-yellow basal area and transverse bands on the black-grey ground. Female.

1932. p. 127.

ab. ostrogovichi Dioszeghy. Verh. und Mitt. Siebenb. Ver. f. Naturw. zu Hermannstadt
Collar black; forewings pale yellowish-grey, claviform small but clear, orbicular
~~absent~~. Reniform fairly clearly defined. Both cross-lines absent, but a brown-
grey shade, sharply emphasised, extends from the subterminal line to the fringes.

ab. unicolor Hubner. Samml. Eur. Schmett. 1809-13 pl. II7 f. 544.

The figure shows the forewings yellowish-brown with the orbicular and reniform finely etched in black but no other markings. Normally the stigmata are filled more or less with black, in this figure only the contours are shown. Tutt is quite wrong in saying the orbicular is absent, it is the claviform which is not shown.

ab. obsoleta Tutt. Brit. Noct. 1892. 2. p. 65.

The three stigmata entirely or almost entirely absent.

ab. quadrimacula Wehrli in Vorbrodt. Schmett Schweiz 1914. 2. p. 622.

Forewings with an isolated black spot between the stigmata, below the orbicular making four spots instead of the normal three.

ab. conjuncta Hirschke Verh. zool.-bot. Ges. Wien 1910. 60. p. 416.

From the lower edge of the reniform there is a black-edged streak which runs to the lower edge of the orbicular which, however, it does not reach.

This presumably means that the claviform is united with the reniform by the streak since if it does not touch the orbicular it must touch the claviform.

ab. juncta Tutt. Brit. Noct. 1892. 2. p. 65.

The orbicular, reniform and claviform all united, one streak in the place of the orbicular and reniform, another replacing the claviform.

ab. plaga Stephens Ill. Haust. 1834. 4. p. 388.

Greyish-brown with a very obscure palish wavy streak near the outer margin, and on the disc a stout, deep black longitudinal dash towards the inner margin and more than one third of the wing in length; adjoining this towards the apex of the costa is a second very faint brown dash; posterior wings fuscous.

ab. cuspidata Culot. Noct. 1909-13. I. p. 70 pl. II f. 8.

The reniform and orbicular remain distinct and separated, but on their outer edge from the claviform and upwards, short black tooth-like projections travel outwards towards the outer margin.

ab. lineolatus Tutt. Brit. Noct. 1892. 2. p. 67. Newman's Brit. Moths. p. 326 fig. I. Tutt, referring to the figure in Newman, says "the peculiar development consists in the formation of lineolae running out from the reniform and others taking the place of the cuneiform spots.

The figure shows the claviform thickened into an oblong shape which reaches the postmedian line; thick lines also stretch out from the reniform and reach the postmedian, thus filling the central area except for light veins which slightly cut up the solid black.

The form is a transition from the preceding cuspidata Culot.

ab. posteli Culot. Noct. 1909-13. I. p. 70 pl. II f. 7.

The figure shows the area from the postmedian line to the margin darkened to form an almost black marginal band, the rest of the wing being dull brownish grey.

ab. invertilinea Le Charles. Anat. Pap. 1926. 3. p. 64 pl. 2 f. 5. (6 in error)

The figure shows the markings distorted, the claviform instead of the normal horizontal line is in the form of an upright lunule; the orbicular is absent, the reniform more or less normal but beneath it is another upright lunular mark facing in the opposite direction to the claviform mark. This starts on and actually touches the reniform, curves inwards and then outwards, to form the crescent or lunular mark. The transverse lines are absent.

This would appear to be a pathological form caused by pressure on the pupa.

ab. dufranei Lamb. Rev. Mens. Soc. Nam. 1907. 7. p. 26.

A yellowish-grey, the normal lines obliterated, reniform partly, orbicular & claviform absent, leaving only a few ferruginous traces hardly visible. The margin of forewing broad and brownish grey, the nervures and costa also brownish-grey

ab. nigrata Alexinschi & Peiu. Bull. Sti. Acad. Repub. Rom. 1953. 5. p. 496.

A melanic form in which the orbicular, reniform and claviform stigmata are enlarged and coloured intense black. The ground colour of the upperside of the hindwings is a darker ashy grey-violet in both sexes.

This is the original description; although the authors themselves consider the form to be a melanic, the description does not bear this out.

ab. nigrescens Schwingenschuss. Mem. S. Sci. Nat. Marc. 1935. 42. p. 52.

Described under the subsp. nigriorbis Zerny.

The female (of nigriorbis) is usually dark red-brown; however, one has deep blackish-brown coloured forewings.

ab. csutaki Dioszeghy. Verh. Siebenb. Ver. Nat. 1932. p. 127.

Forewings yellowish-grey, the claviform and orbicular absent, reniform roundish, small and black-brown. The basal and outer areas of the wings darker, in the latter three fine black-brown dart-shaped marks. Hindwings dirty white, rather yellowish-grey towards the fringes.

ipsilon Hufn. aberrational forms etc.

ab. annexa Stephens (nec. Tr.) Ill. Haust. 1829. 4. p. 117 pl. 22 f. 2.

Forewings with a broad costal band of grey-brown from the base reaching the posterior stigma (reniform), the rest of the wing of a deeper brown, the outer margins rather paler; at the base, dividing as it were, the two shades, is a longitudinal dusky streak and on the outer margin are two or three lineolae of a similar colour; anterior stigma pale with dusky centre, posterior rather slender also dusky in centre with pale margin; they are connected together by a broad black streak, teleform stigma faint and behind the posterior one is an arcuated striga of pale spots. Hindwings pearly white with the veins and margins slightly fuscous.

The main characters in the figure are the black bar linking the orbicular and reniform, the pale costa and the absence of the normal black tooth projecting from the reniform.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 9.

Forewings with the outer area of a pale whitish colour without the ochreous of typical specimens, for the rest normal.

ab. albescens Clark. Ent. Rec. 1904. 16. p. 167 pl. 8 f. 2.

Head, thorax of an exceedingly pale whitish-grey, the abdomen even more white; forewings pale whitish-grey, tinged with pale rufous or reddish-brown. Hindwings much whiter. The usual pale areas in the typical form, viz., the basal line and patch at base, the pale patch below the orbicular, the reniform and the outer transverse band being of the paler tint exhibited by the ground colour; the fringes of the same tint.

The form would appear to be an albino.

ab. obscura Lenz. Schmett. Sudbayern 1917. I. (2). p. 249. (Osthelder gives Lenz author)
Darkened to grey-black.

ab. fusca Dannehl. Ent. Z. 1925. 39. p. 135.

The basal and central areas of the forewing dark-dusted so that the markings become unrecognisable, leaving only a broad light brown outer border.

ab. nigrostriata Cockayne. Ent. Rec. 1951. 66. p. 65. pl. 2 f. i.

On the forewing from the upper edge of the claviform a black streak runs obliquely to the postmedian line.

ab. clara Lempke. Tijdschr. Ent. 1939. 82. p. 219.

Ground colour of the forewings very pale grey-brown. Male form.

ab. rufa Lempke. Tijdschr. Ent. 1939. 82. p. 219.

Ground colour of forewings red-brown. Male form.

ab. obscurata Lempke. Tijdschr. Ent. 1939. 82. p. 219.

Male form, the ground colour of the forewings almost as dark brown as in females.

ab. inversa Lempke. Tijdschr. Ent. 1939. 82. p. 219.

Female form, the ground colour of forewings greyish-brown, almost as in the normal males.

ab. striata Lempke. Tijdschr. Ent. 1939. 82. p. 220.

On the forewings the black line on the outer edge of the reniform united with the black sagittate spot opposite on the margin.

ab. semiconfluens Lemcke. Tijdschr. Ent. 1939. 82 p. 220 (description on p. 197)
On the forewing the reniform and orbicular remain in their normal position
but are joined by a double line, a single contour enclosing both the stigmata.

Noct I3.
p. I.

Agrotis Ochs.

ripae Hubner. aberrational forms etc.

ripae Hbn. typical form- Forewings brownish yellowish grey, the costal area lighter grey, markings more or less distinct.

ab. obsoleta Lempke. Tijdschr. Ent. 1939. 82. p. 228.

Forewings dark brownish-grey, the markings scarcely visible..

ab. desillii Pierret. Ann. Soc. Ent. Fr. 1839. p. 95. pl. 8 f. 2.

Ground colour of the forewings pale ochreous with a reddish tinge, the markings indistinct.

ab. albicosta Tutt. Brit. Noct. 1892. 2. p. 68.

Forewings pale ochreous with a reddish tinge as in the preceding desillii but with the costa white.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 68.

Forewings reddish-brown with distinct markings.

ab. grisea Tutt. Brit. Noct. 1892. 2. p. 68.

Forewings dark greyish with a slight slaty tinge.; much suffused.

ab. nebulosa Stephens. Ill. Haust. 1829. 2. p. 127.

Forewings pale hoary or whitish grey, the costa slightly clouded with fuscous with a cloud of the same hue at the base; beyond the reniform is an arcuated submoniliform striga, beyond which the rest of the wing is deep fuscous with an undulated white striga composed of approximating wedge-shaped spots; in the margin itself a series of minute black subtriangular dots. Hindwings pure white.

The main feature in the coloured figure is the fuscous band just beyond the post-median line, followed by the whitish marginal band cut by the dark veins.

ab. obovata Schmidt. Stett. Ent. Z. 1858. 19. p. 377.

Very pale form varying from pure white with indistinct markings to partly yellowish with more or less distinct markings. On the whole there is much more white than in any of the allied forms.

Schmidt credits Hering with the name obovata but gives no reference.

ab. weissenbornii Freyer. Neu. Beitr. 1845. 5. p. 139 pl. 466 f. 3.

Ground colour pale yellowish-white, two weakly marked spots and a trace of small weak cone-shaped spot, of lines and bands on the forewing there is nothing visible. Hindwings pure white.

The description does not agree with the figure which shows a very definite ante-median line. The orbicular and reniform and claviform show merely their black contours.

ab. signata Cockayne. Ent. Rec. 1958. 46. p. 73 pl. X f. 2.

Forewing with the ground colour of the median area pale grey with a faint rufous tinge, that of the marginal area pale grey; the stigmata outlined with brown; the sub-marginal line is bordered internally with dark brown. Hindwings whitish with distinct grey-brown submarginal shading which continues in line with that of the forewings. This shading on both wings distinguishes it from other forms.

ab. bivirga Lempke. Tijdschr. Ent. 1939. 82. p. 228.

The basal and marginal areas blackish, the median area light.

Noct. I4
p. I.

Lycophotia Hubner.

varia Vill. "aberrational forms etc."
= *concinna* Esp.
= *picta* Fabr.

ab. varia Vill. Dark purplish-red brown. Accepted as the typical form by some authors. There seems to be complete confusion over the various names used by the old authors. Other names used for the species given below until some sort of decision is made.

strigula Thnbg. I788 (nom. preoc.)
porphyrea Schiff. I775.
birivia Schiff. I775.
porphyrea Hbn. I800-03.
ericae Haworth. I809.

ab. marmorea Graslin. Ann. Soc. Ent. Fr. I862. p. 312 pl. 8 f. 9.

The ground colour greyish. The figure shows a tace of the normal red-brown just above the inner margin and in the basal half.

ab. ferruginea Lempke. Tijdschr. Ent. I939. 82 p. 238. (= *strigula* Thnbg.)

The ground colour of the forewings red-brown.

Lempke has renamed the red-brown *strigula* of Thunberg as an aberration leaving the dark purplish red-brown form as the typical form.

ab. flavescens Lempke. Tijdschr. Ent. I939. 82. p. 238.

Ground colour of the forewings yellowish, the markings distinct.

ab. grisea Lempke. Tijdschr. Ent. I939. 82. p. 238.

Ground colour pure grey, without red or brown.

ab. suffusa Tutt. Brit. Noct. I892. 2. p. 89.

Forewings dark brownish-red, with the white markings almost of the same tint in the basal and central areas, the outer ones more typical.

From Shetland and possibly confined to these islands, the species usually larger in size.

ab. nigrescens Cockayne. Ent. Rec. I952. 64. p. I90 pl. 8 f. 6.

Ground colour deep purplish black with the basal ante and postmedian lines pale purplish; subterminal line reduced to a row of small dots very little paler than the ground colour; orbicular absent, reniform white and conspicuous. Hindwings dark brown, paler towards base.

ab. reducta Lempke. Tijdschr. Ent. I939. 82 p. 238.

The orbicular stigma absent.

ab. juncta Lempke. Tijdschr. Ent. I939. 82. p. 238. (described p. I97.)

The orbicular and reniform touch each other.

Noct. 15
p. I.

Actebia Stephens.

praecox Linn. aberrational forms etc.

ab. signata-deleta Turner. Ent. Rec. 1937. 49 p. (119) Sep. (from Barrett pl. 134 f. 2b)
The usual markings practically absent so that the ground colour is of a nearly uniform green.

Turner names this figure in Barrett which appears to be an albino.

ab. praeceps Hubner. Samml. Eur. Schmett. pl. 15 f. 70.

Most probably a synonym of the type but many authors describe the figure as "bluish-green". In the Tring Museum copy of Hubner it is more of a yellowish green and obviously meant to represent typical *praecox*.

ab. flavomaculata Graeser. Berl. Ent. Z. 1888. p. 323.

Ground colour not so pale as typical but more bluish and darker; the stigmata are unicolorous intensive ochre-yellow and stand out much sharper from the bluish ground. Hindwings much darker than typical, unicolorous black-grey.

saucia Hubner. aberrational forms etc.

ab. margaritosa Haworth. Lep. Brit. 1809 p. 218.

Forewings grey with ashy clouds, three ordinary stigmata sub-obliterated, the apical spot paler. Hindwings smoky white with a violet tinge, veins and outer margin particularly the anal angle verging on fuscous.

By the description this does not seem to be the common form most often labelled margaritosa, grey forms are not common most of our English examples being much more of a brown tinge.

saucia Hbn. typical form - The figure in Hubner pl. 81 f. 378 shows the forewings dark brownish grey, the costal margin broadly vinous-red, the outer margins paler.

ab. majuscula Haworth. Lep. Brit. 1809. p. 218.

Wings greyish fuscous or pitchy black, three stigmata sub-obliterated. Hindwings smoky white, veins and hindmargin, particularly the anal angle, tending towards black.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 5.

Forewings bright brownish-ochreous, markings clear.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 5.

Forewings vinous-red, the tint covering the whole of the wings.

ab. aequa Hubner. Samml. Eur. Schmett. 1809-13. pl. 122 f. 564.

The figure shows the forewings yellow-brown on the costal area and postmedian area, and the basal, central and extreme outer margin clouded with brownish tinged with red. Hindwings whitish darkened towards margins.

ab. ochrea-costa Tutt. Brit. Noct. 1892. 2. p. 5.

Forewings blackish-grey with a pale shade along the costa, standing out strongly against the darker colour of the inner marginal area.

ab. nigrocosta Tutt. Brit. Noct. 1892. 2. n. 5.

= philippsi Caspari. Jahrb. Nassau 1899. 52. p. 199 pl. 4 f. 14, 15.

Forewings greyish-fuscous sometimes tinged reddish or ochreous, with a broad black shade along the whole of the costal area, sometimes extending far enough down the wing as to enclose the stigmata.

= nigrocosta Gelin. Cat. Lep. l'Ouest Fr. 1912 p. 97.

ab. fuscobrunnea Strand. Arch. Naturg. 1915. 81. A 12. p. 146.

Forewings dark brown with the costal area, orbicular and subterminal area and an apical patch grey.

ab. decolor Rebel. Rev. Lap. 1916. 23. p. 108.

Forewings reddish-grey and markingless. Hindwings brown with grey veins.

subsp. renigera Stephens. Ill. Haust. 1829.2.p.129. *misidentification of renigera itbr
& cannot name*
~~The race from Scotland and N. England.~~

Forewings shining griseous or brownish-black, the stigmata scarcely visible, the transverse lines paler but obscure; the outer margin very deep fuscous-black. Hindwings deep fuscous-ash, or blackish, the base rather paler.

ab. distinguenda Stephens Cal. Brit. Anim. B.M. 1850: 5: 1.75 *Res. 57-11- blackish form but
the type is not available*
Palen's? Stephens ZT. Haust. 1829: 2: p. 129.
*was gloss ash-black, transverse lines scarcely visible, margins darker, stigma obscure with dark hyaline spot
between them*

ab. catalaeca Boisduval. Ann. Soc. Ent. Fr. 1833.2.p.377 pl. 14 f. 2.
Forewings with a distinct middle shadow which is said to be lacking in the type. This form occurs quite commonly in Britain but may be racial on the Continent.

? ab. melanophila Schawerda. Zts. Oest. Ent. Ver. 1933. 18. p. 70.
Forewings with grey ground, not ochre-yellow, wholly darkened, with a wide blackish outer area. Of the same colour are the central transverse band and the reniform. Hindwings blackish darkened, the fringes whitish.
In Seitz Suppl. these are removed to another species, *Rhyacia insulicola* Turati.

? ab. pallida Schawerda. Zts. Oest. Ent. Ver. 1933. 18. p. 70.
Two males wholly pale yellowish-grey colour. Only the praemarginal narrow band and central band are somewhat darker. Hindwings also much lighter.
In Seitz Suppl. removed to the species *Rhyacia insulicola* Turati.

ab. kerrensis Kane. Entom. 1895. 28. p. 200.
Bluish black, generally almost or entirely unicolorous, but sometimes the waved transverse strigae are slightly marked in paler tone
A local form found on the extreme western headlands of Kerry, Ireland.

simulans Hufn. aberrational forms etc.
= pyrophila Schiff.

ab. suffusa Tutt. Brit. Noct. 1892. 2. 80.

= obscurata Staudinger. Cat. Ed. 3. 1901. p. 143.

Forewings of a dark blackish colour with fairly distinct lines and stigmata presenting a very complete melanic appearance when compared with the type. Hindwings dark grey.

ab. latens Stephens. Ill. Haust. 1829. 2. p. 129.

Forewings glossy ashy black, the lines obsolescent, outer area darker with an obscure pale denticulated striga towards the margin, the margin itself immaculate. Stigmata very obscure with a dark quadrate spot between them. Hindwings obscure cinereous.

Most specimens from Scotland agree with this description.

ab. pyrophila Hubner. Samml. Eur. Schmett. 1800-03. pl. 9 f. 43.

The coloured figure in Hubner shows the forewings of a deep ochreous with a slight brownish tinge, the markings distinct.

The form is treated as an aberration by most authors since Hufnagel's type form is light greyish-brown. If one can accept the colour of these old figures as true this may be correct since our Portland specimens agree with Hubner's pyrophila whilst specimens caught at Tring are much less ochreous in tone.

Noct. I8.
p. I.

Spaelotis Bsd.

ravida Schiff. aberrational forms etc.
= ravida Hubner.

ravida Schiff. the type form is said to have the space between the stigmata filled with black, the forewings grey-brown the costa reddish.

ab. obscura Brahm's Insektenkal 1790. I. P. 191.

Ground colour of the forewings grey-brown, the costa reddish.

ab. obducta Esper. Eur. Schmett. 1789. 4 pt. 2. p. 452 pl. 142 f. 4.

Many authors seem to have missed the chief character of this form, not mentioning the pale lines which are so stressed in the figure. Lempke merely says "Complete grey-brown without the reddish costa." Esper heads his description "obducta - Brownish, light grey spotted and lined night-moth." and proceeds to give the description proper, with which his figure agrees, as follows in Latin - -
Wings fuscous, the basal spots, the stigmata, and the outer extensive double stripes, pale.

If this form really belongs to ravida it is greyish-brown with the transverse lines etc well outlined in pale yellowish.

ab. austera Esper. Eur. Schmett. 1789. 4. pt. 2 p. 452 pl. 142 f. 5.

Esper says the wings dark brown, a black triangular spot from the base to beyond the middle of the wing, in the middle of this there is the orbicular and at the end the reniform, the stigmata pale.

Many authors describe this form as reddish but Esper does not mention the tint. It would appear to be dark brown with no visible transverse lines except a lower spot of the antemedian, the space between the stigmata filled with black

ab. bigramma Esper. Eur. Schmett. 1789. 4. pt. 2 p. 490 pl. 150 f. 2.

Wings greyish-brown, the stigmata small and pale, the space between them filled with black, this black also extending inwards beyond the orbicular towards the base; the outer transverse line pale.

ab. crassa Haworth. Lep. Brit. 1809 p. 220.

Wings fuscous, with shining, more or less cloudy, black. Base of forewing with a black line, or black; other irregular markings between and around the ordinary stigmata obsolete, third stigma imperfect or sometimes completely obliterated; often with the very obscure pale ordinary strigae of many noctuids more or less fuscous, the marginal one pale in contrast to the fuscous. Hindwings white with smoky veins and hindmargins.

This would seem to be a synonym of obscura Brahm's, but is treated as an aberration by many authors. It can be separated by the apparent absence of the red tint on the costa since this is not mentioned in the description.

ab. suffusa Tutt. Brit. Noct. 1892 2. p. 82.

Unicolorous greyish-black or blackish fuscous with a short longitudinal streak under the base of the median nervure, the ordinary transverse lines and stigmata very indistinct and almost unicolorous with the rest of the wing. Hindwings rather darker than in other forms.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 62.

Reddish-brown. The whole of the ground colour of this tint the transverse lines fuscous the stigmata pale usually lines with black at their lower extremities; the subterminal line paler than the ground colour.

Tutt says this is the ravida of Hubner f. 600 (not 126) but this figure in our copy of Hubner does not agree at all with Tutts rufa, being of a dark brown

ab. semiconfluens Cockayne. Ent. Rec. 1952. 64. p. 129.

The orbicular and reniform stigmata are united.

Noct. 18.
p. 2.

Spaelotis Bsd.

ravida Schiff. continued.

Noct. I9.
p. I.

Graphiphora O.

augur F. aberrational forms etc.

ab. hippophaes Hubner. Samml. Eur. Schm. 1828-32. pl. 166 f. 782-3.
The figure shows the wings greyish-brown, the markings well pronounced.

augur Fab. typical form - most authors agree that this is reddish-brown or brown.

ab. omega Esper. Eur. Schm. 1788. 4. 398 pl. 131 f. 2.

Esper says the ground colour is brownish light grey, his figure does not agree, it is rather dark reddish-brown, his latin description says reddish-grey. It would appear to be a synonym of the typical form, possibly slightly paler.

ab. assimulans Borkhausen. Naturg. 1792. 4. p. 209.

Forewings yellowish-grey, glossy.; the markings more or less normal.

ab. nigra Vorbrodt. Schm. Schweiz. 1911. I. p. 248.

Quite dark, almost blackish.

ab. helvetina Knaggs. Ent. Mon. Mag. 1872. 8. p. 182.

Very pale brown ground colour, the markings, with the exception of a faint indication of the reniform, are virtually absent; the wings have a peculiar silky or satiny texture and lustre. Hindwings silky fuscous whitish with a barely discernible lunule.

We have the types in the British Museum (R.-C.-K. Coll.) and both are albinos.

ab. conjuncta Schille. Polsk. Pismo. Ent. 1924. 3. p. 7.

A black longitudinal streak extends from the reniform stigma to the outer transverse line.

ab. bivirga Ceton. Ent. Ber. 1935. 9. p. 192.

The discal area of the forewing between the two transverse lines is very much lighter in depth of colour, so that it gives an entirely appearance from the typical form.

ab. juncta Lempke. Tijdschr. Ent. 1939. 82. p. 235 (description p. 197)

The orbicular and reniform are joined.

ab. abdita Joann. Bull. Soc. Ent. Fr. 1891. p. 81.

Turner in his Brit. Noct. (Suppl. Ent. Rec. 1938 50. p. (145) & (146)) gives this form both as an aberration and a subsp., with the description which does not seem to be of an augur form, the hindwings being whitish and a little smoky on the margin, the nervures distinct,

Seitz gives no abdita Joann., only abdita Stgr (nec. Joann.)

ab. lucifera Esper. Eur. Schmett. 1789. 4. p. 453. pl. 142 f. 6.

Forewings rufous clouded with violet especially towards the outer margin; stigmata pale yellow, a black spot between the reniform and orbicular, three dark bands traverse the wings leaving a fascia of yellow spots towards the outer margin. The chief character would seem to be the yellow transverse fascia just beyond the reniform.

ab. nigricans Lampa. Ent. Tidskr. 1885. 6. p. 53.

Blackish. This probably means purplish-black.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 113.

The red colour spread all over the wings, they are bright red with the stigmata yellowish, but the black quadrate spot between the stigmata is often no darker than the rest of the wing.

ab. suffusca Strand. Arch. og. Nat. 1903. 25. p. 10.

Forewings of a paler grey-brown and the fringes a less brownish colour, the violet suffusion so distinct in typical specimens is only slightly indicated on the costa and on the basal half; the stigmata less emphasised one sees only a slight black ring in their place. Hindwings rather pale.

ab. norvegicola Strand. Arch. Naturg. 1915. 81 A 12. p. 146.

Forewings brownish-grey tinged with olive without the rufous and purple tinge. Described as an aberration, possibly racial in Scandinavia.

Noct. 2I.
p. I

Diarsia Hbn.

mendica Fabricius. Syst. Ent. 1775 p. 6II.
= festiva auct.

mendica Fabricius, typical form - - Following the arrangement of Tams and Fletcher in the new "South", the type form is now mendica F., the description of which is - Forewings pale flesh-coloured with several fuscous striae; in the middle of the wing a large fuscous spot and in this the ordinary stigmata are very yellow. The hindwings yellowish with a fuscous stripe. This is characterised by the space between the stigmata being filled with dark.

ab. primulae, Esper. Eur. Schmett. 1788. 4. p. 428 pl. 136 f. 5.

The ground colour greyish-yellow, the stigmata whitish, a triangular blackish spot between them, other markings not distinct.

ab. festiva Schiff. Verz. Anh. 1775. p. 314.

= festiva Hübner. Samml. Eur. Schmett. 1800-03 pl. 24 f. 114.

Presuming that Hübner's form is the same as Schiff, the description is given of Hübner's figure - Forewings with the basal half rather pale greyish with distinct markings, the outer half reddish with varying transverse shades; a dark spot between the stigmata.

ab. congener Hübner, (turbida in error on pl.) Samml. Eur. Schmett. 1814-17 pl. 135 f. 618

= turbida Hübner. Samml. Eur. Schmett. 1814-17 pl. 135 f. 617. (turbida is a Leucanid)

The figure shows the forewings bright yellowish-ochre with a prominent middle-shadow of reddish-chestnut, the lower part darker chestnut. The transverse lines and other markings fine but distinct.

Many authors, including Cockayne give the name congener to this figure 617 of Hübner instead of turbida. Hübner's name congener is given to f. 618 which is a form of *L. comma*. Tutt says it is turbida in error but gives no reason. Lempke calls, it as Hübner does, turbida. The reason for this is that Hübner had already named turbida on pl. 47 fig. 228 and it seems obvious that the fig. 618 called on the plate congener is in fact turbida (a darker form), therefore the names of figs. 617 and 618, are in error, switched about, 617 being congener and 618 being turbida.

ab. subrufa Haworth. Lep. Brit. 1809. p. 227.

Forewings red or reddish-purple, the ordinary stripes and spots paler and indistinct. Reniform stigma close to the oblong fuscous spots, the outer one in its upper part yellowish otherwise as in festiva.

ab. pseudoconflua By. - Salz. (nom. nov. pro. conflua H. - Sch. nec. Tr.) Ent. Rec. 1939. 51. p. 30.

= conflua H. - Sch. nec. Tr. Syst. Bearb. 1851 ? p. 358.

Bright ochreous and reddish-brown mixture, the colour not approaching violet red but is more yellow-brown. Between the two basal lines is a black dot, of the claviform only the black dot at the end is visible.

ab. rufo-virgata Tutt. Brit. Noct. 1892. 2. p. 120.

Ground colour deep reddish-ochreous mottled with darker red but with the basal area paler ochreous and also the extreme outer margin beyond the subterminal line, the area between the central transverse shade and subterminal being darker red forming a sort of transverse band. *without quadrate spot between stigmata*

ab. ignicola Herrich-Schaffer. Syst. Bearb. 1850 ? 2. pl. 88 f. 455.

The figure shows the forewings dull ochreous with the transverse lines distinct. The base brown, also the middle shadow and a transverse band just before the outer margin. No quadrate spot between the stigmata, only the continuation of the middle shadow.

ab. ochrea-virgata Tutt. Brit. Noct. 1892. 2. p. 120.

Pale yellow or whitish-ochreous with the basal area pale, the central shade well developed, the area from this to the subterminal line filled in with dark reddish through which passes the elbowed line and in which stands the pale orbicular. *without quadrate spot between stigmata.*

ab. roseovirgata Cockayne. Ent. Rec. 1952. 64 p. 129 pl. 5 f. 1.

Ground colour greyish-ochreous with few markings; a conspicuous transverse band, greyish-lilac, with a tinge of pink, between the outer of the two blackish lines bounding the median area and the pale line external to the subterminal.

The type is in the R.-C.-K. coll. Brit. Mus., the description is somewhat misleading; the "pale line" is not external to the subterminal, the area between the postmedian and the pale line is filled in with lilac and forms a transverse band.

ab. grisea Tutt. Brit. Noct. 1892. 2. p. 122.

Forewings almost unicolorous dark greyish, slightly glaucous, with a slight reddish tint, a most ill-developed or obsolete median shade, orbicular grey, reniform ochreous, a slightly darker transverse shade between the elbowed line and the subterminal.

ab. coerulea Tutt. Brit. Noct. 1892. 2. p. 122.

Forewings of a clear slaty or lilac colour; the stigmata paler but without quadrate spots.

ab. quadrata Tutt. Brit. Noct. 1892. 2. p. 122.

Forewings clear slaty or lilac as in the preceding but with the space between the stigmata filled in with a dark quadrate spot and another inside the orbicular.

ab. fuscolimbata Cockayne. Ent. Rec. 1952. 64 p. 129. pl. 5 f. 2.

Ground colour of the forewings pale brownish-ochreous dusted with black scales from the external of the two lines bounding the median area, to the termen; the normal markings visible; there is also slight dusting with blackish scales between the basal and antemedian lines.

ab. nigrobasalis Cockayne. Ent. Rec. 1952. 64. p. 129 pl. 5 f. 3.

On the forewing, between the basal and antemedian lines, powdered with black scales and the upper half of the lines themselves is thick and black.

ab. uniformis Lempke. Tijdschr. Ent. 1939. 82. p. 242. (lamentanda Warren nec. Alpheraky)

Forewings light unicolorous ochre-yellow with very weak markings.

ab. fasciata Hannemann. Int. Ent. Z. 1917. II. 7. 105.

The hindwings with a sharply defined light postdiscal band.

ab. havana Sibille. Lamb. 1927. 27. p. 74.

The colour "havana" with the submarginal band more dark.

ab. fibulata Dahl. Ent. Tidskr. 1930. 51. p. 251 pl. I of Dahl f. 2.

This separates itself from the other described forms in that the dark outer border is absent. From the base of the forewing there proceeds an obscure red streak towards the lower portion of the area near the anal angle of the wing.

ab. disparata Draudt. Seitz 1933. 3 Suppl. p. 76. pl. II f. row G.

"Looks almost like a brunnea by its dark violet ground colour with still darker patch between the stigmata, and its bright yellow-red anal tuft."

The figure does not look like festiva, described from Lapland.

ab. carlilei Brandt. Ent. Z. 1934. 47. p. 148. fig.

Ground colour similar to the type form but the brown scaling is wanting, thus the whole ground colour is lighter. The postmedian at the costa runs the wrong way, cutting through the reniform (instead of round it), the subterminal is dark-shaded on its inner side and this dark shadow is broken through by pale radial streaks of ground colour, thus a quite different appearance is given, on the fold between the stigmata there are black streaks.

ab. cingulata Cockayne. Ent. Rec. 1946. 58 p. 73 pl. X f. 4.

Ground colour pale yellowish-grey; a broad blackish band due to a thick sprinkling of black scales runs across the middle of the wing extending from the external border of the orbicular to the postmedian line; the submarginal line is present but faint.

ab. mediorotundata Boldt. Tijdschr. Ent. 1939. 82. p. 242.

The median shadow line goes from the costa along the external border of the orbicular forming a semi-circle to the inner margin.

ab. conjuncta By.-Salz. Ent. Rec. 1939. 51. p. 31.

= semiconfluens Lempke. Tijdschr. Ent. 1939. 82 p. 242. (description p. 197)

The orbicular and reniform broadly conjoined at the base.

Lempke's form has the stigmata united by a double line. Cockayne makes it a synonym.

ab. transversa By.-Salz. Ent. Rec. 1939. 82. p. 31.

Ground colour reddish or whitish ochreous, no dark quadrate spots present. Two very large transverse shades across the forewing, one middle shade between the orbicular and reniform and another outside the postmedian line.

ab. dannehli Corti & Draudt. Seitz 1933. 3 Suppl. p. 75 (corrected p. 250) pl. 24 row i.

Described first as a species but demoted to an aberration of festiva by Draudt.

Single male, looking like an enormous very wide-winged dahlia, of pale ochreous yellow colour and with very striking grey-black central band. The other markings are only faint, but the dot in the claviform is distinct. Hindwings pale blackish with yellowish fringes and blackish marginal streaks.

subsp. *orkneyensis* By.-Salz. Ent. Rec. 1939. 51. p. 31.

Ground colour a very rich Prussian red to cameo-brown. The transverse lines slightly lighter, the submarginal line rather strongly contrasted ochreous. Reniform very distinct, light ochraceous buff, also the orbicular circled with the same colour. Darker spots before and behind the orbicular. A small black dot at the end of the claviform. Hindwings as in *festiva*, sometimes a rather distinct light postmedial line present. Tip of the abdomen in the ♂ rufous.
The race from Orkney Islands.

subsp. *orkneyensis* ab. *depicta* By.-Salz. Ent. Rec. 1939. 51. p. 31.

As in the preceding *orkneyensis* but the transverse lines obsolete, maculae of the ground colour, quadrate spots absent.

subsp. *conflua* Treitschke.

The subspecies from Iceland according to Bytinski-Salz and not occurring in Britain.

subsp. *borealis* Zett.

This is the subspecies from Northern Scandinavia with its f. *diducta* Zett. and does not apply to British specimens.

subsp. *thulei* Staudinger. Iris 1891. 4. p. 266.

The subspecies from Shetland.

Staudinger says "Far darker than *festiva* and also the Alpine and Northern var. *conflua* Tr. Forewings dark chestnut-brown to black-brown, the lighter transverse markings becoming weak in the outer part; the two upper stigmata are, for the most part, somewhat lighter and sometimes separated by a deep black spot; a second smaller spot stands before the orbicular. Hindwings also far darker grey-black than in *festiva* and *conflua*. Smaller than typical *festiva* and larger than most *conflua*."

The following aberrations are described under the subsp. *thulei* Stgr.

ab. *primuloides* By.-Salz. Ent. Rec. 1939. 51. p. 33.

Ground colour yellow-ochreous but with a dull shade as in *primulae* Esp. Designs less conspicuous and not so reddish; spots before and behind the orbicular black. This form may be considered a very light *thulei* Stgr. Unst.

ab. *rufobsoleta* By.-Salz. Ent. Rec. 1939. 51. p. 33.

Bright red chestnut-brown; base, middle shade and marginal area sometimes darker. In most specimens lighter transverse lines present; reniform of the same colour as the ground, rarely somewhat lighter. Shetlands.

ab. *hethlandica* By.-Salz. Ent. Rec. 1939. 51. p. 33.

This is the same form as the preceding but with dark marks before and behind the orbicular. The reniform and sometimes also the orbicular are often lighter than the ground colour.

ab. *obsoleta* Tutt. Brit. Noct. 1892. 2. p. 123.

Like *borealis* the greyish brown form of *conflua* but somewhat paler in ground colour and without the dark quadrate spot between the stigmata, the latter still paler than the ground, the transverse lines as in *borealis*.
Tutt took *borealis* for the Shetland subspecies, it therefore is an ab. of *thulei*.

ab. *maculata* By.-Salz. Ent. Rec. 1939. 5I. p. 34.

As in *thulei* Stgr. but the orbicular surrounded with light ochraceous and the reniform entirely ochreous. Submarginal line in the ♂ obsolete, in the ♀ rather distinct. Shetlands.

ab. *glabrina* By.-Salz. Ent. Rec. 1939. 5I. p. 34.

The most beautiful form of all. Ground colour as in *thulei* Stgr., basal line, ante and postmedial lines light ochreous, very distinct. Submarginal line and marginal area ochreous with dark longitudinal streaks along the veins, the fringes dark. Reniform and orbicular light ochreous the latter with darker centre, the end of the claviform distinct black. Resembles somewhat *C. vaccinii* ab. *glabroides* Fuchs. Shetland

ab. *rufonigra* By.-Salz. Ent. Rec. 1939. 5I. p. 34.

Ground colour very dark chocolate; surroundings of orbicular, reniform and marginal area slightly lighter. Black marks before and behind the orbicular. This is the darkest f. *hethlandica* in which the forewing is entirely suffused with black. Shetland.

ab. *unicolor* By.-Salz. ent. Rec. 1939. 5I. p. 34

Ground colour a very dark sepia, all the lines slightly lighter, maculae obsolete, black spots absent.. Unst.

ab. *nigra* By.-Salz. Ent. Rec. 1939. 5I. p. 34.

Ground colour an almost black sepia, maculae very slightly lighter, spots before and behind the orbicular and end of the claviform black, not very contrasting. Shetlands. abs. *unicolor* and *nigra* are the extreme dark forms of ab. *obsoleta* Tutt, and f. *thulei* Stgr. in which the brown colour is entirely suffused with black.

ab. *nigrostriata* By.-Salz. Ent. Rec. 1939. 5I. pp. 34.

Colour and markings as ab. *hethlandica* but with black streaks on the veins. Vein I black almost to the base, veins 2-4 black to the cell, 5-9 only to the submarginal line. Shetlands.

dahlia Hbn. typical form - Ground colour yellowish-brown, the markings distinct. Female darker brown especially the inner marginal area.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 114.

Forewings deep reddish-brown frequently tinged with purple with the central area not distinctly mottled but with well-marked stigmata.

ab. candelisequa Stephens. Ill. Haust. 1829. 2. p. 132.

Forewings griseus with a glaucous hue and several black transverse strigae and a broad middle shadow, before the margin a slightly waved pale yellowish-brown striga; a minute black spot in place of the claviform. Hindwings dusky ash with pale rufescent cilia.

ab. perfusca Kane. Entom. 1895. 28. p. 217.

= fusca Lenz. Schmett. Sudbayern 1927. p. 239.

Unicolorous dark sepia, the only marking being a very clear whitish reniform preceded by a darker blotch representing a vestige of the median band, in some instances a pale dotted antemarginal waved line. Some examples are wholly unicolorous, while others show only a trace of the pale reniform, and others only with its outline represented.

ab. bicolor Oberthur in Culot. Noct. 1910. I. p. 48 pl. 7 f. II.

Ground colour of the figure is brownish violet. The character of the form is the contrasting yellowish-grey of the stigmata and wavy subterminal which stand out conspicuously. The description is given before the name, Turner completely missed this and gives details regarding primulae which contain no description.

ab. signata Strand. Festschrift 1937. 3. p. 563

Forewings yellow-brown, the inner margin somewhat darkened as much as in the typical form, thus the yellow-brown ground is here somewhat more striking. The character of the new form is the outer third of the wing between the outer transverse line and the margin. To the outer transverse line there follows next a narrow band of the ground colour which is finished off by a soft waved blackish streak about $1\frac{1}{2}$ mm. wide. This goes to the inner margin but is abruptly cut off before the costa. In this streak lie the pale nervures. The area up to the waved line is again yellow-brown. The waved line itself is again outwardly very strongly dark shaded so that a deep contrast in markings arises.

ab. nyx Strand. Festschrift 1937. 3. p. 564.

The forewings have almost completely lost their marking, but the hindwings are darker than normal.

ab. accentifer Strand. Festschrift 1937. 3. p. 564.

Only observed in the ♀. From the spot-like sagittate stigma arises a yellowish streak about 2 mm. long which reaches up to the inner transverse line. It has the same colour as that which often forms the filling of the reniform.

This presumably means a light streak from the black spot which represent the claviform in this species travelling obliquely upwards to the antemedian line.

ab. griseopulverata Strand. Festschrift 1937. 3. p.

Only observed in the ♀. Characterised by the very grey general suffusion which occurs on the whole inner half of the forewings. Placed against the dark central shade, the deep brown colour stands out strongly. Behind the outer transverse line there is a narrow band of very grey tone, like the area between the waved line and the margin. Here in this form there is developed a strong contrast of colour.

Noct. 23.
p. I.

Diarsia Hbn.

rubi View. aberrational forms etc.

rubi View. typical form - -the ground colour reddish cinnamon-brown.

ab. quadratum Hubner. Samml. Eur. Schmett. 1809-13. pl. 101 f. 477.

The figure shows the ground colour pale reddish-brown, dark pink would better describe it. Apparently the form we get in Britain in the Spring but colours in these old works are not to be relied on. Most authors make it a colour aberration but it is little more than a synonym of the type, in my opinion. This also applies to radica Esper. Eur. Schmett. 1790. 4. p. 497 pl. 151 f. 4.

ab. grisea Pfau. Abh. und Berichte Pommersche Naturf. Ges. 1928. 9. p. 237.
Ground colour of the forewings grey.

ab. fasciata Meves. Ent. Tidskr. 1914. 35 p. 19.

The first transverse line of the forewing strongly dark-shadowed, the middle shadow-line strongly developed, the second transverse line bordered by a black-brown band towards the fringes, the undulate line light, the fringe-field is dark. By this the form has four dark stripes on a lighter ground.

ab. obsoleta Lempke. Tijdschr. Ent. 1939. 82. p. 244.

Forewings unicolorous without trace of spots, only the subterminal faintly visible.

ab. confluens Lempke. Tijdschr. Ent. 1939. 82. p. 244. (description p. 197)

The orbicular and reniform joined but their contours remain distinct.

ab. semiconfluens Cockayne. Ent. Rec. 1952. 64. p. 129 .

The posterior or inner-marginal ends of the orbicular and reniform are united . The Type is in the R.-C.-K. coll. in Brit. Museum; the stigmata are joined by a short double line so the form is not the same as the preceding.

ab. xanthostaxis Lempke. Tijdschr. Ent. 1939. 82. p. 244.

The orbicular, reniform and claviform yellowish, sharply contrasting with the ground colour.

ab. floridoides Dannehl. Ent. Z. 1925. 39. p. 123.

Large light variegated examples such as pass for florida Schmidt. If these are not the true good species florida this rubi variety requires another name: floridoides.

ab. borealis Lingonblad. Lamb. 1936. 36. p. 239. (1936) 1936/6/1

Much darker than the typical form, deep grey-brown without the least shade of reddish; they are a little smaller with somewhat slighter wings and with the transverse lines very indistinct.

Described from Lapland as an aberration but possibly racial.

Noct.24.
p. I.

Diarsia Hbn.
florida Schmidt.

aberrational forms etc.

ab. gerontion Schultz. Int. Ent. Z. 1934. 28. p. 419.
Pale brownish-rose ground colour.

ab. flava S. Walker. Ent. Rec. 1902. 14 p. 171.
Forewings rich chrome-yellow; some with an orange tint on costa, the stigma and transverse lines rather indistinct; the quadrate spot pale rosy, the fringes yellow. Thorax and body yellow, hindwings greyish-yellow.

ab. ochracea S. Walker. Ent. Rec. 1902. 14 p. 172.
Forewings dull buff, with stigma clearly outlined, transverse lines distinct, the quadrate spot reddish-brown. Hindwings greyish-yellow, the fringes paler.

florida Schmidt. Stett. Ent. Z. 1859. 20. p. 46.
The description of the typical form is given below since there is much argument as to its specific status - -
Head, neck and thorax brown, the abdomen above more dull coloured, below towards the sides the hairing and anal tuft in the male rose reddish, feet white-ringed, antennae brownish, in the male of a pink tinge. Ground colour of the forewings of a uniform bright yellow-brown, all the markings distinct. The first (halved) and second (complete) transverse lines on their outer side are darker bordered than on their inner side, as is the first complete line on its inner side. The area from the less waved subterminal to the rose-reddish fringes as well as the costa of the third area or field, darker (reddish) brown in which the veins are visible as fine blackish streaks. The middle shadow very weak, the usual stigmata paler than the ground, the reniform shining brown, indented on its outer side, the orbicular with lower part darker, the area between them dark brown. The claviform apex coloured blackish like the others. Hindwings in both sexes pale earth-brown, darker in the marginal area with blackish middle-moon and rose-reddish fringes.

I have collected this insect at Askham Bog, the locality which produced the yellow aberrations (which certainly are not rubi) but all specimens obtained were more of a rosy-brown than a "yellow-brown" the colour mentioned by Schmidt, it is possible therefore that we do not get the typical form in Britain, ours belonging to ab. gerontion Schultz.

plecta L. typical form - - the ground colour brown-red.

ab. *anderssoni* Lampa. Ent. Tidskr. 1885. 6. p. 54.
The ground colour violet-black or blackish-purple.

ab. *rubricosta* Fuchs. Jahrb. Nass. Ver. 1900. 53. p. 216.
The costa of the forewings widely purple red, instead of whitish-yellow, the colour of the rest of the wing normal.

ab. *fuscicosta* Hirschke^k. Verh. zool.-bot. Ges. Wien. 1910. 60. p. 413.
Lacks the characteristic broad whitish costal streak, in this specimen only a short whitish basal trace remains.
Lempke makes this a synonym of the preceding which has no whitish yellow left (showing) of the original or normal pale costal streak.

ab. *unimacula* Staudinger. Stett. Ent. Z. 1859. 20. p. 213. (Cat. 1871 Ed. 2. p. 84)
The ground colour reddish chestnut-brown, with the orbicular completely absent.

ab. *strigata* Hirschke. Verh. zool.-bot. Ges. Wien. 1910. 60. p. 413.
A distinct transverse line borders the central area of the forewing on its outer side, slightly bowed and running from the costa to the inner margin. In the marginal area on the costa a triangular dark spot shows clearly, just as the marginal spot on the limbal line. The dark basal streak is very distinct and reaches the transverse line, in this streak the stigmata stand out clearly. On the hindwing the costa is less darkened than in the typical form.

ab. *plectella* Strand. Arch. Naturg. 1915. 81. 112. p. 145.
Forewing with the costal area purple but on the subcostal and median veins, white streaks.

ab. *albilinea* Lempke. Tijdschr. Ent. 1939. 82. p. 231.
Forewings with a sharply contrasting white subterminal line.

ab. *pallida* Lempke. Tijdschr. Ent. 1939. 82. p. 231.
The entire basal half of the forewings whitish to beyond the reniform spot. In this whitish area are the stigmata, the black basal streak and a stripe of ground colour beneath the median cell.

ab. *fasciolata* Heinrich. Dtsch. Ent. Z. 1916. p. 512. pl. 4 f. 9.
On the hindwings about 3mm. from the margin the veins are powdered with black from 2-3mm, giving the impression of an uninterrupted band from the costa nearly to the anal angle, running parallel with the margin.
The figure is very bad, hardly showing even a line on the hindwings.

ab. *mucidata* Dannehl. Ent. Z. 1925. 39. p. 128.
Specimens in which the stigmata are completely wanting, the costal marginal streak broadened to cover the location of the stigmata and extending very pale to the outer margin thus appearing dull yellow. Hindwings yellow-grey with a more apparent row of dots across the distal area.

? *ignota* Swinh. P. Z. S. 1889. p. 411.
Both Turner and Lempke include this form from Ceylon as occurring in Britain and Holland respectively. Lempke makes it a mere colour form with the ground colour pale red, probably from Warren's description in Seitz which is completely misleading. The main character of the form is the absence of the black in the cell, it is not likely to be an aberration in Britain or Holland.

Noct. 26.
p. I.

Anathes Hbn.

glareosa Esper. aberrational forms etc.
Eur. Schm. 1788. 4. p. 387 pl. 128 f. 3.
= hebraica Hubner. Samml. Eur. Schm. 1818-22. pl. 140 f. 542
= i-geminum Duponchel. Hist. Nat. 1826. 6. p. 80 pl. 77 f. 6.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 108.

Forewings with the ground colour a beautiful lilac-grey, tinted all over with beautiful rose colour.

ab. griseonigra G. Smith. Ent. Rec. 1954. 66. p. 97. pl. 3 f. 9.

The ground colour darker grey than the typical form, the hindwing smoky. Described from Llangollen, Wales.

ab. limbata Gouin. Actes. Soc. Linn. Bordeaux 1900. 74. p. 67.

The forewings with a wide black margin.

ab. hebraicoides Gregson. Young Nat. 1888 p. 21.

The ground colour dark cold brown, making the costal spots appear less distinctly defined and the margins of the stigmata more so.

This form would seem to be the same as edda Stgr. from the Shetlands but since the locality is not given it cannot be used for this northern form with any certainty.

subsp. edda Staudinger. Iris 1891. 4. p. 266.

= suffusa Tutt. Brit. Noct. 1892. 2. p. 108.

The dark race from the Shetlands.

Forewings dark brown-black with white transverse lines and slightly developed stigmata margined on the inner side with deep velvety black. Hindwings greyish-black instead of whitish-grey.

? decempunctata de Vill. Linn. Ent. 1789. 2. p. 273 pl. 5 f. 17.

The figure is unlike glareosa and the description of little use.

Warren in Seitz makes it a synonym of the type form and Turner in his Brit. Noct. merely lists it with no comment. It is best to avoid the use of the name.

depuncta Linn. typical form - the ground colour slaty-grey.

ab.mendosa Hubner. Samml.Eur.Schmett.1800-03.pl.26 f.120. (not 502)

The figure shows the forewings greyish yellowish brown. This agrees with most of our British specimens, one cannot tie them down to the colour of such inexact figures. Tutt and Turner seem to have got the two mendosa forms figured by Hubner the wrong way round. Tutt says he thinks fig.120 is highly coloured and meant to represent particularly red specimens of our more ochreous and reddish form. This description applies to fig.502 of which he says "the ground colour a deep brownish-ochreous, hindwings grey with a distinct lunule". There is no lunule showing in fig.502. and the brownish-ochreous ground applies to fig.120. Turner has copied this and says "Forres specimens are more ochreous slaty-grey and very like the fig.502 var.mendosa Hubner, to which they may be referred. This quite wrong, they should be referred to fig.120.

ab.mendosa Hubner. Samml.Eur.Schmett.1808-18 pl.107 f.502. (not f.120)

This figure is very bright yellowish-brown with reddish suffusion in the median area, unlike any British depuncta and most probably an exaggeration on the part of the artist. Since the name mendosa is used for the first of Hubner's figures it cannot be used for this.

ab.maddisoni Newman. Proc.S.Lond.Ent.& Nat.Hist.Soc.1923-24. (1923)p.93.

Newman merely says "A fine heavily marked specimens of var.maddisoni." Turner gives a fuller description in Ent.Rec.50.Suppl.p.(160)1938 by Cockayne. "Base, median area and stigmata thickly peppered with blackish-brown scales; usual markings accentuated; marginal area lightly peppered with blackish scales; nervures blackened; oblique line of black hairs through tegulae.

ab.obscura Clayhills. Not.Ent.1927.7.p.83

The colour of the discal area is as dark as the deep black spots on the proximal transverse lines of the typical form; the basal area somewhat lighter as also is the marginal area, where the black veins are emphasised. The transverse lines are double and pale grey-brown. The margins of the stigmata are of the same colour but the waved line is somewhat darker. Hindwings dark brown-grey.

ab.arenoflavida Schawerda. Int.Ent.Z.1934.28.p.425 pl.- f.3.

Wholly light sand-yellow and without markings except the basal and post-basal black spots and on the costa a few pre-apical minute dots. The postmedian and pre-marginal transverse bands are obsolescent, the transverse row of very fine black points standing normally between the latter is scarcely visible, the reniform hardly visible. Hindwings pure white.

ab.obsolescens Cockayne. Ent.Rec.1952,64,p.129,pl.5 f.4.

Forewings pale greyish-ochreous, the two black dots at the base and the three bordering the antemedian line present; the reniform and orbicular faintly marked and with no dark mark between them; the median shade and postmedian line absent; the subterminal line present and the row of dots internal to it, and from these dots to the termen the nervures are darkened.

Noct. 28.

Amathes Hbn.

p. I.

agathina Dup. aberrational forms etc.
= *albimacula* Stephens.

agathina Dup. typical form - The ground colour reddish-grey, the colour of wine-dregs. The figure of Stephens *albimacula* agrees with Duponchel's *agathina*.

ab. leucographa Stephens. Ill. Haust. 1829. 2. p. 199.

Forewings reddish-brown, varied with white and ochraceous yellow, with fine purplish or coppery shades, markings normal. Hindwings ochreous-white with central lunule and two transverse strigae fuscous.

Stephens thought this form to be *Gypsitea leucographa* Hbn. and cites his (Hubner's) fig. 572. There seems no doubt that it is a reddish-brown form of *agathina*.

ab. rosea Tutt. Brit. Noct. 1892. 2. p. 59.

Forewings of a bright rosy tinge, markings normal.

? *ab. scopariae* Milliere. Icon. 1864. 2. p. 151. pl. 67 f. 10.

This form is not the melanic one which occurs in N. England and Scotland since it has no trace of the usual band and line on the hindwing which is stressed in both the description and figure. It is probably racial in France.

? *ab. provincialis* Culot. (Guenee.) Noct. 1909-13. I. p. 39 pl. 6 f. 8.

Also racial in France differing from the preceding only in its small size, it lacks the banding on the hindwing which our British specimens always display, this British form is *ab. infuscata* Culot. (Guenee.)

ab. infuscata Culot. (Guenee.) Noct. 1909-13. I. p. 40. pl. 6 f. 9.

The melanic form occurring in N. England and Scotland. Guenee's specimen was from Scotland.

Forewings very dark, almost black with some clearer spaces reddish. Distinguished from the preceding by the hindwings which are crossed by a distinct, band very visible on the paler ground. The description entirely agrees with our British form.

subsp. *hebridicola* Staudinger. Cat. Ed. 3. 1901. p. 138. (fig'd Culot. Noct. I. pl. 6 f. 10)
The race from Hebrides. Pale greyish, almost without reddish tint.

ab. cingulata Loritz. Entom. 1947. 80. pl. 2 f. I. p. 145.

Forewings with the pale band extending from the base two thirds along the costa continuing, to surround the reniform stigma in a broad pale girdle and touching the inner margin some millimetres from the hinder angle. A light patch present near the base. The ground colour is dark grey, not reddish as is normal. Hindwings much lighter than normal.

ab. virgata Wightman. Ent. Rec. 1945. 57. p. 47.

Ground colour pale pink tinged with whitish-grey, the usual markings just discernible in darker grey. The whole area between the inner and outer lines is dull-grey, except along the costa which is wholly of the pale ground colour. This deeper grey colour is confined to the central fascia and does not spread out beyond these lines. The orbicular is present as a mere dull white pin-point, the reniform normal.

alpicola Zett. aberrational forms etc.
= hyperborea Zett.

alpicola Zett. typical form - Ground colour ashy, the markings more or less distinct.

ab. ? carnica Hering. Stett. Ent. Z. 1846 p. 236.

In colour resembling agathina, in markings obelisca. In both sexes there is a shading of copper-reddish, in the ♀ sometimes mixed with grey, sometimes dark yellowish-brown. Hindwings reddish-grey, with a darker shade towards the light fringe. Tutt makes this the form not uncommon in Scotland and the description certainly fits the rufous examples found at Rannoch. There seems to be no other name for this richly marked form which is very different from the Type of alpina Humph. & Westwood (see below) so it can be used for all examples with predominating coppery shade but without the clear ashy colour of ab. coerulescens Tutt.

ab. ? glacialis H.-Sch. Syst. Bearb. 1849. 2. p. 198 pl. 82 f. 42I.

Staudinger refers it to carnica Hering, the preceding, quite wrongly since H.-Sch. gave the name to cover a very variable species and not one form. If however the first fig. 42I is taken as glacialis it is much paler than carnica and has no cuneiform spots in the margin.

ab. aquilonaris Zett. Ins. Lap. 1840. p. 940.

Greyish, brown suffused, the ordinary stigmata obsolete, a marginal row of black spots. This may well occur as an aberration in our British race.

subsp. alpina Humphrey & Westwood. Brit. Moths. 1843. I. p. 118. pl. 23 f. 13.

The earliest name for our British race. The type is in the R.-C.-K. coll. at Tring but is not like most forms being paler, grey-buff, and lacking the usual rufous tinge; it was collected on Cairn Gowr, Perthshire.

ab. coerulescens Tutt. Brit. Noct. 1892. 2. p. 87.

Tutt names the figure in Herrich-Schäffer's Syst. Bearb. pl. 82 fig. 424 (the third figure called glacialis, all three being different) and says it is the same as the form commonly seen in collections in England, Herrich-Schäffer's figure must be very exaggerated since the blue ground is far too bright for anything occurring in Britain.

Tutt's description of his coerulescens is - "Probably the most beautiful form of all. Rich red-brown with all the markings of a clear ashy or slaty colour, showing up distinctly the transverse lines and stigmata. The series of cuneiform spots distinct, well marked in intense blackish, with lineolae extending from the outer side of reniform.

ab. uniformis Cockayne. Ent. Rec. 1952. 64. p. 130.

There is a complete absence of the usual black or blackish-brown markings on the forewing. These are replaced by rufous or in some cases the rufous scales are mixed with dark brown ones; the row of black marginal dots remains.

ab. rufistigma Cockayne. Ent. Rec. 1952. 64. p. 130 pl. 5 f. 6.

Ground colour of the forewing uniform blackish-brown with the following markings visible, blackish postmedian and subterminal lines, a black mark between the reniform and orbicular, two oblique black lines internal to the orbicular, and a broad black stripe running from the base to the termen and lying just below the median nervure and nervure 2; the reniform and orbicular stigmata are pale rust colour and contrast strongly with the dark ground.

ab. suffusa Richardson. Ent. Rec. 1952. 64. p. 270 & 272 pl. II f. 22.

Forewings, hindwings, thorax and abdomen all coloured blackish-brown, through which the usual markings are faintly visible on the forewings, especially the pale ante and postmedian lines, a row of marginal white dots, and a basal line extending across the costal half of the wing. The dark colour has faded considerably since emergence.

Noct. 30.
p. I.

Anathes Hbn.

ashworthii Dbl. aberrational forms etc.
= vallesiaca Stainton (nec. H.-Sch.) Ent. Ann. 1855. p. 41.

ab. virgata Tutt. Brit. Noct. 1892. 2. p. 78.

Forewings with the central shade extending from costa to the inner margin and enclosing the orbicular stigma. The transverse shade then coalesces with the quadrate spot between the stigmata (characteristic of ashworthii) and forms a blackish-brown band extending to the complete basal line. The subterminal is generally well developed in the banded form.

ab. vallesiaca Stainton. in Tutt Brit. Noct. 2 p. 77. = ashworthii Dbl.

This is obviously a synonym of the typical ashworthii which Stainton thought was the same as the vallesiaca Herrich-Schäffer Syst. Bearb. 2 pl. 17 f. 80. a Continental species. Tutt separates it as an aberration which shows no black quadrate spot between the stigmata, with no grounds for doing so since Stainton mentions no such character, merely saying the species had been collected by several colleagues in Wales at the end of July. It is therefore not an aberration.

ab. substriata Mansbridge. Proc. Lancs. & Cheshire Ent. Soc. 1906. 30 p. 47.
Entom. 1907. 40 p. 22.

The melanic form.

Noct. 3I.
p. I.

Amathes. Hbn.

castanea Esper.

aberrational forms etc.

ab. neglecta Hubner. Samml. Eur. Schmett. 1800. pl. 34 f. 160.
Forewings dull grey, transverse lines and stigmata distinct.

castanea Esper. typical form - - Ground colour unicolorous bright red.

ab. laevis Haworth. Lep. Brit. 1809. p. 207.
Ground colour reddish-grey, the markings almost obsolete. The fringes of the forewing dirty reddish, those of the hindwing paler.
The form would seem to be intermediate between the typical red form and neglecta.

ab. cerasina Freyer. Neu Beitr. 1842. 4. p. 38. pl. 312.
The ground colour wine-red or violet-brown without markings, except for a pale weakly marked subterminal.
Tutt for no apparent reason says this is the same as the preceding laevis Haw. the figure and description are of a far darker form which must be rare in Britain.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 105.
Ground colour pale whitish-ochreous, with the reniform and orbicular outlined in red; the subterminal is composed of a series of red dots; otherwise unicolorous without any other transverse lines.

ab. xanthe Woodforde. Ent. Mon. Mag. 1901. 37 p. 116.
The ground colour rich yellow, approaching that of mustard, darker towards the base paling off a little towards the outer and inner margins.

ab. albidula Cockayne. Ent. Rec. 1952. 64. p. 129 .
Forewing greyish-white, entirely without markings, the reniform only just visible.

ab. subrubra Dannehl. Ent. Z. 1925. 39. p. 122.
Examples of neglecta with a strong reddish suffusion which is not confined to the base. Dannehl says these are not the same as laevis Haworth.
The form would seem to be extremely like laevis but possibly less tinted with red.

ab. glaucoptera Schultz. Int. Ent. Z. 1930. 24. p. 169.
Fore and hindwings whitish-grey, the lines and stigmata just visible, the lower part of the reniform somewhat darker.

ab. syriacae Strand. Arch. Naturg. 1915. 81. A 12. p. 145.
Hindwings white with a dark marginal area.

ab. signata Lempke. Tijdschr. Ent. 1939. 82. p. 250.
The subterminal line bordered with black on its inner side.

ab. fumosa Meves. Ent. Tidskr. 1914. 35. p. 18.
All wings dark sooty-grey; the forewings with extremely indistinct black transverse lines and surround to the reniform, and only very weak traces of a paler subterminal line. (From the German translation on p. 41.)

baja Schiff.
= tricomma Esp.

aberrational forms etc.

baja Schiff. typical form -- the ground colour red-brown.

ab. grisea Tutt. Brit. Noct. 1892. 2. p. 106.

Forewings pale greyish-fuscous, sometimes with a slight ochreous tinge, the markings vary as in the type form.

ab. coerulescens Tutt. Brit. Noct. 1892. 2. p. 106.

The form has the ground colour of the type with a distinct slaty tinge which is very noticeable in the basal and subcostal areas.

ab. purourea Tutt. Brit. Noct. 1892. 2. p. 106.

The red ground tinted with a beautiful purplish or plum colour and not of the ferrugineous shade as in the type and hence has a much richer appearance than any of the other forms, reminding one of the lovely violet or purple tinge seen in some specimens of brunnea.

ab. punctata Aurivil Nord. Fjar. 1888. p. 115.

The transverse lines along their length with black dot-like spots on the inside.

ab. immaculata Hoffmann Ent. Z. 1910. 23. p. 223.

The black wedge-shaped spot in the apex of the forewings is completely absent.

ab. cinigera Filipj. Ann. Mus. Zool. U. R. S. S. 1927. 28. p. 237.

Wholly uniformly bluish-grey in colour, coerulescens Tutt has only the basal and subcostal areas tinged with slaty.

Possibly confined to Siberia, one ♂ from Sidemi.

ab. monachi Meves. Ent. Tidskr. 1914. 35. p. 19.

Forewings almost unicolorous, dark brown-grey, markings virtually absent, there are only 3 black spots where the subterminal starts and other small spots at the start of the transverse line, dark patch in reniform partly visible.

ab. clausa Lempke. Tijdschr. Ent. 1939. 82. p. 245 (description p. 197)

The first and second transverse lines join at the inner margin.

ab. xysti Meves. Ent. Tidskr. 1914. 35. p. 19.

Remarkable on account of the unusual appearance of the external transverse line; the usual double line joins up at one end to form a continuous band of black crescent-shaped marks, the ground colour as in coerulescens Tutt.

Noct. 33.
n. I.

Amathes Hbn.

c-nigrum Linn. aberrational forms etc.
= nunatrum Esper. Eur. Schmett. 1782. 3. p. 385. pl. 76 f. 3.
= singularis Esper. Eur. Schmett. 1782. 3. pl. 76 f. 3.

ab. suffusa Tutt. Brit. Noct. 1892. 2. p. III.

Of a deep violet black, the pale costal blotch of a reddish flesh-colour, hindwings dark greyish-black as in ditrapezium.

ab. rosea Tutt. Brit. Noct. 1892. 2. p. III.

Of a clear testaceous slightly rosy, with the cellular spots between the stigmata and the spot at the base the only black markings, the subterminal line spotted, blackish, distinct.

ab. umbrata Schultz. Soc. Ent. 1908. 22. p. 185.

= depravata Bang-Haas. Iris 1912. 26 p. 139.

Ground colour so darkened that the characteristic costal markings scarcely stand out from the more dusky ground.

In depravata the costa in the central area is conspicuously dark, thereby showing up the reniform. The colour of the forewing is dull black, a little glossy but somewhat of a coppery tint.

The two forms are hardly different enough to separate.

ab. maerens Dannehl. Ent. 2. 1925. 39. p. 123.

Extreme examples show a smooth unicolorous violet-black tone, only the costal blotch paler as is also the inner half of the reniform, a small black spot at the base and the small costal spot, are visible.

The form is very close to the preceding but possibly shows the costal markings paler.

ab. nigrescens Buresch. Trans. Soc. Bulg. Sci. Nat. 1915. 7. p. 100.

A melanic form with perfectly black forewings. Of the usual light costal mark there is only a spot lying between the black but ill-expressed C-mark. Also the hindwings along the margin are strongly black.

ab. fritschi Culot. Noct. 1909-12. I. p. 45 pl. 7 f. 4.

Remarkable on account of the clear space in the middle of the forewings. The figure shows two small black spots only, in place of the normal black C-mark they are not connected but stand out in the straw coloured costal blotch. I have taken this form at Tring, more often than not it is asymmetrical.

ab. grisea Turner. Ent. Rec. 1939. 51. Suppl. p. (165)

Thorax and forewings pale grey with the usual black markings a slightly darker brownish-grey. Hindwings and abdomen nearly white.

ab. albinotica Cockayne. Ent. Rec. 1952. 64. p. 130 pl. 5 f. 5.

There is a complete absence of black pigment. Head, thorax, and abdomen very pale grey, forewings pale blue-grey, in the ♂ flushed with a slight rosy hue in the median area, along the costa and in the posterior part of the wing, the stigmata, and the usual conspicuous black mark touching them, are absent.

ab. immaculata Lempke. Tijdschr. Ent. 1939. 82 p. 247.

The dark apical mark of the forewings is absent.

ab. juncta Lempke. Tijdschr. Ent. 1939. 82 p. 247. (description p. 197)

The orbicular and reniform join together.

ab. confluens Lempke. Tijdschr. Ent. 1939. 82. p. 247. (description p. 197)

Instead of joining the the stigmata are united by a double line.

Noct. 33.
p. 2.

c-nigrum Linn. continued.

Noct. 34.
p. I.

Amathes Hbn.

- ditrapezium Schiff. 1775. Wien. Verz. p. 312.
- = ditrapezium Borkh. 1792. Naturg. 4. p. 515.
- = sigma Godart. ♀ 1824 Hist. Nat. 5. pl. 61. f. 3. (♂ pl. 60 ?)
- = tristigma Tr. 1825. Schm. Eur. 5 (1). p. 243.

aberrational forms etc.

ab. pallida Hoffmann. Schm. Stierm. 1914 p. 349.

Light examples like the ab. rosea Tutt of c-nigrum. The form has a great similarity with A. triangulum.

ab. signata Lempke. Tijdschr. Ent. 1939. 82. p. 248.

The subterminal line is bordered internally with a dark line.

triangulum Hufn. Berl. Mag. 1766. 3. p. 306.
= sigma Borkh. Naturg. 1792. 4. p. 489.
= sigma Hbn. Samml. Eur. Schmett. 1809-13. pl. 106 f. 497 (nec. f. 122)

aberrational forms etc.

triangulum Hufn. typical form - - the ground colour reddish-yellow or brown.

ab. intermedia Tutt. Brit. Noct. 1892. 2. p. 110.

= sigma Haworth. Lep. Brit. 1809. p. 225. (nec. Hubner.)

Tutt renames the sigma of Haworth since it is greyish purple, whilst Hubner's sigma is (according to Tutt) the palest of the forms - pale grey with no trace of red. I agree with Turner that this is by no means the case, in his copy of Hubner it is a dark insect, in ours at Tring yellow-brown with very dark hindwings, it shows how unsafe it is to rely on these old works when describing colours. Tutt describes his intermedia as intermediate between the red type and the pale sigma of Hubner but gives no actual shade. It would appear to be greyish-purple with only a slight reddish tint, since Haworth merely says "griseo-purpurascens." Tutt says it is the commonest form in Britain.

sigma Hubner. Tutt has separated this form from the type because in his opinion the figure shows a very pale insect. This is not so in our copy of Hubner so it is made a synonym of the type.

ab. avellanea Hirschke. Verh. zool. bot. Ges. Wien. 1910. 60. p. 413.

The ground colour of the upperside of the forewings and fringes is a beautiful light colour instead of yellowish-brown with purple reddish mixture, markings normal, standing out more strongly than in the typical form. Also the colour of the upperside of the hindwings, as well as that of the underside of all wings is lighter than typical.

ab. obscurior Salzl. Mitt. Munch. Ent. Ges. 1928. 18. p. 62.

The ground colour chocolate; the dark shade and light areas on the costa and hindwings in a striking way resemble *A. stigmatica* Hbn., it is distinguished from this by the well known long black streak by which the orbicular and reniform are united and by the outer wavy line, which is almost obsolete and not so toothed as in *stigmatica*.

ab. immaculata Lempke. Tijdschr. Ent. 1939. 82. p. 247.

The black mark or spot at the apex of the forewings is absent.

ab. signata Lempke. Tijdschr. Ent. 1939. 82. p. 247.

The subterminal line on the forewing is bordered internally with black.

ab. unimaculata Chalmers-Hunt. Entom. 1961. 94. p. 281. pl. 7 f. 10.

In the discal cell of the forewing the first dark mark is completely absent and the second one somewhat reduced. The cross-lines are all rather more strongly emphasised. The combination of these characters gives the moth a very different appearance from normal *triangulum*.

Noct. 36.
p. I.

Amathes Hbn.
= ~~stigmatica~~ Hbn.
= rhomboidea Tr.

aberrational forms etc.

ab. tristigma Stephens. Ill. Haust. 1829. p. 132.

Deep fuscous brown.

The figure of the type form in Hubner's Samml. Eur. Schmett. pl. 100 f. 470-71 shows much more red than Stephens description of tristigma so the latter is treated as an aberration. Hubner's figures are so bad that it, tristigma, is merely a synonym of stigmatica.

ab. lalle Schultz. Int. Ent. Z. 1934. 28. p. 419.

Ground colour of the forewings violet-brown without reddish tinge, but the hindwings are darker, giving the insect, compared with the typical form, a very much more obscure appearance.

ab. stigmatula Ent. Rundsch. 1924. 41. p. 45.

The dark area between the orbicular and reniform stigmata is absent.

ab. pallida Turner. Ent. Rec. 1939. 51. Suppl. p. (168)

Ground colour paler than normal; the square spot between the stigmata obsolete; other markings present but pale; thorax and abdomen paler than usual.

Noct. 37.
p. I.

Amathes Hbn.

xanthographa Schiff.
= radica Esp.
= tetragona Haw.

aberrational forms etc.

xanthographa Schiff. - typical form - Tutt bases his colour forms on the conclusion that the typical form is dark greyish-fuscous. Lempke says it is dark red to chestnut-brown and makes ab. rufa Tutt a synonym. Warren in Seitz says dull brown. It is doubtful whether the exact shade of the type is known so we accept Tutt's dark greyish-fuscous.

ab. cohaesa Herrich-Schäffer. Syst. Bearb. 1845. 2. p. 209. pl. 20 figs. 95-97.
The ground colour yellow grey, the markings more or less normal.

ab. elutior Alpher Stett. Ent. Z. 1887. p. 168.
The ground colour pale cinnamon-brown, the reniform pale edged.

ab. rufescens Tutt. Brit. Noct. 1892. 2. p. 125.
The ground colour pale reddish, not of the decided red of ab. rufa Tutt but which have the red tint more pronounced than the pale grey cohaesa or the dark grey of the type.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 125.
The ground colour bright red. Also dark red specimens inclining to chestnut, the stigmata distinct but transverse lines generally more indistinct.

ab. obsoleta-rufa Tutt. Brit. Noct. 1892. 2. p. 126.
Bright red as in the preceding ab. rufa but with the stigmata and transverse lines quite obsolete, becoming unicolorous.

ab. obscura Tutt. Brit. Noct. 1892. 2. p. 125.
The ground colour dark reddish-black, the markings ill-defined but the stigmata clear and well marked. Hindwings deep blackish-grey.

ab. obsoleta-obscura Tutt. Brit. Noct. 1892. 2. p. 126.
The ground colour dark reddish-black as in the preceding ab. obscura but the stigmata and transverse lines are completely obsolete and merged into the ground colour.

ab. funerea Gauckler. Krancher's Ent. Jahrb. 1901. X. p. 153 (154?).
A very dark form, the ground colour of the forewings is a dark, almost black-brown with a suggestion of violet. All the marking is sharply defined, a blackish quadrate spot between the stigmata, the pale subterminal only slightly showing. In rare cases the black-brown forewing is crossed at the base and also in the marginal area by a paler curved band and the nervures in the central and marginal areas are blackish powdered and stand out.
Lempke makes this a synonym of obscura Tutt but there seems to be no red in this form.

ab. nigra Tutt. Brit. Noct. 1892. 2. p. 125, 126.
The ground colour blackish-grey. Tutt then says on the next page "as intensely black as, but without the red tinge of ab. obscura" We must therefore presume that the form can be intensely black as well as blackish-grey.

ab. budensis Freyer. Neu. Beitr. 1839. 3. p. 56. pl. 232 f. I.
Extremely large, the size of baja. Forewings black-grey, somewhat darker in the middle the usual bands obsolescent, distinct streaks on veins forming a band.
Very similar to nigra Tutt but Tutt by the name "nigra" obviously meant much darker examples.

ab. obsoleta-nigra Tutt. Brit. Noct. 1892. 2. p. 126.

Ground colour blackish-grey to black with the stigmata and transverse lines obliterated, producing a perfectly unicolorous form.

ab. unicolor Failla. Nat. Sic. 1888. 7. p. 271.

= *obsoleta* Tutt. (divided into colour forms) Brit. Noct. 1892. 2. p. 126

= *astixis* Dannehl. Ent. Z. 1925. 39. p. 123.

Unicolorous, without markings.

Tutt made three colour shades of his *obsoleta* which can stand as separate from others although actually they are covered by *unicolor* Failla.

ab. xanthostaxis Dannehl. Ent. Z. 1925. 39 p. 123.

In all shades of colour specimens in which the stigmata are completely filled in, appearing as clear yellow drops, these appear more noticeable especially when combined with such dark forms as *obscura* and *nigra*.

ab. marginemornata Dannehl. Ent. Z. 1933. 46. p. 246.

The antemarginal light band stretches out appreciably into the yellow colour of the stigma. The form can occur in all specimens but is naturally found more often in examples with strongly developed stigmata such as *ab. xanthostaxis* Dannehl

ab. pallidior Cockayne. Ent. Rec. 1946. 58. p. 73 pl. X f. 3.

Forewing very pale brownish-white with the usual markings faintly visible. Hindwing whitish with the marginal shade just visible.

ab. alba Cockayne. Ent. Rec. 1944. 56. p. 53.

The forewings, hindwings, thorax, abdomen and all other parts are white and without markings.

ab. signata Lempke. Tijdschr. Ent. 1939. 82. p. 249.

The subterminal line is internally bordered with black.

ab. semifasciata Richardson. Ent. Gaz. 1958. 9. p. 129. pl. 9 f. 10.

The terminal half of the forewing is darkened with fuscous through which the black nervures show clearly. The fuscous area ends just outside the orbicular and contrasts strongly with the clear red basal half. This is crossed by two wavy lines one near the base and the other just inside the orbicular. The nervures of the outer half of the hindwing are also darkened.

Noct. 38.
p. I.

Anathes. Hbn.

sexstrigata Haworth.
= *umbrosa* Hbn.

aberrational forms etc.

Noct. 39
p. I.

Axylia Hbn.

putris Linn. Faun. Suec. 1761. p. 315.
= subcorticalis Hufn. Berl. Mag. 1767. 3. p. 308.
= lignosa Hbn. Samml. Eur. Schmett. 1800-03 f. 245.

aberrational forms etc.

ab. juncta Lempke. Tijdschr. Ent. 1939. 82. p. 237. (description p. 197)
The orbicular and reniform united but retaining their contours.

ADDENDA 7.

Noct. 39.

A. putris Linn.

ab. brunnea Goater. Ent. Rec. 1969. 81. p. 27.
The ground colour of the forewings is warm reddish-brown, and the hindwings are smoky. Collar warm reddish-brown, remainder of thorax and abdomen dark grey-brown.

prasinus Schiff.
= herbida Schiff.
= herbida Hbn.
= egregia Esp.
= viridi-obscura Goeze.
= mixta Haw.

aberrational forms etc.

ab. jaspidea Borkhausen. Naturg. Eur. Schmett. 1792. 4. p. 440.
The light patch on the outward side of the reniform is absent.

ab. albinacula Hornuzaki. Ent. Nachr. 1894. 20. p. 53.
The ground colour pale grey, by which the green colour becomes strongly curtailed. The sharply defined patch on the outer side of the reniform is very striking and bright white, without green suffusion.

ab. pallida Tutt. Brit. Noct. 1892. 3. p. 65.
Forewings pale whitish-green. The pale patch outside the reniform is absorbed in the paler ground colour. This is the extreme pale form.

ab. viridior Spuler. Schmett. Eur. 1905. I. p. 164.
Sap-green (light green) instead of yellow-green.
Turner's translation is wrong, he says the form is yellow-green.

ab. olivacea Lenz in Osthelder Schmett. Sudbayern 1928. I. (2). p. 251. pl. 14 f. 4.
Pale yellowish.

ab. suffusa Tutt. Brit. Noct. 1892. 3. p. 65.
Forewings reddish-brown with a black area around and including the stigmata; a pale patch outside the reniform, the transverse lines complete and black, outlined with pale greyish.

ab. lugubris Petersen. Lep. Faun. Estland. 1902. p. 69.
Ground colour uniformly generally dark brown-grey, in which the greenish and whitish markings are scarcely to be noticed, so that the appearance is wholly unfamiliar.

ab. obscura Lenz in Osthelder Schmett. Sudbayern. 1928. I. (2) p. 252. pl. 14 f. 8.
"Dark". The figure shows the forewing very dark with only the costal half of the antemedian line and the pale patch outside the reniform showing up lighter.

ab. vittata Heinrich. Dtsch. Ent. Z. (1916) 1917. p. 514. pl. 4 f. 10.
= medionigra Lenz. in Osthelder Schmett. Sudbayern. 1928 p. 251 pl. 14 f. 4, 6 & 7.
The area between the ante and postmedian lines darkened unicolorous black-green forming a sharply margined distinct band.
medionigra by the figures is not so extreme, the darkening being more restricted not filling the whole area between the transverse lines. It can be separated as a transitional form if so desired.

ab. effusa Cockayne. Ent. Rec. 1952. 64. p. 130 pl. 5 f. 7.
Ground colour green, none of the usual markings are sharply defined, the stigmata both lack the usual sharp black outline and all blackish transverse lines are obsolete or nearly so except the subterminal, the nervures running from the row of black dots to the subterminal are marked with blackish scales.

ab. leucozona Cockayne. Ent. Rec. 1952. 64. p. 130 & 131. pl. 5 f. 8.

The pale area in the middle of the wing and the absence of black scales in and around the stigmata give this form a most unusual appearance giving the effect of a broad whitish transverse band proximal to the orbicular and another distal to the reniform. The ground colour is green, basal area dark brownish-green, ante and postmedian lines absent; A narrow dark green line runs from the costa to the orbicular and another from the reniform to the inner margin; the orbicular has a narrow black ring round it and a greenish central spot which is surrounded by whitish; the reniform has a very narrow black ring narrowest on the outer side and one greenish dot in the upper and another in the lower part; the subterminal is dark green with a blackish spot between 4 and 5; the subcostal and median nervures are white, nervures 3 and 4 are white and the space between them white or whitish as far out as the outer row of black dots internal to the subterminal; the ground between the dark basal area and the inner row of black specks external to the reniform is whitish-green.

ab. masseyi Cockayne. Ent. Rec. 1952. 64 p. 130 & 131 pl. 5 f. 9.

The insect has an unusual mottled appearance. The ground colour brownish-green with the usual lines distinct, the orbicular and reniform indistinct but between them is a black mark; the distal side of the reniform is whitish with a tinge of ochreous in the middle and the outer limit of the usual pale area external to the reniform is of the same colour forming a whitish-ochreous line, the space between these two lines is black crossed by two parallel whitish-ochreous longitudinal lines with a much narrower white one above and below.

ab. demuthi Richardson. Entom. 1958. 91. p. 211; pl. 4, f. 1 & 2.

The usual green markings on the forewings show through a black ground. Hindwings slightly darkened, with ochreous fringes.

The author says he bred a series of 35 specimens, which varied from very dark green to almost black, and that the darkest forms give a lovely effect when bred.

ab. *implicata* Lefebvre. Ann. Soc. Ent. Fr. 1836. 5. p. 394 pl. 10 f. 4.

There seems to be complete confusion over this form, starting with the author himself whose description does not agree at all with his figure. His description says the wings blackish with whitish transverse lines, the orbicular white. The figure shows a dull grey insect with no whitish lines or orbicular. Corti & Draudt in Seitz 3 Suppl. p. 87 say they have seen the type and it is not like *passetii* Th.-Mieg. the black form, but is a grey form with rather diffused markings which does not differ very much from the usual form. In view of this it is not advisable to use the name for our British forms.

ab. *extricata* Zetterstedt. Ins. Lap. 1840. n. 940.

Blackish-grey, varied with fuscous, the lines and marks on costa white. Generally accepted as the intermediate form between the grey typical and the blackish *passetii* Th. Mieg.

ab. *passetii* Thiery-Mieg. Le Nat. 1885. 7. p. 237. ? (1886. 8. n. 237)

= *aethiops* Robson & Gardner. Young Naturalist (List)

Forewings deep black-brown, much blacker than the type form, with the usual lines scarcely marked. Described from Scotland.

aethiops had the forewings black, the lines and margins of the stigmata greyish. Certainly the name for our northern black form which Tutt called *implicata* Lef.

ab. *grisea* Hannemann. Int. Ent. Z. 1915. 9. p. 46.

The whitish-grey tone on the forewings is wanting, the lines and stigmata are so strongly suffused with dark grey that the wings appear almost uniformly grey. The black markings are still quite recognisable, the fringes of the hindwings yellowish.

ab. *rectangularis* Stephan. Iris 1925. 39. p. 19-20.

The forewings paler than typical, the orbicular large, the inner transverse line indistinct but the outer one, which usually near the costal margin is only slightly bent (or curved) is in this form distinctly angled at almost 90 degrees. Both the arrow-shaped spots from the subterminal extend towards, and point straight at, the point of the angle. This is of such striking appearance that the name *rectangularis* seems appropriate.

ab. *pallida* Spuler. Schmett. Eur. 1965. I. p. 165.

The forewings whitish without brown and the markings obsolescent or suffused.

ab. *roseovirgata* Dannehl. Mitt. Munch. Ent. Ges. 1929. 19. p. 106.

The wated band inside the outer border of the middle field appears light rosy-red. This colouring is in the form of spots here and there outside and below the reniform. Also the pale parts before the outer margin are lightly suffused with rosy.

ab. ? subsp. ? *nigra* Metz. Int. Ent. Z. 1928. 22. p. 52.

Forewings deep black, the orbicular and reniform black ringed with white; the basal ante and postmedian lines and the subterminal white. Hindwings deep black with white fringes.

Possibly a local race in Germany, it is very similar to *passetii* Th.-Mieg. but the description seems to indicate an even blacker form, in our northern form the hindwings are not deep black but fuscous.

ab. *semiconfluens* Lempke. Tijdschr. Ent. 1939. 82 p. 234 (description p. 197)

Instead of joining by their contours the reniform and orbicular are united by a double line.

Noct. 4I.
p. 2.

Eurois occulta Linn. continued.

Noct. 42.
p. I.

Euschesis Hbn. (Triphaena)

janthina Schiff. Men. Verz. 1775. p. 78.
= purpurascens Harrison. Scot. Nat.

aberrational forms etc.

janthina Schiff. typical form - - The ground colour violet-blue, brown spotted.
= purpurascens Harrison has the ground colour purplish, he named the form under the impression that the type form was greenish (from Esper's description) but Schiff's description is the earliest and was not given by Tutt.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 92.

Differs from the purplish-red of the typical form in having the forewings bright red.

ab. subrosea Harrison. Scot. Nat. 1937. p. 170.

Forewings pinkish-grey, sprinkled with blackish scales. The outer line is distinct whilst the space between it and the usual position of the central shade stands out as a darkish band, lightly suffused with rosy-grey scales. The stigmata are obsolete, but the submarginal line and the dull red costal patch are both present. The veins, especially vein I, and those of the cell, tend to be outlined in black.

ab. ronensis Harrison. Scot. Nat. 1937. p. 171.

The space between the submarginal and the outer lines, except for the reddish costal blotch, is filled in with grey.

ab. plusioides Harrison. Scot. Nat. 1937. p. 170.

The reniform and orbicular are well marked and filled in, except where the latter merges into the costal grey suffusion. Its general appearance recalls that of many British Plusias.

Presumably the stigmata are filled in with whitish.

ab. virgata Harrison. Scot. Nat. 1937. p. 171.

The median area exhibiting a black band.

Presumably on the forewings.

ab. peacocki Harrison. Scot. Nat. 1937. p. 170.

Forewings with blackish ground colour, the thorax and abdomen black. The grey irrorations and markings usually found are present.

Dr. Harrison says that the underside is uniformly blackish. This is not mentioned in his original description (above).

ab. latimarginata Rober. Ent. Nachrichten 1900. p. 204.

= flavomaculata Spuler. Schmett. Eur. 1903. I. p. 143.

On the upperside of the hindwing only a spot of yellow remains of the normal yellow area.

ab. obscura Culot. Noct. 1909-13. I. p. 30 pl. 3 f. 15.

Remarkable for the size of the black band on the hindwings and the large size of the specimen. The figure shows the hindwings with a very broad band which merges into the yellow with no clear cut line. The yellow area is split into two parts by a black complete streak running from the band to the black of the basal area. The forewings are also aberrant being unicolorous purplish with a suffusion of pale grey along the inner margin from the base. With the exception of the reniform and an indistinct subterminal there are no markings giving a most unusual appearance.

ab. pallida Lempke. Tijdschr. Ent. 1939. 82. p. 256.

The ground colour of the hindwings pale yellow in place of orange-yellow.

ab. juncta Lempke. Tijdschr. Ent. 1939. 82. p. 256 (description p. 197)
The contours of the reniform and orbicular join together.

ab. alba Lempke. Tijdschr. Ent. 1939. 82. p. 256.
The ground colour of the hindwings white instead of orange-yellow.

Noct. 43.
p. 1.

Euschesis Hbn. (Triphaena)
sobrina Bsd.

aberrational forms etc.

sobrina Bsd. typical form - - the ground colour purplish-red.

ab. suffusa Tutt. Brit. Noct. 1892. 2. p. 107.

The dullest and least strongly marked of the sobrina forms. Forewings of a dull, dark grey colour with the slightest reddish tint. The basal area only slightly powdered with grey, the nervures still less so; the transverse lines indistinct, the basal lines darker, the lower part of the reniform darker, the nervures slightly dusted with pale grey at their bases; altogether a most unicolorous form.

ab. mista Freyer. Neu. Beitr. 1845. 5. p. 102 pl. 441 f. 3.

Thorax and forewings dark copper-brown. From the base to the middle of the wing suffused with grey-blue as in rubricosa. The first broad line nearest to the base is only weakly visible, the second beyond the reniform consists of black spots on the veins, a third pale watery band runs from just below the apex to the inner margin; stigmata paler and hardly visible.

This, from the original description, does not altogether agree with the figure. The grey area in this figure is confined to the basal area, finishing at the antemedian line and not to the middle of the wing as stated in the description. There is a well-developed median shadow in the figure, not mentioned in the description. The main character of the form would seem to be the blue-grey basal area.

ab. gruneri Guenee. Hist. Nat. (Noct. I.) 1852. p. 336. (fig. Dup. Hist. Nat. pl. 69 f. 6.) Large. The reddish tint of the forewings is replaced by ashy-whitish slightly tinted with rose.

Described from the Pyrenees, possibly racial, but may occur as an aberration.

ab. lapponia Freyer. Neu. Beitr. 1845. 5. p. 122 pl. 455 f. 4 as lapponica.

Thorax and forewings brown-grey but suffused with ash colour for two thirds of the wings from the base outwards; markings hardly visible, the dark stigmata almost obsolete and only marked with weak contours. The subterminal line is pale and watery.

The figure is quite good but the transverse lines are drawn somewhat heavily and the pale subterminal does not show. The main character is the grey area extending over most of the wings. Described from Lapland but may occur as an aberration.

ab. confina Kozh. Jahrb. Martjan. Minus. Mus. 1925. 3. (I) p. 75.

Description from Seitz 3 Suppl. p. 88 - "differs from typical sobrina by having the transverse lines and stigmata finely and very distinctly indicated by black lines.

ab. intensa Turner. Ent. Rec. 1938. 50. Suppl. p. (154-155)

Without any grey suffusion and of an intensely dark brown with a slight red tinge. The colour is so deep that it is only with difficulty that any markings can be traced at all. Hindwings also dark being more smoky than any other example seen.

- comes Hubner. Samml. Eur. Schmett. 1809-13. pl. III. f. 521.
= pronuba-minor de Vill. 1789. Linn. Ent. 2. p. 279.
= melanozonias Gmelin. Linn. Syst. Nat. 1790. 4. p. 2544.

There seems to be complete confusion over the names given to this species and the next, orbona Hufn., which has the black apical mark on the forewing. Futt calls this present species orbona Hufn. and the next one subsequa Schiff. Turner in his Brit. Noct. changes to comes Hbn. and uses orbona Hufn. for the next. Lempke uses subsequa Schiff. for the next and says in Tijdschr. Ent. 1952 95. p. 306 that all modern continental authors who have studied this problem are of the opinion that orbona Hufn. is the species without the dark costal mark and wants the name subsequa Schiff. placed on the Official List as the species with this mark. Cockayne uses comes Hbn. for the common species and orbona for that with the apical mark and since the R.-C.-K. collection is arranged according to the new Edition of South's Brit. Moths (which also uses the name comes Hbn. for the common species) Hubner's (name with its positive figure) will be, for the present, used, the two names pronuba-minor and melanozonias are not used because their identity is not certain although they have priority. See Prout's note on Synonymy in Ent. Rec. 1903. 15. p. 221

comes Hbn. typical form- Forewings without an apical spot or flock, the ground colour reddish-brown, not dark.

ab. adsequa Treitschke. Schmett. Eur. 1825. 5. p. 256 (part I)
The ground colour is pale brown with white atoms (brownish-grey) the markings indistinct.

ab. connuba Hubner. Samml. Eur. Schmett. 1819-22. pl. 148 f. 680.
= pronubina De Graaf. Sepp. 1843-53. 7. p. 139.
= immaculata Hackray. Lamb. 1945. 45. p. 66.
The black lunular spot on the hindwings completely absent.
The markings of the forewings in Hubner's figure are also very indistinct.
pronubina merely has different coloured forewings.

ab. prosequa Treitschke. Schmett. Eur. 1825. 5. (I). p. 256.
The ground colour dark brown with white atoms, the markings distinct.

Omit the following from these notes, interposita now a distinct species.
ab. interposita Hubner. (nom. nov. pro. subsequa Hbn.) Beitr. Schmett. 1790. 2. p. 118.
= subsequa Hubner. (nom. preoc.) Beitr. Schmett. 1788. I. pt. 4 p. 32. pl. 4 f. Y.
= consequa Hubner. Samml. Eur. Schmett. 1800-03. pl. 23 f. 105.
The coloured figures of Hubner's subsequa and consequa are obviously of one and the same insect yet Lempke places interposita (subsequa) in one species and consequa in the other. Both figures appear to me to be comes forms. Turner also places subsequa (renamed interposita) under orbona Hufn. and consequa under comes and says that the wing shape of the subsequa is that of orbona whilst the general shape of consequa is quite different from that of orbona. The two figures appear to be identical, there is no sign of the apical mark, characteristic of orbona and the pattern is altogether too heavy for that species.
The form is dark purplish or violet-brown with the stigmata dark brown, ringed in very pale colour.
This dark form is quite common in comes but extremely rare in orbona, if it occurs at all. If it were certain that it is a comes form, it would have priority over Hubner's comes.

ab. albocostata Heydemann. Ent. Z. 1938. 52. p. 23. pl. I f. 12.
On the costa of the forewings there is a narrow but distinct white edging, only interrupted by the transverse lines.

ab. gredleri Hartig. Ent. Rundsch. 1924. 41. p. 45.
A striking subsequa form with the orbicular and reniform filled up with black and the hindwings pale yellow.
By "subsequa" Hartig probably meant the figure of subsequa in Hubner's Eur. Schm. f. 106 which has a pale ground and pale hindwings.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 96.

Forewings pale grey tinted with reddish, the markings variable. The red tint is more pronounced than in ab. adsequa Tr.

ab. grisea Tutt. Brit. Noct. 1892. 2. p. 96.

Forewings dark stone grey.

ab. rufo-grisea Tutt. Brit. Noct. 1892. 2. p. 96.

Forewings dark stone grey as in grisea but lightly tinted with reddish.

ab. ochrea Tutt. Brit. Noct. 1892. 2. p. 96.

Forewings pale ochreous or greyish-ochreous, the markings varying slightly in intensity.

ab. rufo-ochrea Tutt. Brit. Noct. 1892. 2. p. 96.

Forewings pale ochreous tinted with reddish.

ab. virescens Tutt. Brit. Noct. 1892. 2. p. 96.

Pale ochreous tinted with green.

ab. rufescens Tutt. Brit. Noct. 1892. 2. p. 96.

Unicolorous pale red, the markings generally well developed.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 96.

Deep bright red or dark red.

ab. nigrescens Tutt. Brit. Noct. 1892. 2. p. 96. (fig. Entom. 22 pl. 6 f. D 2.)

Forewings black, the stigmata and transverse lines of a very pale shade, showing up conspicuously. Hindwings frequently much suffused with dark scales. Scotland.

ab. rufo-nigrescens Tutt. Brit. Noct. 1892. 2. p. 96.

Forewings black with a distinct red costa.

ab. nigra Tutt. Brit. Noct. 1892. 2. p. 98.

The most extreme melanic form, in which the hindwings and forewings are almost uniformly black. Scotland.

ab. virgata Tutt. Brit. Noct. 1892. 2. p. 99.

Forewings reddish-brown but with the transverse shade which is sometimes developed in other varieties, formed into a distinct dark central band.

ab. lineata Harrison. Scot. Nat. 1937 p. 171.

Entirely black, except for clearly marked outer and submarginal lines. Presumably more extreme than ab. nigra Tutt. The hindwings are not mentioned but if these were also black it is assumed Harrison would have said so since the form would be extraordinary, we therefore think the hindwings more or less normal.

ab. curtisii Newman. Entomologist's Year Book. 1870 (see Entom. 1871. 5. p. 224)

The form is figured in Curtis Brit. Ent. 1831 pl. 348 under the name conseqa. Curtis describes it as " Brown, palpi reddish, crown of head pale; Forewings comparatively short, narrow at base, considerably broader at apex, the costa reddish; two pale strigae towards the base, an oblique oval and auriculate stigma, with pale margins and reddish centres towards the middle, beyond which are two pale sinuated strigae, the nervures between them pale and bearing a row of dots as well as the posterior margin; hindwings orange, fuscous at the base, nervures fuscous, a black fimbria, narrow at anal angle, curved above and reaching the central crescent. I. of Bute. Cont'd. on p 3

ab. *curtisii* Newman. continued.

The typical form is therefore brown with reddish costa, Prout makes *rufonigrescens* Tutt a synonym but Tutt definitely states that the forewings are black not brown so his form is separated here. There is a tremendous variation in the form *curtisii*, Tutt and Prout have named the various degrees of shading etc.

ab. *clarki* Prout. Ent. Rec. 1903. 15. p. 222. (figured Entom. 22. pl. 6 f. C1 & C2.)

The Types of this form are the figures C1 & C2 on pl. 6 in Entom. 22 by Mr. J. A. Clark, which Tutt, on p. 98 of his Brit. Noct. vol. 2 (nec. p. 97) referred to as *curtisii*. Prout's description of *clarki* is - "Deep red, more or less sprinkled with black, both on fore and hindwings

ab. *bergensis* Spr.-Schnaider. Berg. Mus. Aarborg. 1901. p. 155.

Dark greyish fuscous, the markings suffused. Hindwings pale yellow with wide fascia.

I have not seen the original description, Turner says it somewhat resembles *curtisii* in being dark and generally suffused but lacks the beautiful red-brown and the colour of the forewing is not so uniform. This is a description of the coloured figure.

ab. *non-marginata* Lucas. Ann. Soc. Ent. Fr. 1903 72 p. 402 pl. 5 f. 2.

The black marginal border almost obsolete. The figure shows a thin dusky line interrupted for one neural space just below the costa and then continuing as a weak costal blotch.

ab. *demarginata* Schultz. Ent. 3. 1908. 21. p. 246. fig.

The black marginal band of the hindwing almost completely obsolete. The inner edge of the normal band shows only as a shadowy, fine, weakly marked, grey curved line, only imperceptibly broadened at the costa and completely lost towards the anal angle.

Very similar to the preceding but possibly more extreme.

ab. *attenuata* Warren. Seitz 1909. 3. p. 42. (nom. nov. pro. subsequa Haw. nec. Schiff.) = *subsequa* Haworth. (nec. Schiff.) nom. preoc. Lep. Brit. 1809. p. 161.

The black border of the hindwing narrow and submarginal.

ab. *conjuncta* Warren. Seitz. 1909. 3. p. 42. (nom. nov. pro. subsequa Curt. nec. Schiff.)

The forewings burnt brown in colour with the *stigmata* conjoined and the veins pale.

ab. *fumida* Warren. Seitz. 1909. 3. p. 42. pl. 9 Row E.

Forewings dark fuscous tinged with grey; the lines and edges of the *stigmata* grey, the fringes fuscous; hindwing wholly smoky orange.

The figure must be bad, the hindwings not appearing smoky.

ab. *fumosa* Cockayne. Ent. Rec. 1952. 64. p. 33 pl. 2 f. 2.

Forewings smoky-brown with the usual markings visible. Hindwings smoky-brown with no trace of the usual orange colour, band black.

ab. *citrina* Cockayne. Ent. Rec. 1952. 64. p. 33.

Hindwing lemon yellow.

ab. *deprivata* Cockayne. Ent. Rec. 1952. 64. p. 33 pl. 2 f. 1.

There is no doubt in my mind that this is a form of *A. baja*, not *comes*. We have the Type specimen in the R.-C.-K. collection at Tring.

Forewings brownish-fawn with the markings obsolescent. Hindwings whitish-grey with ill-defined darker border and no lunule, closely resembling *sexstrigata*.

ab. albescens Cockayne. Ent. Rec. 1952. 64. p. 130-131 pl. 5 f. 10.

Forewings whitish-fawn with a pinkish tint; markings just visible being of the same colour but slightly darker. Hindwings whitish with a very faint yellow tint; the usual black band replaced by very pale grey. A remarkable albinistic form.

ab. sagittifer Cockayne. Ent. Rec. 1946. 58. p. 73 pl. I f. 8.

Ground colour pale brownish-grey; basal, antemedian and postmedian lines blackish brown, the postmedian united to the series of dots lying between it and the submarginal line so as to form a series of marks like arrow heads; the antemedian is united to the black mark on the costa and to the black dots on the median nervure and nervure 2 so as to form three loops; the orbicular and reniform are filled in with blackish-brown.

ab. undulata Hackray. Lamb. 1945. 45. p. 66.

Hindwings with the black marginal band scalloped on its inner side throughout its length.

ab. pallescens Cockerell. Entom. 1889. 22. p. 4. (see Entom. 20. p. 240.)

Hindwings creamy white.

ab. corsatra Schawerda. Iris 1926. 40. p. 150.

Forewings deep black with a touch of violet, unicolorous and with a silky sheen the stigmata and a transverse line between the reniform and outer margin are faintly outlined in a lighter colour; the basal and outer marginal areas are slightly lighter. Hindwings unicolorous yellow, no dark dusting on the veins, the marginal band deep black. Not the same as *ab. nigra* Tutt. Obviously not one of the several dark *curtisii* forms already dealt with as Schawerda remarks.

ab. olivacea Turati. Atti. Soc. Ital. Sci. Nat. 1924. 63. p. 72 pl. 3 f. 18.

Forewings with a greenish, in fact olivaceous, tinge, resembling certain forms of *fimbria*.

The figure shows a distinct greenish ground, it would come close to *ab. virescens* Tutt which was ochreous with a green tinge.

Noct. 45.
P. I.

Euschesis Hbn.

- orbona Hufn. Berl. Mag. 1766. 3. p. 304.
- = subsequa Schiff. Wien. Verz. 1775. p. 79.
- = orbona Rott. Naturf. 1776. 9. n. 125.
- = sarmata Ramb. Ann. Soc. Ent. Fr. 1870-71. p. 315.

For the synonymy of this and the previous species see note under comes and Prout's note in Ent. Rec. 1903. 15. p. 221. on the validity of the name orbona for this species.

aberrational forms etc.

orbona Hufn. typical form -- Forewing red-brown with brown reniform, hindwings orange-yellow with black margin and black discoidal.

ab. interposita Hubner. Now proved to be a separate species by Boursin. This form is placed in both species by various authors but since there is no sign of the apical spot and the general colour is much more frequent in comes than orbona, it is placed under comes.

ab. grisea Wahlgren. Ent. Tidskr. 1913. 34. n. 164.
= grisea Lempke. Tijdschr. Ent. 1939. 82 p. 258.
Forewings pure silver-grey without brown.
grisea Lempke was grey.

ab. brunnea Lempke. Tijdschr. Ent. 1939. 82. p. 258.
Forewings pure brown.

ab. distincta Lempke. Tijdschr. Ent. 1939. 82. p. 258.
Forewings with distinct dark, doubled, transverse lines.

ab. maculata Lempke. Tijdschr. Ent. 1939. 82. p. 258.
Forewings with the reniform filled with dark.

ab. subsequa Hubner. Samml. Eur. Schm. 1800-03. pl. 23 f. 106.
This is placed as an aberration of the present species by most authors despite the fact that it is far too pale and lacks the apical spot. It is probably a form of comes but having no valid name need not be included in either species.

ab. nigra Pieszczyk. JahresBer. Wien. Ent. Ver. 1908 (1907) 17. p. 113 pl. I f. 5.
Forewings entirely black agreeing approximately with the colour of the forewings of janthina. The stigmata are much larger than in the type, the reniform being deep black against the general ground colour. The usually indistinct whitish transverse band is iron-grey, particularly broad, throughout the whole of the wing. Hindwings more or less normal, the crescents more intense black. The coloured figure shows the pale broad line between the postmedian and the margin, which gives the insect a most unusual appearance.

ab. obscura Lempke. Tijdschr. Ent. 1964. 107. p. 136.
Dark form with dark brown-grey to black-brown forewings.
This is the interposita of Hubner hitherto classed as an aberration of orbona by Lempke and now separated as a different species by Boursin.

Noct. 46.
p. I.

Euschesis Hbn. (Triphaena)

interjecta Hbn.

aberrational forms etc.

subsp. caliginosa Schawerda, Verh. zool.-bot. Ges. Wien. 1919. (1918) 68. p. (279) fig.
The name for the British race. According to Schawerda the typical form does not occur in Britain. The description of the North European race, which includes ours is - - Very dark red-brown forewings, the hindwings deep yellow with a broad black marginal band, twice as broad as Hubner's type form, black basal streaks on the costa and inner margin. The forewing outer margin is darkened.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 91.
The forewings bright red, otherwise normal.

pronuba Linn.

aberrational forms etc.

pronuba Linn. typical form - - Forewings grey, variegated, costa light. The dark forms are males, the light ones females.

ab. innuba Treitschke. Schmett. Eur. 1825. 5. (I). p. 265.
Forewings liver-coloured (dark reddish-brown), almost unicolorous.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 100 & 101.
Tutt's first short description is "red-brown" but on the next page, in his usual contradictory manner, calls it dark reddish-brown which would make it the same as innuba Tr. The first description is therefore valid - Forewings red-brown, almost unicolorous.

ab. ochrea-brunnea Tutt. Brit. Noct. 1892. 2. p. 100. & 101.
Red-brown, with the costa ochreous and a dark space between the stigmata, the reniform dark, the inner margin (beneath the stigmata) also much marbled with darker, the orbicular and transverse lines ochreous.

ab. grisea-brunnea Tutt. Brit. Noct. 1892. 2. p. 100. & 101.
Red-brown, with greyish costa, the orbicular and transverse lines grey instead of ochreous, otherwise similar to the preceding.

ab. ochrea-innuba Tutt. Brit. Noct. 1892. 2. p. 100. & 102
Black-brown with costa, transverse lines ochreous, the space between the stigmata more intensely dark and the area beneath them more mottled.

ab. grisea-innuba Tutt. Brit. Noct. 1892. 2. p. 100-102.
Black-brown with the costa, and transverse lines grey, the space between the stigmata more intensely dark and the area beneath them more mottled.

ab. ochrea Tutt. Brit. Noct. 1892. 2. p. 100 & 101.
Greyish-ochreous, almost unicolorous.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 100 & 101.
Reddish-ochreous, almost unicolorous, some dark shading in the reniform and rather paler orbicular.

ab. coerulescens Tutt. Brit. Noct. 1892. 2. p. 100 & 102.
Slaty-grey, almost unicolorous. The lower part of the reniform is rather darker, the orbicular rather lighter.

ab. distincta-coerulescens Tutt. Brit. Noct. 1892. 2. p. 100 & 102.
Slaty-grey as in the preceding but with the reniform, the quadrate spot between the stigmata, a wedge-shaped mark beyond the orbicular and parts of the inner margin, together with the areas between the outer margin, subterminal, and elbowed lines, darker.

ab. immaculata Lempke. Tijdschr. Ent. 1939. 82 p. 254.
The black spot on the costa of the forewings is absent.

ab. juncta Lempke. Tijdschr. Ent. 1939. 82. p. 254. (description p. 197)
The contours of the reniform and orbicular join up.

ab. nigra Krausse. Arch. Naturg. 1912. 78. A7. p. 168.

= nigra Lempke. Tijdschr. Ent. 1939. 82. p. 254.

The thorax and forewings wholly black, only a narrow pale band showing on the front margin of the thorax. The two stigmata of the forewing are distinct because of their lighter colour. Abdomen dark brown.

Lempke's nigra has the forewings black, almost unicolorous.

ab. pallida Kaiser. Mitt. Münch. Ent. Ges. 1919. 9. p. 14. fig. p. 13.

Forewings glossy, pale grey colour, the silky appearance seldom seen in pronuba. Although the forewings are pale they are not washed-out but are delicately and clearly marked, the stigmata stand out sharply and are surrounded by black atoms. The most striking feature is the colour of the hindwings which are wholly dull yellow with the normal black outer band replaced by pale grey like the colour of the forewings, appearing little darker than the yellow ground, the fringes are almost white.

ab. nuba Kaiser. Mitt. Münch. Ent. Ges. 1919. 9. p. 14.

Unicolorous yellowish-grey to ochre-brown, marking completely washed out but usually only the dark centre of the reniform stands out so that it appears dark, mostly black-brown, on a paler ground colour. Hindwings as a rule less deep yellow and the black outer band is somewhat narrower.

Turner has the wrong description for this form, he has described what Kaiser gives as innuba Tr., a dark form, whereas nuba is the opposite, a light form.

ab. maculina Wihan. Soc. Ent. 1917. 32. p. 4.

Unicolorous dark red-brown, the reniform small, circular, pale on the dark ground, and united by a black longitudinal streak with the orbicular.

ab. decolorata Turati. Atti. Soc. Ital. Sci. Nat. 1923. 62. p. 49.

The hindwings not saffron yellow but of a pale muddy yellow. The forewings as if they had been washed in white.

This would seem to be a pathological form.

ab. denigrata Schultz. Ent. Z. 1908. 41. p. 247.

The hindwings uniformly yellow with no black marginal band.

ab. postnigra Turner. Ent. Rec. 1938. 50. Suppl. p. (143)

The hindwings nearly black.

ab. cricori Vaughan-Roberts. Ent. Rec. 1954. 66. p. 98 pl. 3 f. 3.

Hindwings with the ground colour almost white, the black border normal. Forewings normal.

ab. infrapallida G. Smith. Ent. Rec. 1954. 66. p. 97. pl. 3 f. 1.

Hindwings creamy white with the border pale greyish.

The Type is in the R.-C.-K. coll. and the forewings are normal so the form is not the same as pallida Kaiser.

ab. nivea Cockayne. Ent. Rec. 1952. 64. p. 33. pl. 2 f. 4.

Head, thorax, abdomen and forewings whitish with a faint ochreous tint; reniform dark externally and below, subapical mark small but black and distinct, sparse irroration of darker and greyer scales on the forewing giving it a hoary appearance. Hindwings whitish-orange with the usual black band replaced by pale grey.

ab. fumata Cockayne. Ent. Rec. 1946. 58. p. 74.

The hindwings suffused with brown, becoming yellower towards the base and inner margin. Forewings deep blackish-brown with black markings.

ab. nigribasalis Cockayne. Ent. Rec. 1952. 64. p. 33. pl. 2 f. 5.

Forewing with the area between the basal and antemedian line heavily powdered with black scales and with the lines themselves black; the marginal area is dark brown and then there is a dark brown band just internal to the subterminal line; the rest of the ground colour is paler. Hindwing normal.

ab. attenuata Cockayne. Ent. Rec. 1952. 64. p. 33. pl. 2 f. 3.

Hindwings with the usual black band very narrow and only marked by a few black scales between nervures 3 and 4.

The description is somewhat misleading, the narrow band is complete but fainter between the nervures 3 and 4.

ab. hoegei Herrich-Schäffer. Neu. Schm. 1861. p. 25 fig. II7 II8.

Hindwings showing a black spot in the centre.

The figure in our copy shows nothing of this but I have taken specimens at Tring which show a distinct lunule.

ab. cracoviensis Pruffer. Bull. Int. Acad. Polon. Sci. B. 1914. p. 197. figs.

I have not seen the original description. Seitz 3 suppl. p. 90 states that it was obtained through the influence of chemicals and the name not justified.

ab. cinerea Lempke. Zts. Wien Ent. Ges. 1943. 28. p. 11.

Female form. Forewing almost unicolorous pale grey without yellowish or bluish tints. An extremely rare form.

Lempke says this is the form described as typical *pronuba* by Tutt in Brit. Noct. 2. p. 100.

Noct. 48.
p. I.

Lampra Hbn.
fimbriata Schreber.

aberrational forms etc.

fimbriata Schreber. typical form - - the ground colour greenish-pinkish or greenish-flesh-colour.

ab.fimbria Linn. Syst. Nat. 1767. Ed. 12. p. 842.
The ground colour of the forewings light yellowish grey.

ab.domiduca Hufnagel. Berl. Mag. 1766. 2. p. 404.
= brunnea Tutt. Brit. Noct. 1892. 2. p. 92.
With alternate brown and darker brown. Slightly developed transverse bands.
Tutt's brunnea was "mahogany-brown".

ab.brunnea-virescens Tutt. Brit. Noct. 1892. 2. p. 93. (Hubner Eur. Schmett. fig. 552)
Dark red-brown, tinted with green.

ab.virescens Tutt. Brit. Noct. 1892. 2. p. 92. (Hubner Eur. Schmett, fig. 102)
Very pale greyish-green with a pinkish tinge.

ab.parthenius Bergstrasser. Schrift. Berlin. Ges. Naturf. Freunde. 1780. I. p. 297. pl. 3
Dark greyish-green.

ab.solani Fabricius. Mantissa Ins. 1787. p. 150.
Dark greenish.

ab.rufa Tutt. Brit. Noct. 1892. 2. p. 92.
Reddish-ochreous extending into red-brown.

ab.variegata Lenz. Osth. Sud. Bayern. 1928. I. p. 234. pl. 13 f. 3.
A contrastingly marked form. The marginal area whitish, the discal area dark and the reniform very dark.

ab.obscura Lenz. Osth. Sud. Bayern. 1928. I. p. 234. pl. 13 f. 1.
Specimens with dark forewings. The form runs in various colours.

ab.nigrescens Busse. Zts. Ost. Ent. Ver. 1925. 10. p. 50.
The olive-green of the forewing has become very dark, in the most extreme example almost black. The markings of the basal area here and there visible through the dark colour, on the other hand the surround of the stigmata, the postmedian and the subterminal lines remain distinct. The two pale costal areas are for the most part visible, in the two darkest specimens only a remnant remains. Hindwings with the band normal but the orange-yellow is suffused with blackish, running into a clay colour. This is the same colour as in Zollner's fig of *A. chardinyi*
ab.melanos Zoll. in Iris 34. pl. 2.

ab.iago Catherine. Amat. Pap. 1929. 4. p. 287.
The orange-yellow colour of the hindwings replaced by a coffee-brown tint. the forewings of the solani (olive-green) form.

ab.flava Lempke. Tijdschr. Ent. 1939. 82. p. 262.
The hindwings of a clear yellow instead of orange.

ab. immaculata Lempke. Tijdschr. Ent. 1939. 82. p. 262.

The black mark at the top of the subterminal line just below the costa, is completely absent.

ab. juncta Lempke. Tijdschr. Ent. 1939. 82. p. 262. (description p. 197)

The contours of the reniform and orbicular touch each other.

ab. confluens Lempke. Tijdschr. Ent. 1939. 82. p. 262. (description p. 197)

The reniform and orbicular joined forming one single spot, their boundary absent at the point of juncture.

ab. albida Cockayne. Ent. Rec. 1952. 64. p. 34.

Hindwings with the orange replaced by very pale cream, the black marginal band is normal. The ground colour of the thorax and forewings lacks the usual ochreous or red-brown tint.

ab. inornata Cockayne. Ent. Rec. 1944. 56. p. 54.

The forewings vary from ochreous-brown to dull reddish-brown with the markings indistinct and the pale lines almost as dark as the ground colour so that the wings appear to be nearly unicolorous.

Noct. 49.
p. I.

Gypsitea Tams.

leucographa Schiff. Wuen. Verz. 1775. p. 83.
= leucographa Hbn. Samml. Eur. Schm. 1809-13 p. 572.

aberrational forms etc.

leucographa Schiff. typical form - - purplish-brown, white marked.

ab. lepetitii Boisduval. Icones 1834. 2. pl. 83 f. 2.

The figure shows the forewings dull reddish-brown with the basal line distinct, also the postmedian line from which extend outwardly a row of short black streaks the reniform and orbicular are darker than the ground colour and there is a distinct median shade; a dark thin line is also distinct preceding the fringe. The main character would appear to be the darkened stigmata. The hindwings are exceptionally pale, almost white which makes one wonder if the artist was not very particular about detail.

- ? ab. amicta Donzel. Ann. Soc. Ent. Fr. 1847. 5. p. 527 pl. 8 f. 3. (now placed under faceta)
Forewings smoky brown with the stigmata little marked, the transverse lines not clear, except a dark shade preceding the fringe. Hindwings smoky reddish-grey. The figure shows a melanic example, almost black-brown, the stigmata and subterminal shade somewhat lighter. The hindwings extremely dark except for a paler area near the base. Although it looks like leucographa Seitz in vol. 3 Suppl. p. 251 places this form under C. faceta Tr. (see tenebricosa)

ab. suffusa Tutt. Brit. Noct. 1892. 2. p. 130.

The dark central shade spread over and intensifying the colour of the forewings making them deep blackish-red, the stigmata varying in their development, some having them as yellow as the typical form, others obsolete as in lepetitii. Tutt says he would include all dark forms under this name but those without yellow stigmata would come under the preceding amicta which Tutt did not include. Seitz in vol. 3 Suppl. places amicta Donz. under C. faceta Tr. and Rebel has named the melanic form in leucographa - ab. tenebricosa (see below)

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 130.

The ground colour bright red, of a much paler tint than the typical form. The stigmata are generally well marked, distinct and ochreous in colour.

ab. tenebricosa Rebel. Berge's Schm. 1910. p. 176.

Since most authors now accept Püngeler's determination of amicta Donz. as a synonym of C. faceta Tr. Rebel has renamed the melanic form of leucographa as tenebricosa. The description is - Deep brown-red with almost markingless forewings and much darkened hindwings.

ab. grisea Foltin. Zts. Wien Ent. Ver. 1942. 27. p. 26.

The reddish-brown ground colour replaced by grey-brown.

Noct. 50.
p. I.

Cerastis Ochs.

rubricosa F.

aberrational forms etc.

rubricosa F. typical form - - the ground colour dark reddish-brown.

ab. mucida Esper. Eur. Schmett. 1790. 4. p. 482. pl. 148 f. 4.

The ground colour dark reddish-brown, towards the outer and costal margins a reddish-grey or violet-grey suffusion, a subterminal shade of reddish-grey. The description is far from clear. The figure shows a dark purplish-brown ground with violet grey costa and subterminal shade very conspicuous and pale.

ab. pilicornis Brahm. Insektenkalender 1791. 2. p. 193. The ground colour
The ground colour ashy-grey with a reddish tinge, the transverse lines distinct.

ab. rufa Haworth. Lep. Brit. 1809. p. 232.

The ground colour red, the markings obsolescent.

ab. mista Hubner. Samml. Eur. Schmett. 1809-13. pl. 109 f. 509.

The ground colour reddish-brown, the costa and transverse lines slaty-grey and standing out conspicuously.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 131.

The ground colour pale greyish-red, being much whiter in appearance than the strongly coloured rufa Haworth. The form must be looked upon as a very pale development of ab. pilicornis Brahm.

Noct. 51.
p. I.

Naenia Stephens.

typica Linn. Syst. Nat. 1758. Ed. 10. p. 518.
= excusa Esper. Eur. Schmett. 1790 ? 4 (2) n. 70 pl. 197 f. I.
== venosa Hubner. Samml. Eur. Schmett. 1800-03. pl. 13 f. 61.

aberrational forms etc.

ab. claricolor Schawerda. Zts. Ost. Ent. Ver. 1928. 13. p. 104.

Forewings strikingly paled, without black-brown colour, instead the ground colour is ochre-yellow. Only the triangular spot at the base, the small area surrounding the stigmata and before the apex remain dark. Veins, transverse lines and contours of the stigmata are stronger pale yellow. Hindwings lighter than in the typical form.

ab. contaminatoides Schawerda. Zts. Ost. Ent. Ver. 1928. 13. p. 105.

The opposite to the preceding claricolor. Much darker than the typical form, the veins and transverse lines visible but not pale. The whole of the forewing unicolorous brown with visible markings and the usual blackish areas to the right and left of the reniform and premarginal spots before the apex. The stigmata are finely outlined in yellow. The form appears to be very similar to *N. contaminata* Walker, from which it differs by the yellow outlined stigmata.

ab. obscura Spuler. Schmett. Eur. 1906. I. p. 212.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 41.

The ground colour deep ochreous-brown with rather paler ochreous longitudinal nervures, thus making the specimens of a more generally unicolorous appearance owing to the near approach of the ground colour to that of these lines.

ab. albifusa Cockayne. Ent. Rec. 1942. 54. p. 34 pl. 2 f. 10.

There is a great increase in the white in the median band, external to the ante-median and internal to the postmedian from nervure 4 to the inner margin, where these two white stripes unite, and also along the costa; in other respects the moth is normal.

ab. semiconfluens Lempke. Tijdschr. Ent. 1939. 82. p. 233 (description p. 197)

Instead of joining the stigmata are united by a double line.

ab. clausa Lempke. Tijdschr. Ent. 1939. 82. p. 233 (description p. 197)

The first and second transverse lines of the forewing join on the inner margin.

ab. brevipennis Cockayne. Ent. Rec. 1952. 64. p. 34. (fig'd Barrett pl. 217 f. 1d)

Fore and hindwings very short and broad with much increased convexity of the termen.

aberrational forms etc.

myrtilli Linn. typical form - - the ground colour dark blackish or purple red.

ab. rufescens Tutt. Brit. Noct. 1892. 3. p. 129.

The ground colour much redder than the type with the wings much more variegated with white markings. The common form in the south of England.

ab. anglica Oberthur-Culot. Noct. 2. 1913-17. p. 126.

Culot says more unicolorous, brown-red, possibly the same as the type form. The white markings narrowed, only the white spot stands out well.

Apparently described as the English race but is not constant. It may be used for specimens with the white markings less apparent but most authors make it a synonym of the type, the ground colour however is not of the type form.

ab. lugens Oberthur-Culot. Noct. 2. 1913-17. p. 126.

The yellow basal part of the hindwings very reduced. Forewings normal.

ab. virginalis Oberthur-Culot. Noct. 2. 1913-17. p. 126. pl. 63 f. 4.

The basal half of the hindwings is pure white.

ab. peralbata Warren. Seitz. 1911. 3. p. 252. pl. 50 row B.

The white lines of the forewing strongly developed and the central area is milk-white from the costa to the inner margin, including the white blotch on vein 2. Hindwing with more ample yellow area.

ab. alpina Raetzer. Mitt. Schweiz Ent. Ges. 1890. 8. p. 224. (Frey's Lep. Schweiz p. 175)

The forewings dark chocolate-brown without paler mixture.

Raetzer was naming the form described by Frey in his Lep. der Schweiz in 1880.

ab. olivacea Fuchs.

Warren in Seitz 3 p. 252 says the yellow of the hindwing is suffused with olive-brown. Forewings normal.

ab. snelleni Rebel. Berge's Schmett. 1910 p. 263.

Hindwings completely black.

ab. nigrescens Warren. Seitz. 1911. 3. p. 252.

The usual red suffusion is almost entirely replaced by black.

ab. mediosanguinea Heydemann. Int. Ent. Z. 1929. 22. p. 427. fig. 5.

The whole of the central area is devoid of all white marking and is of a deep and uniform blood-red tone, only the two containing lines are white. All other white and yellowish markings are obliterated by red so that only the four white transverse lines remain on the red ground.

ab. sulphurescens Heydemann. Int. Ent. Z. 1929. (March), 22. p. 427 pl. 3. 6-8.

= ochrea Debauche. Lamb. 1929. 29. p. 66.

All red and olive-yellow replaced by sulphur-yellow. The black ground of the forewing is heavily sprinkled with sulphur-yellow scales, which in the basal area becomes pale golden-yellow. The central spot is reduced but still white, the bordering lines of the central area are black, finely white-edged, as is also the contour of the reniform which is filled with yellowish. The veins in the marginal area and also the subterminal line are white. Hindwing with the usual yellow area reduced by the broadened black margin.

ab. albirena Haworth. Lep. Brit. 1879. p. 161.

Haworth refers to Hubner's fig. 99 which is a cordigera but Haworth's specimen was certainly myrtilli since it came from Norfolk and under present rules regarding aberrations the name can stand as a form of myrtilli.

Forewings fuscous, with small pear-shaped spot in place of the foremost stigma, also wavy striae behind, all white. The fringes dotted with fuscous. Hindwings almost as in the preceding (myrtilli) but the black marginal border a little narrower.

The form then lacks the red tint normally found in English specimens.

ab. nordstroemi Dahl. Ent. Tidskr. 1930. 51. p. 251 pl. I f. 3.

The central part of the forewings very dark and showing no trace of the normal white spot. The inner transverse line is darkened and invisible, the outer one and the subterminal on the contrary are clear. Resembles ab. mediosanguinea Hdm. but goes a step further in a melanic direction.

ab. fagnouli Guth Arch. f. Ins. Oberrhein 1928. 2. p. 251.

Regarded as a synonym of the type by most authors. I have not seen the original description.

Noct. 53.
p. I.

Anarta Tr.

cordigera Phnbg. Mus. Nat. Ups. Diss. I/28. p. 72 pl. 1. 2
= albirena Hubner. Samml. Eur. Schmett. 1800-3, p. 99.

aberrational forms etc.

ab. aethiops Hoffmann. Stett. Ent. Ztg. 1893. 54. p. 128.

Differ from typical form by their deep black colour. Taken in N. Finland and Shetland.

The description is vague, presumably the whitish variegation is absent leaving the wings black except for the white reniform. I have not seen a specimen from Shetland.

ab. carbonaria Christoph. Iris 1893. 6. p. 92.

Forewings almost completely black, the reniform spot narrower. Hindwings with the black border narrower.

Possibly the same as the preceding which has too vague a description to be certain, it is separated because the reniform is narrower, also the hindwing marginal band, both rather feeble characters.

ab. suffusa Tutt. Brit. Noct. 1892. 3. p. 130.

A very rare form with the basal area, central band and space between the angulated and subterminal lines continuously black, leaving only the extreme hind margin (outside the subterminal) whitish.

ab. aureola Stichel. Berl. Ent. Z. (1908) 1909. 53. p. 107.

A specimen of ab. suffusa Tutt in which the reniform is ochre-yellow instead of white.

Stichel refers to the specimen mentioned by Tutt in Brit. Noct. 3. p. 129-30

ab. variegata Tutt. Brit. Noct. 1892. 3. p. 130.

With the central band of the forewing broken by a transverse ashy fascia between the stigmata, giving the insect the appearance of being grey, with a black transverse fascia between the angulated and subterminal lines and another down the basal line.

- melanopa Thnbg. Diss. Ent. Syst. 1791. (2). p. 42.
= alpicola Quens. Acerbi. 1802. 2. p. 253 pl. I f. 5-6.
= vidua Hubner. Samml. Eur. Schmett. 1808. f. 403.
= vidua Freyer. Neu Beitr. 1842. 4. p. 36 pl. 3II f. 2 (nec. 3)

aberrational forms etc.

melanopa Thnbg. typical form - Grey irrorated forewings, distinct white hindwings with black marginal band and lunule.

ab. brunnea Robson. Young Nat. 1888. 9. p. 123.

A browner form with four dark bands and the veins showing lighter.

ab. wistromi Lampa. Ent. Tidskr. 1885. 6. p. 81.

The forewings much darker inclining to yellowish-brown, the markings rather coarse and in places running together. The underside with broad black border on outer edge as is the case with the hindwings upper and underside.

ab. rupestralis Hubner. Samml. Eur. Schmett. (Pyrallides) 1803 ? pl. 2I f. 138.

= tristis Hubner. Samml. Eur. Schmett. (Noctuae) 1808-09. pl. 95 f. 446.

= rupestris Hubner. Samml. Eur. Schmett. (Noctuae) 1818-19. pl. 14I f. 644.

The hindwings completely suffused with greyish-brown obliterating all white. The forewings in the figure also appear darker, no pale areas showing.

vidua Freyer. ab. Neu. Beitr. 1842. 4. p. 37 pl. 3II f. 3 (nec. 2)

Under the name vidua Hubner, Freyer gives two figures, the first fig. 2 obviously meant to represent Hubner's vidua. The second figure F. 3 is of a striking aberration. Many authors call the aberration "vidua" Freyer but obviously it has no name, Freyer's vidua being the same as Hubner's since he quotes Hubner's fig. 403, this is much darker than Freyer's coloured figure but artist in those days were not too particular about shades of colour, it varies quite a lot in different copies.

ab. clara Cockayne. Ent. Rec. 1952. 64. p. 34 pl. 2 f. 6.

Ground colour of the forewing grey; the basal, ante and postmedian lines are distinct and the subterminal normal; a dark median shade runs through the reniform; the area between the antemedian line and the median shade is free from markings and the orbicular indistinct so that a broad clear band of grey crosses the wing.

ab. pura Cockayne. Ent. Rec. 1952. 64. p. 34.

Forewing with the ante and postmedian lines distinct, the subterminal line present, but the median shade is absent so that the dark stigmata stand out clearly in the grey median area.

ab. striata Cockayne. Ent. Rec. 1952. 64. p. 34 pl. 2 f. 7.

Three broad dark lines run across the middle of the forewing, the first just proximal to the orbicular, the second through the orbicular, and the third and outermost through the reniform. The second and third appear to be median and postmedian lines shifted towards the base. The subterminal is distinct and from it three dark streaks run inwards to the postmedian, one on the costa, one between nervures 4 and 6, and one along nervure 2 and the space between 2 and 3; the last two are wedge-shaped.

aberrational forms etc.

ab. albidilinea Haworth. Lep. Brit. 1809. p. 191.

The forewings blackish with a whitish subterminal line.

ab. albicolon Stephens. Ill. Haust. 1829. 2 p. 195 pl. 24 f. 3. not valid.

This name has crept into the literature through Tutt's remarks in Brit. Noct. I. p. 114 where for some obscure reason he includes it in *M. brassicæ* as an aberration. Stephens gives an excellent figure of the insect which is clearly the species *albicolon* Hbn. On top of this Tutt includes the same insect in *albicolon* and says our British specimens are usually of this form. Warren has copied Tutt and placed *albicolon* Stephens under *brassicæ* making it a synonym of the Type form and then also included it in the species *albicolon*. (Seitz 3 p. 67 & 83) The name is not valid.

ab. scotochroma Rober. Iris 1888. I. p. 340 pl. 12 f. 13.

Distinguished by the almost complete absence of the golden sheen usually found along the inner margin near the base of the forewing and along the subterminal line of which only a few rudimentary traces remain, thus a much darker ground colour prevails. Hindwings approaching the colour of the forewings much darker than in normal *brassicæ*.

ab. decolorata Staudinger. Stett. Ent. Zt. 1889. 50. p. 34.

Very much paler and more obsoletely marked than typical *brassicæ*. Near to *andalusica* Stgr. but the latter is of a peculiar whitish-grey, in no way yellow or light brown-grey. The transverse lines are more or less rudimentary and other markings almost lost. Hindwings also lighter.

ab. ochracea Tutt. Entom. 1889. 14. p. 251.

Tutt's description of this form is confusing. He first says it is the fig. d. of *Engramelle* 456, and then gives the description of Hubner's figure in *Samm. Eur.* Schmett. f. 88 as follows - - "Anterior wings pale ochreous with darker fuscous shades, all the characteristic lines and markings of *brassicæ* of a pale whitish ochreous. Hindwings grey, margin darker than the base, lunule distinct." He then goes on to describe the form from Anurland already named by Staudinger as *decolorata* because "Mr. Dobrée says they agree with with Hubner's figure, and later says his *ochracea* is a synonym of *decolorata*., see Brit. Noct. 4. p. 107. In my opinion the forms are not the same, the Anurland form described by Staudinger does not agree at all with the rich ochreous form figured in Hubner. *ochracea* Tutt therefore is separated here, its description being that of fig. 88 in Hubner. In our copy the ground colour is hardly "pale" ochreous, it is rich.

ab. andalusica Staudinger. Cat. Ed. 2. 1871. n. 90.

Pale, rather unicolorous.

Later, in *Stett. Ent. Zt.* 50. p. 34 Staudinger says these are of a peculiar whitish-grey, in no way yellow or light brown-grey.

Seitz says the form is not racial but occurs in many places in S. Europe with intermediate forms.

ab. straminea Failla. Nat. Sic. 1890. 10. p. 30. pl. I. f. 5.

Distinguished chiefly by its general tone of pale straw-yellow, by the usual line being well marked in black and by the stigma of a deep yellow colour, as is also the antemarginal fascia. The hindwings, as well as the whole of the body, are of the same pale straw yellow.

ab. unicolor Tutt. Entom. 1889. 22. p. 251.

Forewings dull blackish-grey with the subterminal line almost obsolete, the markings blending with the dark ground colour, give it a very unicolorous appearance. The outer edge of the reniform is white as in the typical form.

ab. nauper. Lemke. Tijdschr. Ent. 1940. 83. p. 243.

Forewings unicolorously brown, orbicular and reniform stigmata feebly indicated, for the rest without any trace of markings.

The form must be very near to the preceding, the markings would appear to be even less apparent and the ground colour brown, not blackish-grey.

ab. concolor Cockayne. Ent. Rec. 1944. 56. p. 54.

The ground colour brown, the usual dark markings are present but the subterminal line, the reniform and line around it, and all the paler areas present in the normal form are brown like the ground colour. The basal part of the hindwing is darker than usual and the white mark at the anal angle is absent. The brown has a slight coppery gloss. The form is different from ab. scotochroma Hob. which has a thin white subterminal and white scales at the reniform, and from ab. unicolor Tutt which is black with a white reniform.

ab. diffluens Cockayne. Ent. Rec. 1952. 64. p. 35.

Forewing with the basal line present but all the other transverse markings absent; The stigmata and pale submarginal line are normal. Hindwing normal.

Noct. 56.
P. I.

Melanchra Hbn.

persicariae Linn.

Turner in his Brit. Noct. p. (272) gives *sambuci* Hufn. Berl. Mag. 1776. 3. p. 308 as a synonym of the type.

ab. *unicolor* Staudinger. Cat. Ed. 2. 1871. p. 91.

Forewings without the white central spot.

This was called *accipitrina* Esper by the older authors but Esper's figure is not considered to be the species *Dryobotes accipitrina*. Staudinger therefore gave a name to this form without the characteristic white spot.

ab. *accipitrina* Esper. see the preceding *unicolor* Stgr.

ab. *ochrorensis* Kardakoff. Ent. Mitt. 1928. 17 p. 419 pl. 9 f. 2.

The reniform golden yellow instead of white.

ab. *badia* Lempke. Tijdschr. Ent. 1940. 83. p. 242.

Ground colour of the forewings dark red-brown, subterminal line yellow-brown.

ab. *leucoptera* Schwingenschuss. Zt. Wien. Ent. Ges. 1954. 39. p. 177.

The hindwings pure white.

Noct. 57.
p. I.

Polia Ochs.

~~hepatica Clerck.~~
= tincta Brahm.
= trimaculosa Esp.
= argentina Haworth.

non tincta Brahm. Esp.

aberrational forms etc.

ab. suffusa Tutt. Brit. Noct. 1892. 3 p. 70.

On the forewing the whole area between the basal and angulated lines is deeply suffused with dark purplish, the suffusion extending below the stigmata almost to the inner margin. Hindwing normal.

ab. semiconfluens Lempke. Tijdschr. Ent. 1940. 83. p. 241 (description vol. 82 p. 197)
Instead of actually joining the stigmata are united by a double line.

ab. juncta Lempke. Tijdschr. Ent. 1940. 83. p. 241. (description vol. 82. p. 197)
The contours of the reniform and orbicular stigmata join up.

Noct. 58.
p. I.

Polia Ochs.
nitens Haworth. Lep. Brit. 1809. p. 188.
= advena Fab. (nom. prec.) Mantissa 1787. 2. p. 183.
= advena auct.

aberrational forms etc.

ab. unicolor. Tutt. Brit. Noct. 1892. 3. p. 71.

The pale glaucous colour on the forewing is completely absent, leaving it unicolorous dark reddish, slightly grey, with the stigmata and transverse lines almost obsolete and of the subterminal line only the mark near the anal angle is noticeable.

ab. flavescens Spuler. Schmett. Eur. 1905. I. p. 168.
Forewings pale yellow-brown.

ab. scotaea Draudt. Seitz 1934. 3. Suppl. p. 108.

A remarkable large dusky aberration which is quite grey-black, in consequence of this dense dark suffusion the markings are scarcely discernible.

ab. sylvatica Bellier.

Turner for some extraordinary reason includes this form of *Crino adusta* in his variation of *nitens* (*advena*). The coloured figure is excellent and does not in any way resemble this species.

- nebulosa Hufn.
= thapsi Brahm. Kalend. 1791. 2. p. 135, 533.
= plebeja Hubner. Samml. Eur. Schmett. 1800-03. f. 78.
= grandis Donovan. Brit. Ins. 1801. 10. pl. 345 f. I.
= grandis Haworth. Lep. Brit. 1809. p. 185.

aberrational forms etc.

nebulosa Hufn. typical form - - forewings whitish-grey with the markings distinct or brownish-grey with whitish-grey spots.

ab. pallida Tutt. Brit. Noct. 1892. 3. p. 68.
White with almost obsolete markings.

ab. plumbosa Mansbridge. Entom. 1917. 50. p. 49.
Forewings leaden-grey to fuscous-grey; stigmata faintly outlined in white and exteriorly with black, transverse lines faintly white posteriorly black, interrupted; a series of small black acute tooth-shaped marks representing the subterminal; on the termen a series of black lunules and dots; the veins in the subterminal region black; hindwings uniformly dark grey, the veins darker than the ground.

ab. bimaculosa Esper. Eur. Schmett. 1788. 4. p. 403 pl. 132 f. 1-2.
The description says ash-grey, sometimes more whitish, sometimes brownish, the markings distinct.
The two figures are very bad, the second one with aberrant markings; the colour is dark brown far darker than the impression given in the description.
The form is generally accepted as being rather dark grey.

ab. conspicua Warren. Seitz 1909. 3. p. 78.
Pale brownish-grey with the submarginal line conspicuously black and continues throughout its length. The underside with the extreme outer margin and fringe prominently pale ochreous.

? ab. calabrica Warren. Seitz. 1909. 3. p. 78.
This appears to be a local race and not an aberration. A series from Calabria in the Tring Museum are all of this form, it would be best regarded as an Italian form and not a British aberration.

ab. albilinea Lempke. Tijdschr. Ent. 1940. 83 p. 240.
Forewings unicolorously dark grey, with clear markings and sharply contrasting white inner and outer lines.

ab. robsoni Collins. Ent. Rec. 1891. 2. p. 264.
The first description of this form was merely "five melanic forms from Delamere" exhibited at a meeting of the Lancs. & Cheshire Ent. Soc. This unsatisfactory note has given rise to much argument as to whether or not it is the same as the following ab. thompsoni Arkle. Arkle himself says after his description of thompsoni that robsoni is very different and lacks the white markings and decorations. Tutt in his description of robsoni Collins does not mention the extreme white fringes which are characteristic of thompsoni.
It is now generally accepted that robsoni Collins is the heterozygote and thompsoni the homozygote of the same melanic form, robsoni is black-brown with the stigmata somewhat paler as is the subterminal line, the fringes are whitish-grey with a row of tiny black dots preceding them, these black dots are not present in thompsoni.

ab. thompsoni Arkle. Ent. Mon. Mag. 1904. 40. p. 180.

The forewings are black. The stigmata appear faintly as smoky black markings, paler than the rest of the wing. The outer margins are white, and include, in addition to the cilia, the areas of the black crescentic spots found in the typical form occurring in Delamere Forest. The white margins are consequently scalloped interiorly. On the costal margin are three white spots near the apex. Hindwings with outer margins white as in the forewings, otherwise smoky black paler towards the base, the nervures black.

This is the homozygous form of *robsoni* Collins the preceding.

? ab. *suffusa* Klem. in Turner Brit. Noct. (Ent. Rec. 56 Suppl. p. (160) is *nubeculosa* not *nebulosa*.

Noct. 60.
p. I.

Pachetra Gn.

sagittigera Hufn.

aberrational forms etc.

sagittigera

subsp. britannica Turner. Ent. Rec. 1933. 45. Suppl. p. (284)

The white ground colour appears to be more especially visible in our native specimens, those from abroad having the ground colour much tinged with pale umbreous or smoky-brown.

The typical form, with its various colour variations, does not occur in England.

ab. diluta Rebel. Berge's Schmett. 1910. p. 178.

Much paler than typical, the forewings white-grey with obsolescent dark markings, only the claviform stigma is dark, generally also the marginal area, after the subterminal line.

ab. brunnea Rebel. Berge's Schmett. 1910. p. 178.

Forewing almost unicolorous brown, mostly with the orbicular and reniform stigmata ringed with white.

ab. quadrimaculata Kujau. Int. Ent. Z. 1918. 12. p. 105.

A deep black large quadrate spot below the two stigmata and with a paler ground colour than normal.

ab. extrema Lempke. Tijdschr. Ent. 1940. 83. p. 223.

Forewings unicolorously white with complete sharply contrasting dark markings. This is the extreme form of our English race.

ab. conjuncta Hirschke. Verh. Ges. Wien. 1910. 60. p. 416.

From the lower margin of the reniform runs a broad white streak to the lower part of the orbicular, making a complete junction of the two stigmata.

ab. melaena Hartweg. Ent. Z. 1913. 26. p. 187.

= nigra Wagner. Int. Ent. Z. 1931. 24. p. 476.

On the forewing all the white and pale markings are absent; the orbicular, reniform and claviform are covered over with the same dark colour as the rest of the wing and have, instead of a white or pale surround, a black one.

Wagner's nigra was almost uniformly dark (blackish) grey.

Noct. 6I. Diataraxia Hbn.
p. I.
oleracea Linn.
= spinaciae Borkh.

oleracea Linn. typical form - - Forewings dark red-brown.

ab. rufa Tutt. Brit. Noct. 1892. 3. p. 89.

Forewings bright red-brown without the dark fuscous shading of the type. The stigmata generally well-marked, the subterminal distinct. Hindwings, too, rather paler.

ab. obscura Spuler. Schmett. Eur. 1905. I. p. 170.

Forewings blackish red-brown.

ab. obsoleta Lambillion. Cat. Lep. Belg. 1913. p. 455.

The orbicular and reniform of the same colour as the ground colour.

ab. brunneomaculata Heinrich. Deutsch. Ent. Z. (1916) 1917. p. 514.

The yellow centre of the reniform is suffused with brown.

ab. albomaculata Lempke. Tijdschr. Ent. 1940. 83. p. 228.

The orbicular stigma wholly filled with white, sharply contrasting.

ab. essoni Hampson. Trans. Ent. Soc. Lond. 1909. p. 461. pl. 16.

Forewing flesh-pink tinged with brown, the costal area suffused with grey-white leaving the costal edge pinkish, the veins streaked with grey-white, the terminal area whitish with pinkish patches in the inter-spaces, especially towards apex; traces of a wavy brown sub-basal line from costa to submedian fold; antemedial line blackish at costa then indistinct, brown, oblique, sinuous, claviform small, blackish filled in with grey scales; orbicular and reniform grey-white defined by blackish, incompletely above and below, the former small, round, the latter somewhat quadrate and some flesh-colour in its upper part; traces of a sinuous dark medial line oblique from costa to reniform and inwardly oblique from lower angle of cell to inner margin; postmedial line blackish, bent outwards below costa, then obsolescent, dentate and produced to short black streaks on the veins, excurved to vein 4, then oblique; subterminal line whitish, obsolescent towards costa and dentate to termen at veins 4-3, some dark suffusion before it; Cilia pink with slight whitish line at middle and whitish tips. Hindwing ochreous white with a slight fuscous tinge at upper angle of cell, short postmedial black streaks on veins 7-2, and a fuscous tinge on subterminal area between veins 4 and 2; Cilia tinged with reddish-ochreous except at tips. Scotland. Described as a new species by Hampson but has been determined by Tams as an aberration of oleracea.

ab. minor Dufrane. Lamb. 1932. 32. p. 81.

Typical but very small, 32 mm.

ab. nana Dufrane. Lamb. 1932. 32. p. 81.

Similar in size to the preceding minor, 32 mm., but blackish red-brown, the colour of ab. obscura Spuler.

ab. minuscula Dufrane. Lamb. 1932. 32. p. 81.

Similar in size to ab. minor, 32 mm., but in coloration as in ab. obsoleta Lamb., which has the stigmata of the same colour as the ground.

aberrational forms etc.

pisi Linn. typical form - - red-brown, mottled grey, distinct markings.

ab. splendens Stephens. Ill. Haust. 1829. 2. p. 192.

Forewings rufous-brown with three darker transverse strigae, the exterior one terminated by an interrupted white line; the stigmata rather small pale reddish-ash, the anterior one immaculate, the posterior with dusky clouds. Hindwings ochreous-ash, with the margin and an interrupted transverse striga, central lunule and nervures dusky.

The form would appear to be almost unicolorous rufous-brown except for the white subterminal.

ab. splendida Robson. Young Nat. 1888. 9. p. 122.

= distincta-rufa Tutt. Brit. Noct. 1892. 3. p. (i).

A very richly coloured and well-marked specimen of the red form is called splendida by Mr. Gregson.

Tutt gives this quotation but proceeds to give the form another name.

ab. rufa Tutt. Brit. Noct. 1892. 3. p. 91.

Forewings of a bright red, sometimes tinted strongly with ochreous, the stigmata, central shade etc., more or less obsolete, the whole insect being almost unicolorous except the pale and distinct subterminal line.

ab. pallida Tutt. Brit. Noct. 1892. 3. p. 91.

Forewings pale grey with a reddish tinge, the transverse markings distinct, the subterminal pale and showing a tendency to blend with the ground colour.

ab. scotica Tutt. Brit. Noct. 1892. 3. p. 91. 92.

Purplish-red or brown, the markings obsolete except the subterminal.

Not confined to Scotland but Tutt says the form is not found in the south.

ab. distincta-scotica Tutt. Brit. Noct. 1892. 3. p. 91. 92

Purplish-red or brown, the markings distinct.

ab. suffusa Tutt. Brit. Noct. 1892. 3. p. 91. 92.

Suffused blackish. The red colour entirely lost in a suffusion of melanic scales, the ordinary markings appearing still darker than the ground colour.

ab. aestiva Rothke. Ins. Borse. 1902. 19. p. 164.

In general darker than typical, the red-brown of the forewings almost wholly obsolescent which makes the ground colour a dull brown, the rest of the tones of colour are duller and darker. The subterminal line is obsolescent except the anal angle blotch which is smaller but sharp. Hindwings duller and darker. There is no violet shimmer either in these dark examples.

ab. striata Cockayne. Ent. Rec. 1939. 51. p. 8.

Forewings light red-brown with the dark markings nearly obsolete; interneural spaces ochreous almost to the termen contrasting with the dark nervures; ochreous subterminal line, and mark at anal angle distinct; hindwings much paler than usual with dark nervures, the outer part of the interneural spaces pale ochreous forming a border 2 mm. wide.

ab. pulchra Cockayne. Ent. Rec. 1946. 58. p. 74

Forewing from base to the central fascia the ground colour is pinkish-white crossed by the purplish-red basal and antemedian lines which are united by the longitudinal lines of the same colour running along the costa, median nervure and inner margin; the orbicular and all other markings are absent; the purplish-red median fascia is quite straight and distinct, the position of the reniform is shown only by the dark line forming its external border and this is continuous with the inner part of the postmedian line. The rest of the wing is normal. The two clear transverse bands of pinkish-white and the absence of stigmata and secondary markings make it a very remarkable and beautiful aberration.

ab. kanei Donovan. Cat. Macrolep. Ireland. 1936. p. 55.

Forewings pure brown, without any red.

Noct. 63.
p. I.

Hada Billberg.

nana Hufn.
= dentina Schiff.
= plebeia Haworth.

aberrational forms etc.

ab. leucostigma Haworth. Lep. Brit. 1809. p. 198.

Forewings greyish-white. Like the typical form as it agrees with it in almost everything except being much lighter coloured, and in being fulvous or subfulvous or rusty-flavous in every part where the typical form is brown or black.

ab. hilaris Zetterstedt. Ins. Lapp. 1839. p. 938.

Greyish-white like the preceding, markings pale but the bifid spot wholly confluent with the anterior stigma, both forming one larger angulated spot with a bifid extension.

ab. leucostigma-obsoleta Tutt. Brit. Noct. 1892. 3. 0. 81.

= canescens Schawerda. Zts. Ost. Ent. Ver. 1938. 23. p. 26.

The ground colour as in leucostigma Haw. (greyish-white) but more unicolorous; the dark parts of the wing round the stigmata etc. absent.

ab. obsoleta Tutt. Brit. Noct. 1892. 3. p. 81.

Of the same ashy-grey ground of the typical form but without the darker markings round the stigmata, the whole wing being comparatively unicolorous.

nana Hufn. - - typical form - - Ground colour of the forewings grey with darker median area.

ab. ochrea Tutt. Brit. Noct. 1892. 3. p. 81.

The ground colour ochreous-grey, some specimens becoming of quite a brownish tint with the yellow markings sharply defined.

ab. ochrea-obsoleta Tutt. Brit. Noct. 1892. 3. p. 81.

The ground colour greyish-ochreous as in the preceding but more unicolorous, the dark parts of the wing uniform with the ground, the whole wing almost uniformly ochreous.

ab. brunnescens Schawerda. Zts. Ost. Ent. Ver. 1938. 23. p. 26.

The ground colour of the forewings brown, with no pale areas.

ab. proxima Freyer. Neu. Beitr. 1831. 2. p. 15. pl. 104 f. 2.

There is little or no description. The figure shows the forewings rather dark grey and also the usual double-tooth mark beneath the orbicular, the median area where this is normally situated being black. The subterminal is whitish and stands out as the only light feature on the dark ground.

ab. latenai Pierret. Ann. Soc. Ent. Fr. 1837. p. 177. pl. 8 f. 3.

Wings dusky grey with a slight purplish tinge. Pierret distinguished it from the typical form by the intensity of the colour of the forewings and by the black markings which are more pronounced. The dentate spot is larger and better marked.

The figure shows the double-tooth mark very large and whitish on the black surrounding area, it completely encloses the orbicular.

ab. variegata Vorbrodt. Mitt. Schweiz. Ent. Ges. 1917. 12. p. 457.

The outer and discal areas of the forewing are suffused red-brown, with the exception of the orbicular. The usual yellow basal spot on the inner margin deep orange.

ab. schultzi Rebel. Berge's Schmett. 1910 Ed. 9. p. 183. (Fig. Berl. Ent. Z. 44 p. 159)

Forewings as in *ab. latenai* but with indistinct stigmata, a prominent whitish-grey outer band (between the postmedian and subterminal) and a darkened blackish marginal band beyond the subterminal.

ab. edentata Meves. Ent. Tidskr. 1914. 35. p. 25.

The light double-tooth mark in the middle field of the forewings is completely absent; the ground colour yellowish-brown, markings indistinct.

ab. juncta Lempke. Tijdschr. Ent. 1940. 83. p. 225 (description vol. 82 p. 197)

The contours of the reniform and orbicular join together or touch each other.

ab. suffusa Schwingenschuss. Z. Wien. Ent. Ges. 1953. 38. p. 175.

The inner and outer transverse lines of the forewing fail completely, since these lines are washed out the insect has a very different appearance.

Noct. 64.
p. I.

Discestra Hampson.

trifolii Hufn.
= *chenopodii* Schiff.
= *verna* Esper.

aberrational forms etc.

trifolii Hufn. typical form - - the ground colour light brownish-grey, the markings distinct.

ab. indistincta Tutt. Brit. Noct. 1892. 3. p. 83.

Unicolorous dark grey with the ordinary markings and lines obsolete, sometimes even the dark reniform spot. The specimens look badly scaled as well as wanting in pigment, giving one the idea that the result is due to imperfect development.

ab. fasciata Lempke. Tijdschr. Ent. 1940. 83. p. 233.

Forewings with a dark central shade.

ab. confluens Lempke. Tijdschr. Ent. 1940. 83. p. 233. (description p. 197 vol. 82)

The orbicular and reniform joined in one single spot, their boundary absent at the point of juncture.

ab. robinsoni Cockayne. Ent. Rec. 1952. 64. p. 191. pl. 8 f. 7.

On the forewing the basal area is darkened with wavy transverse lines and clouding; the inner part of the median area is whitish-grey with the orbicular paler; there is a blackish transverse band occupying the outer part of the median area, wide at the costa and including the reniform, but narrower between the reniform and the inner margin, bounded externally by the postmedian line; the whole of the marginal area external to the postmedian is dark grey with the subterminal line represented by a row of black wedges. On the hindwing the basal area is whitish-grey, the postmedian line is represented by a row of blackish dots on the nervures and the nervures themselves are blackish.

ab. deleta Cockayne. Entom. 1952. 85. p. 265. pl. 4 f. 15.

The forewing from the base to the pale subterminal line is almost devoid of markings with the exception of the three stigmata. Internal to the median area there are very indistinct transverse markings, and external to the median area there are indistinct longitudinal markings, which give the appearance of a darker transverse band.

ab. saucia Esper. Eur. Schmett. 1788-89. 4. (2). p. 505. pl. 152 f. 5.

The ground colour greyish-yellow with blackish markings and an outer, well-marked line of reddish-yellow spots.

Esper stresses this reddish outer line (subterminal) in his description, it would seem to be the chief character of the form, not the ground colour as Tutt implies.

ab. brunnescens Herdemann. Int. Ent. Z. 1933. 27. p. 330.

Forewings darkened by the cloudy, thicker infusion of grey and grey-brown scales, particularly in the marginal area before the waved line and in the middle of the wing. The waved line (subterminal) is suffused with sharp yellow-white and stands out, giving the appearance of *dissimilis*.

ab. lodbjergensis Hoffmeyer & Knudsen. Flora og Fauna. 1935. p. 58.

Noct. 64.
p. 2.

trifolii Hufn. continued.

ab. albifusa Walk. Cat. Brit. Mus. Noct. 1857. 2. p. 753.

A specimen of this American form was taken at Portland and is in the R.-C.-K. coll. See Tutt's Brit. Noct. 3 p. 84.

- w-latinum Hufn.
- = genistae Borkh.
- = dives Donovan.
- = rectilinea Haworth.

aberrational forms etc.

ab. obsolescens Turner. Ent. Rec. 1945. 57. Suppl. p. (212).

Practically the whole of the markings are obsolescent on a unicolorous dark ground, in one example dark brown-grey with a slight purplish-red tinge, in the other, a blackish-grey. The hindwings follow the prevalent colour of the forewings with a slight deepening of black in the darker example. All the usual markings can be traced with much difficulty and patience.

- suasa Schiff. Wien Verz. 1775 p. 83.
 = dissimilis Knoch. Beitr. Zur. Ins. 1781. 57. pl. 4 f. 3-4.
 = suasa Borkh. Naturg. Noct. 1792. 4. p. 457.
 = dens-canis Haworth. Lep. Brit. 1809. p. 190.
 = permixta Hbn. Samml. Eur. Schmett. 1832? fig. 803.

suasa Schiff. typical form - - The ground colour liver-brown to earth-brown, the markings fairly well expressed.

ab. laeta Reuter. Acta Soc. Faun. et Flora Fennica 1893. 9. p. 42.

= variegata Rebel. Berge's Schmett. 1910. Ed 9. p. 181. (Barrett 4. pl. 157 f. 1)

The extreme variegated form, noticeably lighter than the typical form! Considerably lighter than the typical form, forewings more or less brown-grey with spotty darkenings from the base to the distinct undulate line which is very sharply marked on its outer side, the fringe - field unicolorous dark brown only dusted along the ends of the veins."

Rebel's variegata description says "The most variegated form; forewing brownish with distinct transverse lines, paler orbicular and reniform stigmata and prominent dark filled-in claviform. The area after the discal is band-like, light brownish-grey.

The two forms would seem to be the same, possibly variegata is a little more extreme.

ab. w-latinum Esper. Eur. Schmett. 1788. 4 (2) p. 426 pl. 136 f. 3.

Similar to oleracea but the brown-grey ground is much lighter, more reddish-brown. Next to the margin is a white line which in the middle is angled in the form of a W or M, in oleracea they are short points at this angle whereas in this form they go through to the border. A black streak at base, the stigmata indistinct. The figure shows a rather pale reddish-brown unicolorous insect with whitish well-marked subterminal.

Lempke makes this the common unicolorous dark red-brown form but by the description and figure it is too light. See next form leucographa.

ab. leucographa Esper. Eur. Schmett. 1790. 4(2). p. 491. pl. 150 f. 3.

The upperside brown, reddish mixed. The two main lines white-grey, the stigmata margined with the same colour but hardly visible. Above and through the whole wing a scalloped blackish-margined almost obsolete, a rather spotted, stripe. Next to the outer margin a white toothed line, the area between this and the outer margin darker coloured.

The figure shows the forewings brown with a very slight red tint, almost unicolorous with a dull whitish subterminal. This would seem to be our common dark unicolorous form described as the typical form by many authors, the type however has the markings well developed on a paler ground.

ab. confluens Eversmann. Faun. Volg.-Ural 1844. p. 245.

Forewings blackish-fuscous with the submarginal area unicolorous; stigmata white-margined, usual transverse lines white; the submarginal line sharply bidentate in the middle. Hindwing blackish, cilia white. Differs from suasa in its blackish colour and its unicolorous submarginal area without shades.

The description is not good, the lines are not likely to be "white", but they are evidently present, despite this many authors say they are almost absent.

ab. extincta Staudinger. Rom. Mem. 1892. 6. p. 425.

Very dark without light red-yellow or red-brown colouring but the markings appear especially in the ♂ distinctly lighter grey and black intermixed. The chief character is the subterminal line which, in the usual form is white, is in this not white but somewhat light grey (yellowish).

Described from Amurland and may be racial only.

ab. distincta Heinrich. Dtsch. Ent. Z. 1923. Sep. p. 77.

The lower half of the reniform and often also of the orbicular distinctly filled in with black..

Noct.66.
p.2.

suasa Schiff. continued.

ab.turanica Spuler. Schmett.Eur.1905.I.p.171.
Forewings pale grey-red with distinct W line but the markings obsolescent.

ab.uniformis Sheljuzhko. Iris 1944.57.p.63

Noct. 67.
p. I.

Hadena Schrk.

thalassina Hufn.

aberrational forms etc.

ab. achates Hubner. Samml. Eur. Schmett. 1809-13. pl. 106 f. 498.

Forewings in the figure show rather more red than usual with less variegation, but in my opinion it is a synonym of the typical form, the description of which is too brief to be of use in separating similar forms painted by artists so many years ago. The second figure called achates in Hubner fig. 610 is a much better painting of the usual type of thalassina.

ab. humeralis Haworth. Lep. Brit. 1809. p. 190.

Forewings cloudy brownish-grey.

This also is probably a synonym of the type form but most authors make it an aberration without the red tint, it would seem to be the common form in England.

ab. grisea Foltin. Zts. Wien. Ent. Ver. 1942. 27. p. 36.

Pale grey.

ab. pallida Cockayne. Ent. Rec. 1944. 56. p. 54.

The usual blackish-brown markings of the forewings are pale brown and the thorax, hindwings and abdomen are much paler than usual. This gives the insect a unicolorous appearance.

ab. nigrifusa Warren. Seitz 1909. 3. p. 71.

Wholly suffused with black, the orbicular stigma and traces of outer and sub-marginal lines remaining pale grey.

ab. unicolor Myers. Entom. 1964. 97. p. 165.

Forewings upperside unicolorous dark purple-brown ground colour, with the stigmata and transverse lines outlined in black, but with all pale markings obsolete, including the usually ever present and characteristic pale basal patch and whitish subterminal line. Hindwings grey-brown, only very slightly paler basally. Thorax of the same colour as forewings, abdomen very slightly darker than usual. Holotype ♂.

Noct. 68.
p. I.

Hadena Schrk.

contigua Schiff. Wien Verz. 1775. p. 82.
= ariae Esper. Eur. Schmett. 1789. 4 (2). p. 547. pl. 160 f. 8.
= spartii Brahm. Ins. Kal. 1791. 2. p. 323.

aberrational forms etc.

ab. dives Haworth. Lep. Brit. 1809. p. 189.

The paler form of the species, the area between the postmedian and subterminal lines very pale almost white.

ab. albomaculata Lempke. Tijdschr. Ent. 1940. 83. p. 237.

With large snow-white orbicular stigma.

ab. tangens Lempke. Tijdschr. Ent. 1940. 83. p. 237.

The inner line and outer line touch each other in the place of the claviform stigma, which has completely disappeared.

ab. subcontigua Eversmann. Bull. Mosc. 1852. I. p. 155.

Head, thorax and forewings black-grey, the last paler, grey sprinkled; the orbicular and reniform are paler than the ground and distinct, the inner and outer transverse lines are slightly emphasised by black lines; the wedge shaped stigma is not to be seen.

Noct. 69.
p. I.

Hadena Schrk.

(*bombycina* Hufn. — *glauca* Hubner.)
= *glauca* Hubner.

aberrational forms etc.

ab. *lappo* Duponchel. Hist. Nat. 1827. 7. p. 255 pl. III 6 f. 3.

Forewings greyish-black, lightly powdered with bluish with the two ordinary stigmata almost white but outlined in black. The claviform of the same colour. There are three transverse lines, the first grey dentate and parallel to the outer margin, the two others black waved, and enclosing the stigmata. The figure shows the transverse lines edged with white, otherwise it is a very dark insect. Tutt in his Brit. Noct. 3 p. 79 gives the correct description but than proceeds to call the form very pale and ashy.

ab. *quadriposita* Zetterstedt. Ins. Lap. 1840. p. 939.

"Similar to *lappo* and *glauca* but differs from *glauca* by more fuscous colour and by the 4 spots placed in pairs, the outer one slightly larger. Differs from *lappo* by the stripes in middle of wing." It presumably lacks the white claviform leaving only the two white spots on each wing, hence the name.

ab. *aperta* Hubner-Geyer. Samml. Eur. Schmett. 1828-32. pl. I 69 f. 800.

The figure shows the lighter grey-bluish markings lacking on a blackish ground. The stigmata alone have traces of pure white, the transverse lines are black, only traces of the cuneiform marking, generally characters are obscure.

ab. *confluens* Cockayne. Ent. Rec. 1952. 64. p. 35. pl. 2 f. 8.

The orbicular and reniform are united to form one large compound stigma; the forewing is shorter and broader than usual.

ab. *frigida* Zetterstedt. Ins. Lap. 1840. p. 939.

Similar to *quadriposita* Zett. (above) in which the two stigmata are distinct, in *frigida* they are obsolete and only present as rudiments.

This must be very near to *aperta* Hbn-Gey., in which the stigmata retain a trace of the usual white.

- dysodea Schiff. Wien Verz. 1775. p. 72.
- = spinaciae Viewig. Tab. Verz. 1789. 2. p. 70.
- = ornata de Vill. Linn. Ent. 1789. 2. p. 280.
- = flavicineta-minor Esper. Eur. Schmett. 1788?. 4. (I) p. 513 pl. 153
- = chrysozona Borkh. Naturgesch. 1792. 4 p. 264.
- = ranunculina Haworth. Lep. Brit. 1909. p. 183.

aberrational forms etc.

ab. *caduca* Herrich-Schäffer. Syst. Bearb. 1845?. 2. p. 266 pl. 94 f. 484.
Ground colour ash-grey without a trace of the usual yellowish mixture. The black marking is also more delicate. Hindwings with the middle line sharper, distinctly light margined on its outer side, thus giving the marginal dark band the appearance of being more sharply defined.

ab. *innocens* Staudinger. Horae Soc. Ent. Ross. (1870.) 1871. 7. p. 123 pl. I. f. 10.
The ground colour whitish in the forewing, in the hindwing almost white with a dull blackish outer band.
The excellent figure shows a blue-grey median band on a unicolorous whitish ground but the hindwings are the most aberrant being white at the base developing into pale fuscous at the margins.

ab. *koechlini* Thierry-Mieg. Le Nat. 1889. XI. p. 181.
On the forewing the basal and terminal areas are very deep slaty-grey without trace of white except two small lines of white points which separate the median band from the rest of the wing; hindwings very obscure with the band of the terminal area almost black.

ab. *plumbea* Obraztsov. Ent. Z. 1935. 49. p. 55.
Forewings with sharper markings, with a dark central area and with whitish outer margin without any trace of yellowish powdering.

ab. *nigrofasciata* Lempke. Tijdschr. Ent. 1940. 83. p. 234.
The central band of the forewing blackish, sharply contrasting, for the rest normal

ab. *turbida* Hof Jahrb. Karn 1897. 24. p. 174.
I have not seen the original description of this form. It is placed as a synonym of *koechlini* Th.-Mg. in Seitz.

- bicolorata Hufn. Berl. Mag. 1766. III. 4. p. 410.
= serena Schiff. 1775. p. 84.
= placida Esper. 1789. 4 (2). p. 596 pl. 166 f. 6.
= hieracii (Scriba.) Borkh. Scriba's Beitr. 1793. 3. p. 195. pl. 13 f. 1

The name *bicolorata* Hufn. is used for this species in the new Edition of South's Moths of the Brit. Isles.

bicolorata Hufn. typical form - - Forewings pale grey with the median area dark grey.

ab. *leuconota* Eversmann. Faun. Volg. 1842. p. 235.

"Thorax and body white. Forewings chalk-white, the median area black. Hindwings white external area blackish." Apparently with no subterminal markings on forewings. This is the extreme white form, most of our British specimens approach it but would not seem to be so extreme, especially as regards the hindwings.

ab. *leucomelaena* Spuler. Schmett. Eur. 1905. I. p. 175.

Thorax whitish, the basal and outer fields of the forewings white, the latter with distinct fine markings.

This is the common form in England.

ab. *albicans* Spuler. Schmett. Eur. 1905. I. p. 175.

The whole of the forewings, including the middle, field are whitish.

ab. *par* Donovan. Nat. Hist. Brit. Ins. 1801. 10. p. 32 pl. 338 f. 3.

The only character differing from typical specimens is perhaps the width of the median band. This is mentioned as "broad" in the description and appears so in the figure.

ab. *monticola* Duponchel. Hist. Nat. Lep. 1826. 6. p. 314. pl. 92 f. 4.

This may or may not be a form of *serena*, the figure is unlike any other form I have seen. The description is -- It somewhat resembles *serena*, the forewings are dirty-white crossed by a wide irregular brown central band margined by two waved black lines. The usual stigmata are white on this band and also bordered with black, the orbicular is very small. The base of the wing is brown with an irregular black line and the terminal border shows a sinuous, interrupted, brown line. The fringe white chequered with brown. Hindwings reddish-grey, transversely cut by a brown stripe.

The strangest character is the brown base of the forewing, not present in any *serena* studied.

ab. *obscura* Staudinger. Cat. 1861. Ed. I. p. 40. (Ed. 2. p. 92)

The var. B. of Guenee. "obscurior magis unicolor."

The ground colour darker, more ashy, with the median area only a little deeper in colour, and in which the stigmata are more vaguely marked and not encircled with black. The subterminal better marked, almost continuous, although spotted and not arranged as an M. Fringes dark.

Noct. 72.
p. I.

Hadena Schrk.

caesia Schiff. Wien. Verz. 1775. p. 82.
= dichroma Esper. Eur. Schmett. 1789. 4 (1) p. 519. pl. 155 f. 2.

aberrational form etc.

subsp. mananii Gregson. Entomologist 1866. 3. p. 103.
= doubledayi Milliere. Nat. Sic. 1886. 6. p. 2.

The form from the Isle of Man and Ireland, our British race.
Bluish lead-coloured, almost devoid of markings, except a few yellowish spots or patches.

ab. nigrescens Staudinger. Cat. 1901. Ed. 3 p. 162.
Much darkened, forewings black-grey with blue-grey mixture.

ab. clara Staudinger. Cat. 1901. Ed. 3 p. 162. (Hor. Soc. Ent. Ross. 14 p. 376.)
Forewings light blue-grey with the middle field pale, in one specimen reddish-white in the middle, and a similar coloured spot at the base.

or markings of conspersa
some with rather lighter markings,
two are bright ochre yellow

Noct. 73.
p. I.

Hadena Schrk.

~~now conspersa Schiff.~~
conspersa Schiff. Wien Verz. 1775 p. 71.
= nana Rott. (nec. Hufn.) 1776 Naturf. 9. p. 132.
= annulata Fabr. Gen. Ins. (Mantissa) 1776. p. 281.

aberrational forms etc.

ab. albimaculoidae Gregson. Young Nat. 1887. 8. p. 178.

Ground colour cold deep brown, shoulder-marks (first striga) only just indicated, many wavy black markings on the disc, on the outer margin the broad arrow-heads are black, the first stigma like that of albimacula is round, white with a dark centre, the exact colour of the ground of albimacula, as is also the black filling in between the black wavy lines, the second stigma is lost just as in albimacula, and the usual white marks of the typical form are merged into brown in this form. The form was obviously named by Gregson because of its likeness to albimacula, the orbicular having a brown spot in the centre as in albimacula and the ground colour of the wings brown.

ab. dealbata Staudinger. Iris 1892. 5. p. 365.

Darker than typical, wholly without the large white apical spot, without the conspicuous white on the inner margin and the white wavy subterminal very obsolescent. The large white spot below the upper stigmata is present and the orbicular is filled with white.

ab. suffusa Tutt. Brit. Noct. 1892. 3. p. 36. & 37.

The ground colour black or blacker than in the type, the normally white basal, inner and outer marginal areas are essentially of the ground colour, the white being reduced to a minimum existing principally around the reniform though to a much lesser degree than in the type.

ab. grisea-suffusa Tutt. Brit. Noct. 1892. 3. p. 37.

the intense black of ab. suffusa changed to blackish-grey, the white markings reduced as in suffusa.

ab. intermedia Tutt. Brit. Noct. 1892. 3. p. 36. & 38.

The white markings reduced to a minimum as in suffusa, only having them round the reniform but the ground colour with a distinct ochreous tint, not of a deeper black than the type as is the case in suffusa.

ab. ochraceae Gregson. Young Nat. 1887. 8. p. 178. (see Young Nat. 1885. 6. p. 263.)

= ochrea Gregson. Ent. Rec. 1891. 2. p. 306.

The first description of this form is in 1885 where no name is given. It reads - "They have neither the dark or light colours of the typical form; they are all more or less ochreous brown or yellow, without any light markings." ~~etc~~ (Act)

The name ochraceae was given to these specimens in Young Nat. 8. p. 178. 1887. ^a
but in the Ent. Rec. 2 p. 306 1891 Gregson called them "ochrea" with the description - "all the usual white parts obscured with ochre, the whole insect ochreous".

Various authors as a result have called the form "ochrea" "ochreae" and "ochraceae".

ab. obscurae Gregson. Ent. Rec. 1891. 2. p. 306.

All the light markings obscured with brown ochre colour. Forres.

ab. *obliterae* Robson & Gardner. List, Young Nat. 1886. 7. p. 23.

= *hethlandica* Staudinger. Iris 1892. 5. p. 365.

The whole insect dark olivaceous brown, usual markings faint, sometimes quite obliterated. Shetland.

Staudinger's *hethlandica* had the white on the forewings almost wholly wanting; they are often quite olive blackish-grey so that they have the appearance of a quite different species. Shetland.

ab. *fasciata* Tutt. Brit. Noct. 1892. 3. p. 37.

The forewings with a complete white band copying the allied species *compta*.

ab. *juncta* Lempke. Tijdschr. Ent. 1940. 83. p. 231. (description vol. 82. p. 197)

The contours of the reniform and orbicular join up **and** are united.

Noct. 74.
p. I.

Hadena Schrk.

- albimacula Borkh. Naturgesch. 1792. 4. p. 149.
- = compta Esper. (nec. Schiff.) Eur. Schmett. 1788. 4. p. 274 pl. II 7 f
- = concinna Hubner. Samml. Eur. Schmett. 1800-03. pl. II f. 51.

aberrational forms etc.

ab. ochrea Zwiiegelt. Zt. Ost. Ent. Ver. 1918. 3. p. 30.

The white colour is replaced by ochreous-yellow particularly on the right wing, whilst on the left only the small costal blotch is yellowish. The white marking on the base of the right wing is yellowish. It is interesting as there is a parallel form in conspersa ab. ochrea Gregson.

ab. fasciata Lempke. Tijdschr. Ent. 1940. 83. p. 232.

Forewings with a dark central shade.

ab. juncta Lempke. Tijdschr. Ent. 1940. 83. p. 232 (description vol. 82. p. 197)

The coltours of the reniform and orbicular touch each other or are united.

ab. semiconfluens Lempke. Tijdschr. Ent. 1940. 83. p. 232. (description vol. 82 p. 197.

Instead of joining the reniform and orbicular stigmata are united by a double line.

Noct. 75.
p. I.

Hadena Schrk.

compta Schiff. Wien Verz. 1775.p.70.

aberrational forms etc.

ab. juncta Lempke. Tijdschr. Ent. 1940. 83. p. 231. (description vol. 82. p. 197)
The contours of the reniform and orbicular join or are united.

ab. defasciata Hannemann. Int. Ent. Z. 1916. 10. p. 103.
The white central band is completely absent, the orbicular remaining filled with white.

ab. viscariae Guenee. Hist. Nat. Ins. (Spec. Gen. Lep) 1852. 2. p. 26.
The white band interrupted in its lower part by brown or yellow markings and narrowed opposite the claviform so that it no longer forms more than an almost square blotch. The ground of a normal colour but more mixed with yellow or light brown.

ab. albicincta Metschl. Int. Ent. Z. 1925. 19. p. 26.
Forewing from base to the orbicular dirty white on the costa. The white basal area runs out into the black-grey basal area in two streaks - a short one and a long one below it. The longer of these two streaks is edged below by a deep black line which curves towards the costa and encloses the claviform. Near the base this line thickens to form a spot-like swelling near the inner margin, which is surrounded by white. The pure white central band is widened between the claviform and inner margin to form a wedge pointing towards the base which, however, it does not quite reach. The part of the wing from the white orbicular to the outer margin is normal.

? ab. galactina Turati. Nat. Soc. 29. p. 25 Sep. fig.

? ab. griseans Turati. Atti. Soc. Ital. Sci. Nat. 62. p. 50 fig.

Noct. 76.
p. I.

Hadena Schrk.

- bicruris Hufn. Berl. Mag. 1766. 3. p. 302.
= capsincola Schiff. Wien Verz. 1775. p. 84.
= impressa Esper. Eur. Schmett. 1788. 4 (I). pl. 152 f. 3.

aberrational forms etc.

ab. capsincoloides Standfuss. Berl. Ent. Zts. 1893. 38. p. 360.

Differs from capsincola in having the outer side of the reniform deep black-brown and similarly deep black-brown between the stigmata as well as between the two transverse lines towards the inner margin, the last character causes the usually very distinct claviform to be almost obsolete on account of the deep colouring obscuring it. The waved subterminal is more conspicuous and distinct than in the type as well as the shape of the stigmata, especially the orbicular, which are notably larger than in capsincola. On the hindwing there is a pale band from the light anal spot up to the apical angle, lying somewhat parallel to the margin. The head, thorax and abdomen are all darker than type.

Described from a single ♀ from Corsica as a species but is probably an aberration of capsincola.

ab. juncta Lempke. Tijdschr. Ent. 1940. 83. p. 229. (described vol. 82 p. 197.

The reniform and orbicular are joined or united by their contours.

ab. bondii Turner. Ent. Rec. 55 p. (88)

This is not bicruris but an aberration of rivularis Fabr. See next species.

ab. ochreofusa Cockayne. Ent. Rec. 1952. 64p. 35.

Ground colour lighter brown than usual; the pale markings round the stigmata and all those in the distal half of the forewing are increased in width especially the submarginal line; fringes largely ochreous, a few brown streaks being present opposite the interneural spaces of the anterior half of the wing and more definite dark lines opposite those nearer to the anal angle. Thorax, abdomen and hindwings paler than usual.

Noct. 77.
p. 1.

Hadena Schrk.

- rivularis Fabricius. Syst. Ent. 1775. p. 99.
- = cucubali Schiff. Wien Verz. 1775. p. 84.
- = rivosa Strom. Norsk. Ins. 1783. 4. Danske Vid. Selsk. Schrift. 2. 77
- = triangularis Thnbg. Diss. Ins. Suec. 1784. 3.

aberrational forms etc.

ab. behensis Freyer. Neu Beitr. 1845. 5. p. 142 pl. 467 f. 4.

Similar to type form but with a very distinct yellow-white stripe along the costa of the forewing reaching from the apex to above the reniform. The stripe at its apical end is united with the white-yellow subterminal line. The ground colour is nearer that of capsincola, the peach-coloured bands being absent.

ab. bondii Turner. Ent. Rec. 1943. 55 Suppl. p. (87).

Described under bicurris but obviously belonging to this species when the actual specimen is seen, this is now in the R. C. K. coll. at Tring.

Turner described the figure in Newman's Brit. Moths p. 387. The white line from the base, running below the stigmata, is more conspicuously white and divides the wing into two distinct areas, the upper part much lighter, the markings lighter and somewhat larger, even the upper half of the usually dark submarginal band is white on which the black sagittate spots are very plainly depicted. The lower half of the wing below the dividing line is predominantly dark in contrast. The black patch below the line is extended in full width to the inner margin, the submarginal band is dark and complete as in the type.

This description gives no idea of the Type specimen, the main feature of which is the yellow suffusion which spreads over the area occupied by the stigmata and the upper half of the submarginal part of the wing, the subterminal is unusually broad and yellow. The basal area is lightly dusted yellow, the only normal dark part of the insect is between the ante and postmedian lines where a square of dark brown remains, from below the stigmata almost to the inner margin.

ab. pallida Cockayne. Ent. Rec. 1944. 56. p. 54.

All the dark markings of the forewings are replaced by markings of a soft brown colour, but a pink flush is present. The hindwings and abdomen are very pale brown, the thorax almost white

ab. disjuncta Lempke. Tijdschr. Ent. 1940. 83. p. 228.

The orbicular and reniform stigma do not touch each other.

ab. conjuncta Klemensiewicz. Spraw. kom. Fiz. (1911) 1912. 46. p. 11.

Forewings with both spots (stigmata) in the subdorsal costa, broadly confluent. This presumably means that there is no division at all on the lower edges of the reniform and orbicular, the two becoming one curved spot almost forming a "V".

Noct. 78.
p. I.

Hadena Schrk.

- no. 171111-1111
lepida Esper. Eur. Schmett. 1790. 4(2). p. 500. pl. 152 f. 2.
= carpophaga Borkh. Naturgesch. 1792. 4. p. 422.
= perplexa Hubner. Samml. Eur. Schmett. 1800-03 f. 89.
= repanda Freyer. Neu. Beitr. 1838. I. p. 63. pl. 34 f. 2.

aberrational forms etc.

lepida Esper. - - typical form - the ground brownish-ochreous with the markings darker brown.

ab. ochracea Haworth. Lep. Brit. 1809. p. 199.

The wings ochraceous with four transverse lines, the ordinary stigmata pale and one stigma blackish. The more detailed description then follows - Body and wings ochraceous, stigmata whitish, the third stigma (claviform) more or less blackish, four transverse lines, the first incomplete at the base, the second before the middle and the third curved behind the stigma and all made up of little beads and more or less margined with black. The fourth line wavy and next to the hind margin and at the apex often widened into a pler blotch; in the margin itself a narrower line made up of lunate-triangular black dots, the fringes yellow. Hindwings shining whitish to yellowish with fuscous border and yellow fringes.

It will be seen from this description that Tutt, and many authors copying him, who have made this a form with the markings more or less obsolete, are wrong. The lines etc are described in detail and the claviform is outlined in blackish. It would seem to be the bright ochreous form common in England and not the brownish tinted typical form badly figured in Esper.

ab. virgata-ochracea Tutt. Brit. Noct. 1892. 3. p. 30 & 31.

Pale ochreous in the basal and outer areas, the space between the ante and postmedian lines dark ochreous, forming a transverse band. The orbicular and reniform are pale.

ab. brunnea Tutt. Brit. Noct. 1892. 3. p. 30 & 31.

Ground colour dark ochreous, almost brown, with the markings almost obsolete.

ab. virgata-brunnea Tutt. Brit. Noct. 1892. 3. p. 30 & 31.

Dark ochreous ground colour with the central darker.

ab. pallida Tutt. Brit. Noct. 1892. 3. p. 30.

The ground colour white, with scarcely any tinge of ochreous. The outlines of the stigmata faintly marked, other wise no dark markings.

ab. ochrea-pallida Tutt. Brit. Noct. 1892. 3. p. 30.

The ground colour white but the outlines of the stigmata and transverse lines strongly tinted with ochreous.

ab. fusca-pallida Tutt. Brit. Noct. 1892. 3. p. 30.

The ground colour white with the typical markings of this species pricked out in dark fuscous, thus making even in this pale form an attempt to copy its congener, capsophila Dup.

ab. *virgata-pallida* Wightman. Ent. Rec. 1928. 40. p. 90.

The ground colour pure white, nearly all the markings obsolete in the inner and outer areas, the centre area deep red-brown on which deep background the stigmata show up clearly in paler brown.

ab. *aurantia* Cockayne. Ent. Rec. 1952. 64. p. 35.

Ground colour orange almost without markings, even the stigmata are almost invisible. Along the termen there is a row of black wedge-shaped dots and just outside them in the inner half of the fringe there is a row of orange-brown crescents. Hindwing ochreous with a faint submarginal band.

subsp. *capsophila* Duponchel. Hist. Nat. Lep. 1842. 4 Suppl. p. 100 pl. 58 f. 8.

Differs only by the darker colour and because the pale lines of the forewings are more whitish than yellowish.

The subspecies from the Isle of Man and Ireland, possibly from Wales but I have not seen specimens.

ab. *obsolescens* Richardson. Ent. Rec. 1952. 64. p. 272.

Forewings uniformly greyish-black in which the pale reniform and orbicular stigmata and a pale subterminal line are faintly visible.

Belongs to the subsp. *capsophila*.

ab. *suffusa* Tutt. Brit. Noct. 1892. 3. p. 32.

Specimens of *capsophila* which are generally black, or dark grey, rarely brown, in Britain.

Tutt says most of our British specimens belong to this form and that they are rarely brown. I don't profess to understand what he means, most of our long series are brown.

perplexa Schiff.
Wien. Verz. 1775, p. 313.
lepida Esp.
Eur. Schmett.

~~*perplexa* Schiff~~
Wien. Verz. 1775, p. 313. W
lepida Esp.
Eur. Schmett. 1790: 4(2): p. 500; pl. 152, f. 2.
carphophaga Borkh.
Nat. Schmett. Eur. 1792: 4, p. 422.
perplexa Hübn.
Samml. Eur. Schmett. 1800-03; pl. 19, f. 89.
repanda Fr.
Neu. Beitr. 1838: 1: p. 63; pl. 34, f. 2.

decimalis
confusa (73)

Noct. 79.
p. I.

Hadena Schrk.

barrettii Doubleday. Ent. Ann. 1864. p. 124. pl. I. f. 3.

aberrational forms etc.

ab. ficklini Tutt. Ent. Rec. 1898. 10. p. 151.
Somewhat grey. form from Cornwall.

ab. turbata Donovan. Cat. Macrolep. Ireland. 1936 p. 47.

Noct. 80.
p. I.

Anepia Hampson.

- irregularis* Hufn. Berl. Mag. 1766. 3. p. 394.
- = *echii* Borkh. Naturgesch. 1792. 4. p. 166.
- = *syngenesiae* Borkh. Scriba's Beitr. 1793. 3. p. 204. pl. 13 f. 5.
- = *brecciaeformis* Esper. Eur. Schmett. 1790. 4 (2) p. 79. pl. 198 f5

aberrational forms etc.

ab. hellwegeri Schawerda. Zts. Ost. Ent. Ver. 1919. 4. p. 31.

Wholly brown-yellow; the normally white-yellow stigmata and spots of the forewings are of the same brown-yellow as the rest of the wing.

ab. ochracea Huggins. Entom. 1952. 85. p. 185.

Forewings ochreous-buff, the usual dark brown markings appearing in darker buff. Hindwings ochreous -buff, the usual dark border only slightly darker than the basal area. Head, thorax and abdomen ochreous-buff. The whole insect in two shades only and is of very uniform and dingy appearance compared with the usual handsomely marbled tricoloured form.

ab. alboradiata Cockayne. Ent. Rec. 1952. 64. p. 35.

The orbicular runs basad to the basal line but is cut across by the antemedian line, and is joined to the reniform by a white line just in front of the median nervure; all the nervures are white and 2, 3 and 4 run right through the unusually dark subterminal. On the hindwing the border is darker than usual and there is a whiter wedge-shaped area between 3 and 4 running inwards from it.

Noct. 81.
p. I.

Orthosia Ochs.

gothica Linn.
= nun-atrum Schiff. (nom. nud.) Wien. Verz. 1775 p. 78.
= nun-atrum Hubner. Samml. Eur. Schm. 1802. f. 112.

aberrational forms etc.

ab. gothicina Herrich-Schaffer. Syst. Bearb. 1848. 2. p. 196 pl. 26 f. 125-126.

The ground colour is rust or reddish in the central area of the wing, with slaty-grey discoidals and similarly coloured shading on the costa, with pale transverse lines. There is no trace of black in the gothic mark. The wavy subterminal and interrupted row of dots on it are ochreous

The figure of nun-atrum in Hubner's Eur. Schm. f. 112 would appear to be this form but it is bad and apparently of a different colour between the stigmata in different copies, so it is treated here as a synonym of the type.

ab. suffusa Tutt. Brit. Noct. 1892. 2. p. 149 & 150.

The ground colour reddish, very rarely mottled, altogether more unicolorous and redder but the characteristic dark gothica mark well developed.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 149 & 150.

Bright red with dark gothica mark.

ab. obsoleta-rufa Tutt. Brit. Noct. 1892. 2. p. 149 & 150.

Bright red but with pale or obsolete gothica mark.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 149 & 150.

Deep reddish-brown (with purple tinge) with dark gothica mark.

ab. rufescens Tutt. Brit. Noct. 1892. 2. p. 149 & 150.

Pale reddish-grey, varying in the amount of reddish, some are almost as pale as ab. pallida Tutt with a slight reddish tinge, others are more grey and much more suffused. Most of the pale forms are much mottled in the central area, and about the subterminal line the pale mottlings have a somewhat ochreous tinge. It has the dark gothica mark.

ab. obsoleta-rufescens Tutt. Brit. Noct. 1892. 2. p. 149 & 150.

Pale reddish-grey with pale or obsolete dark gothica mark.

Similar to ab. gothicina H.-Sch. which is darker and duller red.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 149.

The palest form. Pale whitish-grey with a few dark markings and the gothica mark distinct, blackish or dark reddish-brown.

ab. obsoleta-pallida Tutt. Brit. Noct. 1892. 2. p. 149.

Pale whitish-grey with the ordinarily dark gothica mark of a pale colour and almost unicolorous with the rest of the wing.

ab. variegata Tutt. Brit. Noct. 1892. 2. p. 149.

Dark grey mottled, with paler in some specimens, especially about the central area and subterminal line. The characteristic gothica mark is well-developed.

ab. obsoleta-variegata Tutt. Brit. Noct. 1892. 2. p. 149.

Dark grey mottled with paler and with pale or obsolete gothica mark and therefore reduced to the ground colour.

gothica Linn. typical form - - the ground colour dark violet brown-grey.

ab. nigra Robson. Young. Nat. 1888. 9. p. 121.

= obscura Lenz. Osthelder Schmett. Sudbayern 1927. p. 312 pl. 15 f. 25.
Dark smoky-brown with the black "Hebrew Character" very distinct.
Lenz obscura was "dark brown".

ab. nictitans Lenz. Osthelder Schmett. Subayern. 1927 p. 312. pl. 15 f. 26.

The stigmata stand out unusually clear on account of their pale margins.

ab. obsolescens Lenz. Osthelder Schmett. Sudbayern. 1927 p. 312 pl. 15 f. 29.

All the markings with the exception of the black elements in the discal area more or less obsolescent.

ab. taeniata Lenz. Osthelder Schmett. Sudbayern. 1927 p. 312. pl. 15 f. 30.

With a strikingly distinct band inside the waved line before the outer margin.

ab. conflua Kiefer. Ent. Rundsch. 1913. 30. p. 32.

The dark brown area between the two stigmata (the gothica mark) is united with the dark longitudinal mark which is also dark brown. The ground colour as in type.

ab. circumsignata Hasebroek. Int. Ent. Z. 1915. 9. p. 36.

The black (of the gothica mark) completely surrounds the orbicular.

ab. hirsuta Warren. Seitz. 1910. 3. p. 90 pl. 22 row B.

A dark powdered form of ab. pallida Tutt, grey with a faint rufous tinge, thickly dusted with dark grey; the lines black, the inner one preceded by, the outer and subterminal followed by, a thick fuscous blackish shade. The black mark on the submedian fold before the outer line is slight, and the black of the cell is reduced to two narrow spots, one horizontal and pointed outwardly, touching the inner line, the other narrow, oblong and vertical, before the reniform.

ab. reducta Lenz. Osthelder Schmett. Sudbayern. 1927. p. 312

The orbicular without black at the base, only half the gothica mark present.

ab. expuncta Delahaye.

Description from Seitz 3 p. 115.

Ashy grey, mottled form without transverse lines, only the double subterminal is retained. The black gothica mark is absent except for a small triangular spot, all other markings are almost obsolete.

ab. aurifera Delahaye.

Description from Seitz 3 p. 115.

Reddish-yellow to golden-yellow, brightly marked and dusted with violet..

ab. cana Valle. Anim. Fenn. 1940. 4. p. 307.

ab. nigrilinea Cockayne. Ent. Rec. 1952. 64. p. 35.

The postmedian line is black and clearly defined and from it black scales run outwards along the nervures; the pale ground colour inside the subterminal line makes the darkened nervures unusually distinct. The antemedian line is also black and clearly defined.

ab. albomarginata Cockayne. Ent. Rec. 1952. 64. p. 36.

From the subterminal line to the termen the ground colour is almost white through which the slightly darkened nervures run; the crescentic marginal interneural dots are present. Hindwing with the border nearly white between nervures 2 and 3, and only a little darker in the preceding and following interneural space.

ab. albescens Cockayne. Ent. Rec. 1952. 64. p. 36. pl. 2 f. 10.

Forewing with the ground colour whitish with a faint tinge of fawn; all the markings pale fawn colour. Hindwing whitish tinged with greyish fawn. Head, including antennae, thorax and abdomen pale fawn.

ab. conjuncta Lempke. Tijdschr. Ent. 1940. 83. p. 218.

The dark streak on the outer transverse line unites this line with the inner one, thus the claviform fails (is filled up).

ab. estrigata Lempke. Tijdschr. Ent. 1940. 83. p. 218.

The dark streak on the outer transverse line fails completely.

ab. cruda Lempke. Tijdschr. Ent. 1940. 83. p. 218.

The inner and outer lines black, sharply contrasting.

ab. clausa Lempke. Tijdschr. Ent. 1940. 83 p. 218. (description vol. 82 p. 197)

The inner and outer transverse lines join at the inner margin.

ab. separata Fremont. Proc. Verb. Soc. Linn. Bordeaux 1929. 81. p. 136.

The black gothica mark is broken through in the middle.

This would appear to be transitional to *ab. reducta* Lenz, possibly not so extreme.

Noct. 82.
p. I.

Orthosia Ochs.

miniosa Schiff. Wien Verz. 1775 p. 88.

aberrational forms etc.

miniosa Schiff. typical form - - Forewings unicolorous light reddish, the marking more or less distinct.

ab. *rubricosa* Esper. Eur. Schmett. 1786. 3. p. 381. pl. 75 f. 3-4.
Pale reddish with the central area darker and forming a band.

ab. *virgata* Tutt. Brit. Noct. 1892. 2 p. 155.
Basal and outer areas pale grey with a greenish tint, the central area filled in with red forming a distinct central band.

ab. *pallida* Tutt. Brit. Noct. 1892. 2. p. 155 & 156.
The palest form. Forewings unicolorous ochreous-grey with scarcely a trace of the reddish colour of the type. The transverse lines paler, the stigmata rather darker than the ground.

ab. *rufa* Dannehl. Ent. 1. 1926. 39. p. 180.
Uniformly dark red-yellow, not only in the central area.

ab. *juncta* Lempke. Tijdschr. Ent. 1940. 83. p. 214. (description vol. 82 p. 197)
The contours of the reniform and orbicular touch each other.

Noct. 83.
p. I.

Orthosia Ochs.

- cruda Schiff. Wien Verz. 1775. p. 77.
- = cruda Hbn. Eur. Schmett. pl. 36 f. 173 (ambigua in error)
- = cruda Tutt. Brit. Noct. 1892. 2. p. 155.

aberrational forms etc.

ab. pulverulenta Esper. Eur. Schmett. 1786. 3. p. 386. pl. 76 f. 5-6.
The ground colour dark reddish grey-brown.

cruda Schiff. typical form - - the ground colour brownish-grey.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 154.
The palest form. Forewings pale greyish or ochreous -white with a very slight, if any, reddish tinge. The males particularly have the reniform well marked and the elbowed line often forms a very distinct row of tiny black dots.

ab. pusillus Haworth. Lep. Brit. 1803. p. 124.
Forewings greyish without the brown tint

ab. nanus Haworth. Lep. Brit. 1803. p. 123.
The ground colour pale reddish-grey.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 154-155.
Forewings bright red, often quite rosy.

ab. irroratae Robson. Young Nat. 1888. 9. p. 122.
Forewings grey, not reddish, with the surface of the wing distinctly speckled with darker scales.
Very similar to pusillus Haworth but presumably more speckled or irrorated with darker.

ab. haggarti Tutt. Ent. Rec. 1902. 14. p. 182-3. (see Ent. Rec. 14 p. 130)
Tutt named the form taken by J. C. Haggart and described by him as "black" on p. 130
Tutt's description on p. 182-183 is rather different and does not give such an impression of darkness - - Forewings uniform dark brown, the outline of the stigmata and submarginal line yellowish. I would call the form dark blackish-brown from the specimens I have seen, and Tutt goes on to say that they superficially resemble in some aspects the melanic form of *C. viminalis*.

ab. nigropunctata Wehrli. Verh. N. Ges. Basel. 1917. 28. p. 240.
Forewings with distinct darker transverse lines, each with black dotting on the veins.

ab. nictitans Lempke. Tijdschr. Ent. 1940. 83. p. 214.
The orbicular and reniform stigmata filled with dark, with sharp pale circumscription.

ab. obsolescens Lempke. Tijdschr. Ent. 1940. 83. p. 214.
Markings very indistinct, hardly visible.

ab. marginata Cockayne. Ent. Rec. 1952. 64 p. 36.
Forewing with the area from the submarginal line to the termen whitish with a slight sprinkling of brown scales.

Noct. 83.
p.2.

cruda Schiff. continued.

ab. heckendorni De Bros. Mitt. Ent. Ges. Basel. (N. F.) 2. p. 98.

stabilis Schiff. Wien Verz. 1775. p. 76.
 = cerasus Haworth. (nec. Fabr.) Lep. Brit. 1803 p. 123. 243.

aberrational forms etc.

stabilis Schiff. typical form - - the forewings light reddish-brown.

ab. obliqua Villers. Caroli Linn. Ent. 1789. 2 p. 189.
 The forewings dark grey.

ab. grisea Spuler. Schmett. Eur. 1906. I. p. 240.
 Pure grey, rare.

ab. suffusa Tutt. Brit. Noct. 1892. 2. p. 152.

The general colour of the forewings is blackish-grey, sometimes brownish owing to a red tint in the ground colour. The whole area of the wing is suffused with black scales, the stigmata and subterminal are outlined in paler and distinct; the central shade is generally well marked and dark.

Tutt named this form from the figure in Hubner pl. 36 f. 171 which apparently varies considerably in different copies, in Turner's copy Turner states that it is red-brown not grey, in our copy it is greyish-brown with no suffusion of dark scales mentioned by Tutt. The description given by Tutt must stand for suffused and not the figure in Hubner.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 152 & 153.

Forewings bright red with a considerable amount of variation in the colour of the outlines of the stigmata etc., the dark central band is rarely strongly developed.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 152.

Pale stone-grey, sometimes slightly ochreous.

ab. violacea Caradja. Acad. Romana Mem. Soc. Stunt 1931. (3). 7. no. 8. p. 45 ?

The marginal area suffused with purple-violet.
 Description from Turner.

ab. rufannulata Haworth. Lep. Brit. 1809. p. 243.

The outlines of the stigmata and subterminal are reddish instead of yellow. Tutt is wrong in retaining this name for all dark reddish forms and ignoring the colour of the stigmata outlines, Haworth obviously named it on account of the "annulets" and not the ground colour.

ab. flavilinea Heinrich. Dtsch. Ent. Z. (1916) p. 518. 1917.

The subterminal of the forewing fairly broad, yellow and without the shading on its inner side.

ab. extincta Heinrich. Dtsch. Ent. Z. (1916) p. 518. 1917.

= obsolescens Lenz. Osthelder Schmett. Sudbayern. 1927. p. 315. pl. 16 f. 7.

The outlines of the stigmata of the same colour as the ground so that they are almost invisible except with a lens.

Lenz obsolescens had all the markings more or less lost in the ground colour.

ab. nictitans Lenz. Osthelder Schmett. Sudbayern 1927 p. 315 pl. 16 f. 6.

The outlines of the stigmata and similar lines before the outer margin strikingly clear, or standing out sharply.

ab. cruda Lenz. Osthelder Schmett. Sudbayern. 1927. p. 314 pl. 15 f. 23.
With sharply defined lines on the edges of the discal area. (ante and postmedian.)
= cruda Cockayne. Ent. Rec. 1952. 64. p. 36.
This had also the basal line distinct but can hardly be considered different.

~~ab. fasciata Lenz. Osthelder Schmett. Sudbayern. 1927 p. 315 pl. 15 f. 22.
With dark central band and the reniform also filled with similar colour.~~

ab. junctus Haworth. Lep. Brit. 1803. p. 123.
= tangens Heinrich. Dtsch. Ent. Z. (1916) p. 518. 1917.
The reniform and orbicular stigmata touch each other.

ab. fasciata Lenz. Osthelder Schmett. Sudbayern 1927. p. 315 pl. 15 f. 22.
= variegata Dannehl. Mitt. Munch. Ent. Ges. 1929 19. p. 114.
A dark central band or middle shadow well developed from the inner side of the reniform down to the inner margin.

ab. confluens Lempke. Tijdschr. Ent. 1940. 83. p. 210. (description vol. 82 p. 197)
The orbicular and reniform joined forming one single contour, their normal boundary absent at the point of juncture.

ab. albescens Cockayne. Ent. Rec. 1952 64. p. 36.
Forewing whitish with a slight tinge of brown, head and thorax of the same colour.
The markings are just visible in a slightly darker shade.

ab. marginata Cockayne. Ent. Rec. 1952. 64. p. 36. pl. 2 f. II.
Forewing dark brown with the area between the pale submarginal line and the termen pale greyish-brown with whitish nervures running through it.

Noct. 85.
p. I.

Orthosia Ochs.

- populeti Fabr. Spec. Ins. I78I. 2. p. 20I.
- = populi Strom. I783. (see aberration below.)
- = subplumbeus Haworth. Lep. Brit. I803. p. I2I.
- = gracilis Stephens. Ill. Haust. I829. 2. p. I4I.

aberrational forms etc.

populeti Fabricius. typical form - - Forewings dark greyish with distinct stigmata and some black spots on the subterminal.

ab. populi Ström. Kongelige danske Vidensk. Selsk. Skrift, Nye Saml. I783. p. 76 f. 24. Forewings reddish-grey with a complete row of black spots along the subterminal.

ab. ocellaris Freyer. Neu Beitr. I833. I. p. I68 pl. 95 f. 2. Forewings greyish with a complete row of black spots along the subterminal.

ab. rufomaculata Lempke. Tijdschr. Ent. I940. 83. p. 2I6. The spots on the subterminal line not black but reddish.

ab. immaculata Lempke. Tijdschr. Ent. I940. 83. p. 2I6. The spots on the subterminal line fail completely, other markings clear.

ab. obsoleta Tutt. Brit. Noct. I892. 2. p. I46 & I47. The stigmata almost or quite obsolete as also are the basal lines; the elbowed line when at all distinguishable, very pale.

ab. donasa Esper. Eur. Schmett. I785. 3. p. 264. pl. 52 f. 7. Forewings grey with reddish-brown spot in the middle field. The figure is extremely bad and does not look like populi. The reddish-brown spot is on the inner side of the reniform and more or less continues as a middle shadow down to the inner margin. Tutt's description is amazing - - Grey, with the central area reddish-brown.

ab. nigra Tutt. Brit. Noct. I892. 2. p. I47 & I48. The ground colour quite black, the transverse lines slightly paler with very dark edging, there is a pale ring to the orbicular and reniform whilst the black dots on the subterminal are of a dark red-brown colour.

ab. intermedia Stephens. Ill. Haust. I829. 2 p. I40. Forewings dark greyish-brown.

ab. cruda Lempke. Tijdschr. Ent. I940. 83. p. 2I7. Forewings with blackish, sharply contrasting transverse lines.

ab. nigropunctata Dufraene. Lamb. I935. 35. p. 52. Like the typical form but the dark spots near the subterminal line are very black. One might confuse the form with certain forms of munda but in that species the spots are placed in groups of two.

IV

ab. atropurpurea Geest. Zts. f. Ent. I903. 8. p. 3I3. Dark red-brown, of very dull and thick coloration. The stigmata and subterminal narrowly pale yellow.

ab. atropunctata Geest. Zts. f. Ent. 1903. 8. p. 313.

Pale grey, the subterminal with a perfect row of black dots.

This must be very similar to *ocularis* Freyer, possibly paler grey and with a more conspicuous ("perfect") row of subterminal spots.

ab. diffusa Cockayne. Ent. Rec. 1952. 64. p. 36. pl. 2 f. 13.

All the usual markings are very indistinct, there is no median shade, the subterminal line is scarcely visible and the usual dots, reddish or black, are absent.; the stigmata are darker than the ground colour surrounding them but lack the usual pale ring round them; there is a narrow pale marginal line.

Remove.

ab. plumbea Richardson. Ent. Rec. 1952. 64. p. 272 pl. 9 f. 21. (Now determined incerta)

Forewings uniform leaden grey-brown, in which the paler orbicular and subterminal lines are barely distinguishable. Usual dots just inside subterminal lines almost invisible. Hindwings pale grey-brown.

ab. tremuleti Tetens.

Noct. 86.
p. I.

Orthosia Ochs.

incerta Hufn. Berl. Mag. 1766. 3. p. 298, 424.
= instabilis Hubner. Samml. Eur. Schmett. 1800-03 f. 165.

aberrational forms etc.

incerta Hufn. typical form - - forewings clear, gleaming reddish-brown with distinct markings. Very variable.

ab. instabilis Fabricius. Mantissa 1787. 2 p. 146.
Forewings light grey with a darker, rust coloured middle shadow,

ab. contacta Esper. Eur. Schmett, 1790, p. 496. pl. 151 f. 2.
Forewings dull red-brown.

ab. trigutta Esper. Eur. Schmett. 1790. 4. p. 474. pl. 147 f. 4.
Forewings light brownish-grey with a darker median band, or shadow.

ab. pallida Lampa. Ent. Tidskr. 1885. 6. p. 72.
Forewings whitish-grey, transverse rows of black dots indicating the transverse lines.

ab. nebulosus Haworth, Lep. Brit. 1803. p. 120.
Dark slaty-grey with reddish tinted central shade or band.

ab. subsetaceus Haworth. Lep. Brit. 1803 p. 120.
Grey clouded with darker, almost unicolorous only the stigmata and subterminal standing out.

ab. angustus Haworth. Lep. Brit. 1803 p. 122.
= obscura Lenz. Osthelder Schmett Sudbayern. 1927 p. 315,
Dark brownish without the red tint.
Lenz obscura was unicolorous brown not brown-black like atra.

ab. fuscatus Haworth. Lep. Brit. 1803 p. 122.
= melaleuca Lenz. Osthelder Schmett Sudbayern 1927 p. 315.
Blackish the stigmata and subterminal line paler.

ab. grisea-fuscatus Tutt. Brit. Noct. 1892. 2. p. 142.
The black forewings dusted with grey scales especially in the basal area.

ab. atra Tutt. Brit. Noct. 1892. 2. p. 139 & 142.
Of a dull sooty black, not shining with scarcely the slightest trace of any markings whatever.

ab. rufa Tutt. Brit. Noct. 1892. 2. p. 139 & 142.
Bright red, unicolorous.

ab. subcarnea Warren. Seitz. 1910. 3. p. 91.
Greyish flesh-colour with the median and presubmarginal shades deep brown. Hindwings dull white with submarginal spot and cellspot dark.

ab. ~~olivacea~~ Warren. Seitz. 1910. 3. p. 92.

Ashy grey with a strong olive flush, the median shade and clouds before the submarginal line are deep olive. Hindwing pale to dark grey with an olive tinge.

ab. *coerulescens* Tutt. Brit. Noct. 1892. 2. p. 139.

Pale slaty or bluish-grey, with central band.

ab. *rufo-grisea* Tutt. Brit. Noct. 1892. 2. p. 139 & 140.

Unicolorous reddish-grey, the markings indistinct although the median shade and stigmata are generally traceable.

ab. *virgata-brunnea* Tutt. Brit. Noct. 1892. 2. p. 139 & 140.

The grey tint reduced to a minimum, the prevailing colour dark brown but the median shade stands out conspicuously.

ab. *unicolor-brunnea* Tutt. Brit. Noct. 1892. 2. p. 139 & 140.

Dark brown, more or less unicolorous, the median shade almost obsolete.

ab. *fasciata* Lenz. Osthelder Schmett. Sudbayern 1927. p. 315 pl. 16 f. 10.

With dark central band.

ab. *junctoides* Lempke. Tijdsch. Ent. 1964. 107. p. 99..

The orbicular and reniform touch each other.

ab. *semiconfluens* Lempke. Tijdschr. Ent. 1940. 83. p. 209. (description vol. 82. p. 197)

Instead of touching the orbicular and reniform are united by a double line.

juncta Foltin. Zts. Ost. Ent. Ver. 1938. 23. p. 126.

= *confluens* Lempke. Tijdschr. Ent. 1940. 83. p. 209. (description vol. 82. p. 197)

The orbicular and reniform enclosed in one single contour, their boundary absent at the point of juncture. Lempke states that Foltin's *juncta* is of this form.

ab. *dentatelineata* Lempke. Tijdschr. Ent. 1940. 83. p. 209.

The submarginal line sharply dentated, with two clear W marks.

ab. *flavilinea* Lempke. Tijdschr. Ent. 1940. 83. p. 209.

The submarginal line clearly enlarged, pale yellow, sharply contrasting.

ab. *sinelinea* Lempke. Tijdschr. Ent. 1940. 83. p. 209.

The submarginal line fails completely.

ab. *pluriguttata* Cockayne. Ent. Rec. 1952. 64. p. 37.

The ground colour of the forewings is very pale and heavily sprinkled with dark striae,

ab. *postalbida* Cockayne. Ent. Rec. 1952. 64. p. 37.

The ground colour of the forewing nearly black. The hindwing is whitish lightly powdered with dark scales; there is a dark discoidal spot and a dark border; fringes white. Superficially it is more like *O. gracilis* than *incerta*.

ab. *elongata* Cockayne. Ent. Rec. 1951. 63. p. 229.

The orbicular stigma is greatly elongated towards the base and the elongated portion has a dark central streak.

ab. griseovariegata Valle. Anim. Fenn. 1940. 4. p. 309.

ab. plumbea Richardson. Ent. Rec. 1952. 64. p. 272.

Forewings uniform leaden grey-brown, in which the paler reniform and orbicular and the subterminal line are barely distinguishable. An extremely faint reddish clouding can also be seen in the median and subterminal areas.

Noct. 87.
p. I.

Orthosia Ochs.

munda Schiff. Wien Verz. 1775. p. 76.
== gemina Borkhausen. Naturgesch. 1792. 4. p. 705.

aberrational forms etc.

munda Schiff. typical form - - the ground colour light brownish-grey with two black spots before the subterminal.

ab. bimaculatus Haworth. Lep. Brit. 1809. p. 121.
Like the typical form but pale rusty (ferruginous). Two spots on subterminal as in type. Haworth apparently separated this on account of its ground colour since he calls it "the ferruginous Drab."

ab. geminatus Haworth. Lep. Brit. 1809. p. 121.
Wings ashy-grey, somewhat clouded, three twin-spots on the subterminal line instead of the main large twin spot of the typical form.
This presumably means a chain of small spots on the subterminal as opposed to Haworth's next form bimaculatus which had only the two main spots of the type.

ab. immaculata Staudinger. Cat. 1871. Ed. 2. p. 114.
The black twin spots on the subterminal completely absent.

ab. rufomaculata Lempke. Tijdschr. Ent. 1940. 83. p. 215.
The spots on the subterminal not black but brownish or reddish.

ab. vittata Spuler. Schm. Eur. 1908. I. p. 241.
The marginal spots developed into wedges, in all the marginal interneural spaces.

ab. pallida Tutt. Brit. Noct. 1892. 2. p. 135 & 136.
Whitish or pale greyish-white ground colour.

ab. immaculata-pallida Tutt. Brit. Noct. 1892. 2. p. 136.
Whitish or greyish-white, no distinct transverse lines, central shade and stigmata rather indistinct, and no black spots on the subterminal.

ab. bimaculatus -pallida Tutt. Brit. Noct. 1892. 2. p. 136.
Whitish or whitish-grey, the transverse lines and stigmata generally indistinct, one pair of small black dots on the subterminal.

ab. geminatus-pallida Tutt. Brit. Noct. 1892. 2. p. 136.
Whitish or whitish-grey, with the transverse lines, central shade and stigmata generally distinct, and two, three, or more pairs of small black spots on the subterminal.

ab. grisea Tutt. Brit. Noct. 1892. 2. p. 135 & 136.
Dark grey ground, generally much more powdered with dark scales.

ab. immaculata-grisea Tutt. Brit. Noct. 1892. 2. p. 136.
Dark grey ground with the transverse lines, central shade and stigmata indistinct, and with no black spots on the subterminal.

ab. *bimaculatus-grisea* Tutt. Brit. Noct. 1892.2.p. 136.

Dark grey ground with the transverse lines, central shade and stigmata more or less indistinct, but with one pair of spots on the subterminal.

ab. *geminatus-grisea* Tutt. Brit. Noct. 1892.2.p. 136.

Dark grey ground, with the transverse lines, central shade and stigmata more or less distinct, and two, three, or more pairs of small black dots on the subterminal.

ab. *rufa* Tutt. Brit. Noct. 1892.2.p. 135 & 136.

Deep reddish-brown ground colour.

ab. *immaculata-rufa* Tutt. Brit. Noct. 1892.2.p. 136.

Deep reddish-brown ground without black spots on the subterminal.

ab. *bimaculatus-rufa* Tutt. Brit. Noct. 1892.2.p. 136.

Deep reddish-brown ground with one pair of black spots on the subterminal.

ab. *geminatus-rufa* Tutt. Brit. Noct. 1892.2.p. 136.

Deep reddish-brown ground with two, three, or more pairs of black spots on the subterminal.

ab. *kammeli* Rebel. Verh. zool.-bot. Ges. Wien. 1923.72.p. (96).

The ground colour of the forewing strongly powdered with blackish-brown, the stigmata outlined in ochre-yellow, the marginal two black spots very strong, the transverse lines washed out, the most distinctly marked being the central shade, the fringes strongly powdered grey, with much sharper marked pale basal line. Hindwing blackish-grey much darker than in typical form, the central portion of the fringes dark grey. Head, thorax and abdomen dark grey. Underside of all wings deep blackish with paler brownish fringes.

ab. *cruda* Foltin. Zts. Ost. Ent. Ver. 1938.23.p. 126.

The transverse lines bordering the middle field standing out very strongly.

ab. *obsolescens* Lenz. Osthelder Schmett. Sudbayern. 1927.p. 317.

All markings more or less lost in the ground colour.

ab. *fasciata* Lenz. Osthelder Schmett. Sudbayern 1927.p. 317.

With a dark middle shadow or central band.

ab. *semiconfluens* Lempke. Tijdschr. Ent. 1940.83.p. 215. (description vol. 83.p. 197)

Instead of joining by their contours the reniform and orbicular are united by a double line.

ab. *striata* Tutt. Brit. Noct. 1892.2.p. 136.

On the forewing there are two black longitudinal lines, one running along the subcostal nervure between the abbreviated and complete basal lines, the other along the median nervure, from the abbreviated basal line (at the origin of the former line), till it joins the dark spot filling up the lower part of the reniform. There is also a black quadrate spot between the stigmata, the orbicular being almost indistinguishable, besides which the transverse lines are well marked.

ab. *strigata* Slastshevsky. Horae Soc. Ent. Ross. 1911.40.p. 84-85.

In one ♂ of ab. *immaculata* the two transverse lines are very distinctly pronounced giving the specimen a completely different appearance.

In his latin description the author does not mention the fact that the example is *immaculata*, otherwise the form is a synonym of ab. *cruda* Foltin.

ab. renilinea Cockayne. Ent. Rec. 1952. 64. p. 36.

There is a narrow wedge-shaped streak of dark scales running from the lower end of the reniform almost as far as the antemedian row of dots.

ab. albescens Cockayne. Ent. Rec. 1952. 64. p. 37. pl. 2 f. 14.

All parts are whitish with a slight tinge of rufous, the usual markings are present in a slightly darker shade of the same colour. Albinistic form.

ab. flavo-linea Richardson. Entom. 1958. 91. p. 212; pl. 4, f. 3.

The pale yellow subterminal line is strongly contrasted with the uniform deep orange-brown of the forewings.

Noct. 88.
p. I.

Orthosia Ochs.

- advena Schiff. Wien. Verz. 1775.
- = opima Hubner. Samml. Eur. Schm. 1808-09. fig. 424.
- = distinctae Robson. Young Nat. 1888. 9. p. 122.
- = virgata Lenz. Osthelder Schm. Sudbayern 1927 p. 316.

ab. firma Hubner. Samml. Eur. Schm. 1808-09. pl. 147 f. 676.

Darker ground colour than type, purplish-grey. Hindwings also darker. The main feature appears to be the middle shadow which runs from the inner margin upwards, and between the reniform and orbicular, instead of enclosing the orbicular, in other words the dark, central area is narrowed.

ab. mediolugens Schultz. Ill. Zts. Ent. 1900. 5. p. 349.

The dark median shade, found in typical specimens, is especially strong and broadened and occupies almost the whole of the median area. Presumably with a darker, more conspicuous median band than the type.

advena Schiff. (opima Hbn) typical form - - purplish grey, the transverse lines very strong and enclosing a dark median band, the subterminal also strong. From Hubner's figure.

ab. grisea Tutt. Brit. Noct. 1892. 2. p. 143 & 144.

= griseor Strand. Arch. Naturg. 1916. 82. A2. p. 30.

Greyish-white with the central shade quite or almost obsolete.

Strand's griseor was "Greyer, without rufous suffusion in the median area only an indistinct median shadow."

The "cinerae" of Robson would appear to be a group name so it is not used in place of grisea Tutt, although it has priority. (Young Nat. 1888. 9. p. 122)

ab. virgata-grisea Tutt. Brit. Noct. 1892. 2. p. 143 & 144.

Greyish-white with the central shade developed into a band enclosing the stigmata

ab. intermedia Tutt. Brit. Noct. 1892. 2. p. 143 & 144.

= obscura Lenz. Osthelder Schm. Sudbayern 1927 p. 316.

Greyish-brown, the smoky-brown central shade infuses the whole of the forewing which thus becomes of a greyish smoky-brown colour, not deep brown of brunnea. Lenz's obscura had besides the greyish-black middle field, the basal and marginal fields also dark grey. This would seem to make it little different from Tutt's intermedia.

Robson in Young Nat. 1888. 9. p. 122 gives for this form the name "fuscatae" which is a group name so not used in place of Tutt's intermedia although it has priority.

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 143 & 144.

Dark brown, with the stigmata outlined in paler and the subterminal paler throughout its length.

ab. nigra Lempke. Tijdschr. Ent. 1940. 83. p. 213.

Forewings blackish, the circumscription of the stigmata and submarginal line pale.

ab. fuscus Robson. Young Nat. 1888. 9. p. 122.

= unicolor Tutt. Brit. Noct. 1892. 2. p. 143 & 144.

= rufo-fusca Strand. Arch. Naturg. 1916. 82. A2. p. 30.

Unicolorous dark brown with no band.

Tutt's unicolor was dark brown, unicolorous, even the stigmata and subterminal blend with the ground colour.

Strand's rufo-fusca was wholly suffused with fuscous-brown with a reddish tinge.

ab. lativittata Cockayne. Ent. Rec. 1951. 63. p. 229.

The ground colour blackish-brown becoming a little lighter in the distal part of the wing where the nervures are darker than the ground. The white submarginal line is more than double the normal width.

Noct. 88.
p. 2.

advena Schiff. (opima Hbn) continued.

Noct. 89.
p. I.

Orthosia Ochs.

- gracilis Schiff. Wien. Verz. 1775. p. 76.
- = collinita Esper. Eur. Schmett. 1787-89? 4 (2). p. 505 pl. 152 f. 6.
- = lepida Brahm. Ins. Kal. 1791. 2 p. 271.
- = sparsus Haworth. 1809. p. 122.

aberrational forms etc.

ab. pallida Stephens. Ill. Haust. 1829. 2. p. 143.

Forewings of a nearly uniform pale rufous-brown with the stigmata, having a slender pale margin, alone conspicuous. The subterminal rufous, margined externally with pale ochraceous, followed by a row of very minute fuscous dots. Hindwings rather dusky with the cilia pale rufescent.

Tutt's description of this form is "greyish-white", he makes no mention of the rufous subterminal which is not common in gracilis. Lempke also describes it as "greyish-white without black scales". The form would seem to be quite different from this and probably named because the reddish subterminal was conspicuous on the pale rufous-brown ground.

gracilis Schiff. typical form - - the ground colour light grey, strongly dusted with black scales.

ab. rosea Tutt. Brit. Noct. 1892. 2. p. 145.

Pale reddish or orange, not mottled with black scales.

Tutt says these are "miniosa coloured", stating that Guenee erroneously referred the form to Stephens pallida, he then makes the extraordinary statement that pallida is a "white" form, despite Stephens own description of "pale rufous-brown". If the form is not a synonym of pallida Stephens it must be confined to specimens of a definite reddish tone.

ab. rosea-sparsus Tutt. Brit. Noct. 1892. 2. p. 145 & 146.

Pale reddish or orange, mottled with black scales.

ab. rufescens Cockerell. Entom. 1889. 22. p. 4. (Proc. S. Lond. Ent. Soc. 1886. p. 34-35.)
The ground colour "reddish".

Cockerell named this form from specimens exhibited by Mr. R. Adkin at a meeting of the South London Ent. Soc. on March 4th, 1886 where they were merely described as "reddish" forms from Kent Marshes, the form being also taken by Mr. Carrington in the New Forest. He thought it was really the Rannoch form.

Tutt is therefore quite wrong in describing the form as "very dark red-brown", he refers to specimens exhibited by Mr. P. Bright and gives the reference Ent. Rec. I p. 216 but here also they are described as "red".

ab. brunnea Tutt. Brit. Noct. 1892. 2. p. 145 & 146.

The ground colour dull red-brown or almost unicolorous dark-brown. New Forest. Tutt refers in this description to ab. rufa and says brunnea is an extreme form of it, it would appear to be a mistake and should read rufescens.

ab. obscurior Strand. Arch. Naturg. 1916. 82. A2. p. 30.

Forewing suffused with fuscous-brown.

Possibly a synonym of the preceding brunnea Tutt but since Tutt's form was from the New Forest it is most likely brunnea has a strong tint of red despite his first description on p. 145 "unicolorous dark-brown", which he contradicts on the next page, "dull red-brown".

ab. obscura Lenz. Osthelder. Schmiett. Sudbayern. 1927. p. 317.
The ground colour dark grey.

ab. nigra Turner. Ent. Rec. 1940. 52. Suppl. p. (225)
Entirely black, except the edging of the stigmata and the subterminal line which remain pale.

ab. alba Cockayne. Ent. Rec. 1951. 63. p. 229. pl. 7 f. I.
The head, thorax, abdomen and forewings white or very pale cream, the black dots of the postmedian row are very small, the stigmata scarcely visible. Hindwing white but in some examples there are some grey scales near the margin.

ab. marmorata Lenz. Osthelder Schmiett. Sudbayern 1927. p. 317.
Dark striations, or dashes, on the pale ground.
This probably means the row of postmedian spots are elongated.

ab. nictitans Lenz. Osthelder Schmiett. Sudbayern. 1927. p. 316.
With lighter edges to the stigmata and subterminal line.
These apparently lighter than the ground colour, thus standing out distinctly.

ab. obsolescens Lenz. Osthelder Schmiett. Sudbayern 1927. p. 316.
All the markings more or less lost in the ground colour.

ab. cruda Lenz. Osthelder Schmiett. Sudbayern 1927. p. 316.
The transverse lines bordering the middle field dark and sharply defined.

ab. fasciata Wehrli. Verh. N. Ges. Basel. 1917. 28. p. 241.
= *fasciata* Lenz. Osthelder Sudbayern 1927. p. 316.
With dark central band and the reniform darkened.

ab. rufannulata Lempke. Tijdschr. Ent. 1940. 83. p. 212.
The edging of the stigmata and the subterminal line reddish.

ab. flavilinea Lempke. Tijdschr. Ent. 1940. 83. p. 212.
The submarginal line yellow without dark inner edge.

ab. sinelinea Lempke. Tijdschr. Ent. 1940. 83. p. 212.
The submarginal line fails.

ab. juncta Lempke. Tijdschr. Ent. 1940. 83. p. 212. (description vol. 82. p. 197.)
The contours of the orbicular and reniform touch each other.

ab. nigro-linea Richardson. Entom. 1958. 91. p. 212; pl. 4, f. 4.
The forewings crossed by a strongly-marked dark subterminal line, edged externally with white. This line starts at the inner margin but ends just short of the costa. Narrow basal area slightly suffused.

- flammea Schiff. Wien. Verz. 1775. p. 87.
= piniperda Panzer. Kob. Naturg. Forlphal. 1786. 5I. pl. I f. II.
= telifera Payk. Vet. Akad. Stockh. 1786. 48. p. 60.
= spreta Fab. Mantissa. 1787. 2. p. 124.
= pini Vill. Linn. Syst. Nat. 1789. 2. p. 278.

aberrational forms etc.

ab. griseo-variegata Goeze. Ent. Beitr. 1781. 3. (3). p. 250.
Intermediate between the red and grey forms, the red and grey mingled.

flammea Schiff. typical form - - bright red, without grey.

ab. grisea Tutt. Brit. Noct. 1892. 2. p. 129.
The red colours almost absent and replaced by greenish-grey, the stigmata also shaded slightly inside with the same colour.

ab. flavescens Lempke. Tijdschr. Ent. 1940. 83. p. 206.
Forewings yellowish-brown, without red.

ab. purpureo-fusca Preissecker. Verh. zool.-bot. Ges. Wien. 1922. 72. p. (93)
Strongly darkened. Forewings up to the subterminal pale grey area, are blackish red-brown with black and white fringes. Hindwings nearly black with white fringes. The body and underside darker than typical examples. Description in vol. 65 p. (201).

ab. insulata Brundin. Ent. Tidskr. 1925. 46. p. 36. figured.
= albojuncta Turner. (Cockayne). Ent. Rec. 1939. 5I. Suppl. p. (204).
The figure shows the white stigmata joined by white stripes (from the upper and lower part of the reniform to the orbicular) thus forming a large white wedge in the centre of which a small square spot of normal ground colour remains. The white of the orbicular is extended towards the base in a point completing the wedge-shape. Turner's albojuncta had "a clear white stripe joining the stigmata". He gives the name to a description sent to him by "E. A. C." which we of course know is Dr. E. A. Cockayne but other authors, not knowing this, will assume that it is Turner's name and rightly so. It is difficult to understand why he gave it another name when he described the figure of insulata Brundin, an identical specimen, on the previous page.

ab. clausa Lempke. Tijdschr. Ent. 1940. 83. p. 207. (described vol. 82 p. 197)
The first and second transverse lines join at the inner margin.

ab. juncta Lempke. Tijdschr. Ent. 1940. 83. p. 207. (description vol. 82. p. 197)
The contours of the orbicular and reniform touch each other.

ab. semiconfluens Lempke. Tijdschr. Ent. 1940. 83. p. 207. (description vol. 82. p. 197)
Instead of touching each other the reniform and orbicular are joined by a double line.

ab. confluens Lempke. Tijdschr. Ent. 1940. 83. p. 207. (description vol. 82. p. 197)
The orbicular and reniform forming one single contour, their normal boundary absent at the point of juncture.

Noct. 90.
p.2.

flammea Schiff. continued.

ab. reducta Lempke. Tijdschr. Ent. 1940. 83. p. 207.
The orbicular stigma absent.

Noct. 9I.
p. I.

Heliophobus Bsd.

albicolon Hubner. Samml. Eur. Schmett. 1809. fig. 542.

aberrational forms etc.

albicolon Hbn. typical form - - The ground colour clay-grey.

ab. cinerascens Tutt. Entom. 1889. 22. p. 233.

The English form which is much greyer than Continental specimens. Forewings ashy-grey, strongly sprinkled with black atoms, with all the markings distinct.

ab. brunnea Tutt. Entom. 1889. 22. p. 233.

Forewings dark brown all the markings very distinct.

Tutt with his usual clarity then gives quite another description of this form the var A of Guenee of which Guenee says - "Forewings yellowish-brown more or less pricked out in blackish, with the subterminal line of a yellowish white, broken up but well marked, the ordinary lines more distinct than in type." Both of these descriptions are said to represent Hubner's fig. 543, which in our copy is much paler than 542. Tutt is apparently mixed in his mind regarding Hubner's two figures, the one Tutt first describes as dark brown being fig. 542 not the one Guenee cites 543. The first description must be taken for brunnea.

ab. substriata Cockayne. Ent. Rec. 1951. 63. p. 229 pl. 7 f. 2.

Between the postmedian and subterminal lines the interneural spaces are cream-coloured and only very sparsely powdered with dark scales; the nervures are dark. Thus there is a broad pale band crossed by dark nervures. The cream submarginal line is present.

Noct. 92.
p. I.

Heliophobus Bsd.

- calcatrippae View. Tab. Verz. 1790. 2. p. 71.
- = reticulata Vill. (nom. preoc.) Linn. Ent. 1789. 2. p. 254.
- = saponariae Borkh. Eur. Schmett. 1792. 4. p. 370.
- = typica Hubner. Samml. Eur. Schmett. 1803. pl. 12 f. 58.
- = typicoidina Haworth. Prodomus 1801.

aberrational forms etc.

subsp. marginosa Haworth. Lep. Brit. 1809. p. 195.

The English race. The ground colour and general appearance lighter than the typical form, which does not occur in England. The ground colour is in both fore and hind-wings straw-coloured.

subsp. hibernica Cockayne. Ent. Rec. 1944. 56. p. 55.

Ireland. Rather smaller than the English race and the typical form but with the same fuscous markings, though of a darker shade. The ground colour is pink.

ab. kitti Schawerda. Jahrb. Wien ent. Ver. 1914. 24. p. 125.

Remarkable by their black ground colour and pure white markings, without reddish tinge. The white transverse lines appear single, not doubled. Hindwings blackish-grey

Noct. 93.
p. I.

Tholera Hbn.

- popularis F. Syst. Ent. 1775. p. 577.
- = lolii Esper. Eur. Schmett. 1782. 3. p. 241. pl. 48 f. I-5.
- = popularius Haworth. Lep. Brit. 1803. p. 117.
- = typicoides Donovan. Nat. Hist. Brit. Ins. 1811. pl. 505.

aberrational forms etc.

ab. amarginata Schawerda. Verh. zool.-bot. Ges. Wien. 1927. 77. p. (82).
Strongly marked white veins and stigmata, normally dark ground but without the whitish pre-marginal zig-zag line.

ab. semiconfluens Lempke. Tijdschr. Ent. 1940. 83 p. 222. (description vol. 82. p. 197)
Instead of joining the stigmata are united by a double line.

ab. pallida Cockayne. Entom. 1937. 70. p. 193. pl. 4 f. 3 & 4.
Ground colour of head, legs, thorax, abdomen and forewings very light brown, almost concolorous with the nervures, very like the colour of the palest *C. lutosus* Hbn. Transverse lines dark brown; the stigmata outlined with brown; the row of wedge-shaped marks in the margin dark, but lighter than in normal specimens and showing very clearly in the pale submarginal band; marginal band light brown; fringes like the ground colour but with slightly darker edge. Hindwings greyish-white, with a faint grey submarginal band and a line of the same colour internal to it.
(Type in Wetti collection)

ab. nigrescens van Wisselingh. Ent. Ber. (Amst.) 1954. 15. p. 18.
Melanistic form which at first sight appears to be a *T. cespitis*. Apparently blackish, the description is insufficient.

Noct. 94.
p. I.

Tholera Hbn.

cespitis Schiff. Wien Verz. 1775. p. 82.
= hordei Schrnk. Faun. Boia. 1802. 2 (I). p. 351.

aberrational forms etc.

ab. confinis Stephens. Ill. Haust. 1827. 2. p. 109.

Pale ground colour. Forewings pale ashy-brown, the transverse lines dusky, before the margin an undulated striga composed of whitish lunules, the outer margin immaculate. The space between the stigmata and behind the posterior one blackish. Hindwings ashy-white very obscurely tinted with dusky towards the costal angle of the hind margin.

ab. desyllesi Boisduval. Ind. Meth. p. 113.

? = ferruginea Hofn. Soc. Ent. 1887. 2. p. 121.

According to Draudt (in Seitz 3 suppl. p. 109) the desyllesi of Boisduval, treated as a species in the main volume (Seitz 3 p. 185), is an aberration of cespitis, the Types having been examined. Draudt states that it is the pale reddish-brown form of cespitis and that ferruginea Hofn. is a synonym. This I doubt since the description of desyllesi says the forewings fuscous with no mention of pale reddish-brown. The description reads- Forewings fuscous, ordinary lines rather obscure, subterminal white, also the sharply marked reniform, orbicular pale, fuscous ringed. H.-wgs whitish ferruginea Hofn. is therefore treated as a different form below.

ab. ferruginea Hofn. Soc. Ent. 1887. 2. p. 121.

Head, thorax and forewings red-brown, transverse lines subterminal and stigmata sulphur yellow; hindwings of ♂ almost wholly white but in the ♀ paler than in the typical form.

Description from Turner's Brit. Noct. I have not seen the original.

ab. decolor Sohn. Soc. Ent. 1896. XI. p. 115.

The black-brown ground, usually invariable in cespitis, in this form varies from dark ochre-brown to a quite yellow-brown, the palest examples almost without markings. Hindwings quite white as far as the very fine yellow-grey outer-margin.

ab. semiconfluens Lempke. Tijdschr. Ent. 1940. 83. p. 222. (description vol. 82 p. 197)
Instead of joining the stigmata are united by a double line.

graminis Linn. Syst. Nat. 1858. Ed. X. p. 506.
= gramineus Haworth. Lep. Brit. 1803. p. 117.
=

aberrational forms etc.

graminis Linn. typical form - - the ground colour greyish, the markings whitish

ab. *tricuspis* Esper. Eur. Schmett. 1786. 3. p. 348. pl. 68 f. 2.

Forewings red-brown, unicolorous except for the dull ochreous grey stigmata and branched basal line.

The figure in our copy is very drab showing hardly any markings.

ab. *albinea* Boisduval. Icones 1841. pl. 74 f. 4.

The coloured figure show the veins white throughout, whitish as they near the outer margin, and well outlined in black.

ab. *hibernicus* Curtis. Brit. Ent. 1833. p. 451.

Dull yellowish-brown, the markings pale ochreous, some of them relieved, partially, by dark brown. Hindwings fuscous.

ab. *albipunctata* Lampa. Ent. Tidskr. 1884. p. 161.

Forewings red-brown with blackish nervures and with a white spot at the lower corner of the reniform.

ab. *brunnea* Lampa. Ent. Tidskr. 1884. 5. p. 161.

The ground colour red-brown.

Lampa obviously meant this as distinct from the greyish typical form but Tutt in his Brit. Noct says the name is too vague and useless as a varietal one.

ab. *rufa* Tutt. Entom. 1889. 22. p. 154.

This is Hubner's fig. 143. Forewings dark reddish; the wedge-shaped spots parallel to the outer margin are preceded by a pale band. The lower part of the reniform showing a distinct white spot with two branches, and white central line.

An unnecessary name, covered by the preceding *brunnea*, and only separable by the pale submarginal band which is of a distinct red tone in Hubner's figure, from which Tutt named it.

ab. *rufo-costa* Tutt. Entom. 1889. 22. p. 154.

This is Hubner's fig. 480. according to Tutt who gives the following description - "Forewings grey with bright red costa from base to apex; stigmata ochreous also the branched median nervure; the part of the wing just around the stigmata dark reddish-brown; beyond the reniform a broad red patch extends from the costa to the inner margin"

It is little different from the preceding *brunnea* and quite unnecessary, the artist painted the costa slightly more red than in fig. 143 (*rufa* Tutt).

Tutt says this name should include all forms with a red costa.

ab. *ochrea* Tutt. Entom. 1889. 22. p. 155. (Esper Eur. Schmett. 3. pl. 68 f. 3.)

Forewings pale ochreous-yellow, with dark nervures and whitish or ochreous stigmata and bifid line. It is figured as the ♀ of *tricuspis* in Esper's Eur. Schmett. pl. 68 fig. 3.

ab. *pallida* Tutt. Entom. 1889. 22. p. 155.

Forewings dark grey, unicolorous, but with white central line developed into a broad white band, including the claviform, orbicular and reniform and extending over the whole centre of the wing.

ab. *obsoleta* Tutt. Entom. 1889. 22. p. 155.

Forewings unicolorous dark grey, with no pale markings whatever except the trifid mark made up of the reniform and a bifid patch joined below it.

ab. *grisea* Spuler. Schmett, Eur. 1905. I. p. 167.

Grey with an extremely well defined dark central area; in the ♂ the dark markings are strongly developed.

Possibly synonymous with the type.

ab. *manca* Ljungdahl. Ent. Tidskr. 1918. 39. p. 83. fig.

Outer half of the forewing uniformly grey-brown with no trace of the usual arrow-headed spots and coloured veins. The central area is dark shaded, the orbicular absent; the reniform which is lighter than the ground colour is like a sickle-shaped streak, the prominent spot below the reniform is continued along below the discal vein as a wide obscurely margined streak.

The figure shows the normally slightly darker spots or patches, situated on the outer edge of the reniform and below the bifid mark, much darker than usual, but the black arrow heads can be faintly seen.

ab. *furiosa* Bang-Haas. Iris 1910. 24. p. 38.

The ground colour bright rose.

Described from Central Asia and may be confined to the race *megala* Alph.

ab. *juncta* Lempke. Tijdschr. Ent. 1940. 83. p. 206. (description vol. 82 p. 197)

The contours of the orbicular and reniform touch each other, but remain distinct.

ab. *radiata* Bryk. Ent. Rundsch. 1936. 53. p. 159 fig. 4 & p. 160.

Striking form. The middle and end spot of the cell disappeared and the pale mark below the reniform, together with the outwardly rayed pale spots, are fused together. The description is extremely poor giving no idea of the figure. This shows the stigmata connecting with the pale basal stripe in a broad white suffused patch completely hiding the contours of the stigmata and then continuing to enclose the white spot below the reniform and reaching the blackish wedge-shaped spots before the margin. This white area forms a large triangle from the base outwards to the marginal spots, the costa, inner margin and outer margin remaining brown.

Noct. 96.
p. I.

Xylomyges Guen.

- conspicillaris Linn. Syst. Nat. 1758. Ed. X. p. 515.
- = musicalis Esp. Eur. Schmett. 1777?. 4. p. 478 pl. 147 f. 5.
- = medio-linea Tutt. Brit. Noct. 1891. I. p. 70. (Hubner fig. 237)
- = ♀ inusta Brahm. Ins. Kal. 1791. 2. p. 61. (Esp. pl. 134 f. 5.
- = ♀ intermedia Tutt. Brit. Noct. 1891. I. p. 70.

aberrational forms etc.

conspicillaris Linn. typical form - - the ground colour light greyish

intermedia Tutt. Brit. Noct. 1891. I. p. 70.

Described as an aberration but is the female of the typical form. The middle of the forewing darkened leaving a large oblong space at the tip, from the reniform almost to the apex, of an ochreous colour. The dark colour is much more limited than in melaleuca View.

The figure in Esper called inusta by Brahm would seem to be the same female form.

ab. melaleuca Vieweg. Tab. Verz. 1790. 2. p. 68. pl. I f. 5.

= praeusta Brahm. Ins. Kal. 1791. 2. p. 55. (Esper's Schmett. pl. 134 fig. 6.)

= leuconota Donovan. Nat. Hist. Brit. Ins. 1804 13. p. 453. fig.

The more usual English form. The forewings mostly greyish-black, the inner margin, and a submarginal stripe, of an ochreous or greyish-white colour, the latter interrupted in the middle by black; the margins outside the pale stripe dark grey. The form is figured by Hubner in Samml. Eur. Schmett. pl. 49 fig. 236. as conspicillaris. Brahm's praeusta figured in Esper would seem to be little different allowing for the bad figures in that work.

Donovan's leuconota is also melaleuca.

ab. grisea Trautmann. Ent. Z. 1903. 16. p. 78.

The forewings pale yellowish-grey, thorax same colour, the markings of the type form.

ab. volandi Philipps Ent. Z. 1920. 33. p. 103.

Uniformly pale grey without black and white marking but on the pale white hindwing the nervures stand out sharply black and the discal spot is more strongly emphasized than in the typical form.

Noct. 97.
p. I.

Meliana Curtis.

flammea Curtis. Brit. Ent. 1828. 5. p. 201.

aberrational forms etc.



