

NEW OR LITTLE KNOWN MOTHS FROM FORMOSA (4)

MASAO OKANO

台灣産蛾類の新知見(4)

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This paper deals with fourteen Formosan species belonging to the families Geometridae, Drepanidae, Notodontidae and Arctiidae. Among them five species and six subspecies are described as new to science.

Before going further, I wish to express my gratitude to Mr. JÔZABURÔ ÔKURA for his gift of valuable specimens. I am also indebted to Mr. HIROSHI INOUE for his advice.

Unless otherwise stated, the specimens mentioned in this paper are preserved in my collection.

GEOMETRIDAE

Chloromachia gavissima formosana subsp. nov.

(Pl. 8, fig. 4)

♂. Markings of wings stronger than in the figure of the nominate subspecies shown in SEITZ, 12, pl. 11e, but weaker than in subsp. *aphrodite* PROUT from West China and Chinese Tibet.

Length of forewings : 20 mm. (♂).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, June—July, 1958.

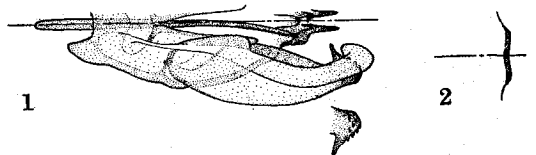
Paratype : Data as holotype, 1 ♂.

Comibaena takasago sp. nov.

(Pl. 8, fig. 5)

Similar to *C. nigromacularia* LEECH and *C. delicatior* WARREN, but readily separable from them by the following points :

♂. Forewings without reddish anal spot ; antemedial line nearly straight ; postmedial line angled inwards at vein 5. Hindwings without reddish or purplish apical spot and yellowish terminal bordering and anal spot ; postmedial line nearly parallel with termen, white, edged with blackish.



Figs. 1-2. Male genitalia of *Comibaena takasago* OKANO. 1. ventral view ; 2. eighth sternite.

Male genitalia : Very similar to those of *nigromacularia* and *delicatior*, but apex of costa much stronger, with several teeth ; caudal margin of eighth sternite not strongly

produced, without process.

Length of forewings : 14 mm. (♂).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.

***Callygris compositata formosana* subsp. nov.**

(Pl. 8, fig. 6)

♂. Forewings with yellow spot at anal angle. Hindwings with black submarginal spots much more reduced above vein 4 than in the nominate subspecies from Honshu, Shikoku, Kyushu, Korea and China.

Length of forewings : 22—23 mm.

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, June—July, 1958.

Paratypes : Data as holotype, 2 ♂♂ (1♂ in coll. H. INOUE).

***Descoreba simplex inouei* subsp. nov.**

♂♀. Forewings darker than in the nominate subspecies from Honshu, Shikoku, Kyushu, Amur and Ussuri. Hindwings usually irrorated with dark grey scales ; postmedial series of dark dots usually developed.

f. *inouei* OKANO

(Pl. 8, figs. 1—2)

♂♀. Forewings with dark postmedial line.

Length of forewings : 23 mm. (♂), 26 mm. (♀).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.

Allotype ♀ : Data as holotype.

Named after Mr. HIROSHI INOUE.

f. *punctata* nov.

(Pl. 8, fig. 3)

♂♀. Postmedial line of forewings replaced by a series of dark dots on veins.

Length of forewings : 21—23 mm. (♂), 26 mm. (♀).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.

Allotype ♀ : Type locality, March—April, 1959.

Paratype : Data as holotype, 1 ♂.

DREPANIDAE

Callicilix abraxata formosana subsp. nov.

(Pl. 8, fig. 7)

♂. Similar to the nominate subspecies from Hokkaido, Honshu, Shikoku, Kyushu and Yakushima, but larger in size. Forewings with basal spots larger; medial band arising from middle of costa; subterminal band not interrupted between veins 7 and 2. Hindwings with subterminal band more developed.

Length of forewings: 22 mm. (♂).

Habitat: Formosa.

Holotype ♂: Lushan, Nantow-hsien, Central Formosa, Sept., 1959.

Paratype: Data as holotype, 1 ♂.

NOTODONTIDAE

FORMOSAN SPECIES OF THE GENUS **Dudusa**

Two distinct species of the genus *Dudusa* occur in Formosa, and both the moths are easily distinguished by the following key.

- 1 (2) Forewings light grey; ante- and postmedial lines marked with a silvery white spot at costa. Saccus longer than half the length of valva; valva pointed at end; costa not broadened at apical half; harpe projecting interiorly
..... *nobilis baibarana* MATSUMURA
- 2 (1) Forewings dark grey (in f. *fumosa* MATSUMURA) or yellowish brown (in f. *horishana* MATSUMURA); ante- and postmedial lines not marked with such spot. Saccus shorter than one third the length of valva; valva roundish at end; costa broadened at apical half; harpe projecting posteriorly *fumosa* MATSUMURA

Dudusa nobilis baibarana (MATSUMURA) stat. nov.

(Pl. 7, fig. 1)

Dudusa nobilis STRAND (nec WALKER), Archiv f. Naturg., 81, A12: 151-153, 1916 (Formosa).

Dudusa baibarana MATSUMURA, Ins. Mats., 4: 37, pl. 1, f. 10, ♂, 1929 (Horisha and Baibara).

Dudusopsis baibarana MATSUMURA, Ins. Mats., 4: 81, 1929 (Formosa).

Dudusa nobilis GAEDE (part.), in SEITZ, Macrolep. World, 10: 608 (Formosa).

Dudusa baibarana GAEDE, in SEITZ, Macrolep. World, 10: 648-649, 1930 (Baibara).

Dudusa baibarana MATSUMURA, 6000 Illus. Ins. Jap.: 629, f. 126, ♂, 1931 (Hori district).

Dudusa nobilis f. *baibarana* MATSUMURA (part.), Ins. Mats., 8: 161, 1934 (Formosa).

Dudusa baibarana GAEDE, in STRAND, Lep. Cat., 59: 6, 1934 (Formosa).

Dudusa nobilis GAEDE (part.), in STRAND, Lep. Cat., 59: 6, 1934, (Formosa).

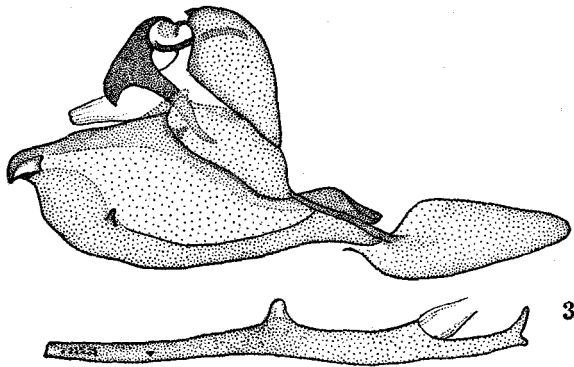


Fig. 3. Male genitalia of *Dudusa nobilis baibarana* MATSUMURA, lateral view, right valva removed.

Specimens examined : Jen-ai-hsiang, Nantow hsien, Central Formosa, May, 1958, 1 ♂ ; Sept., 1958, 1 ♂ ; Lushan, Nantow-hsien, Central Formosa, Sept., 1959, 3 ♂♂ 1 ♀.

As MATSUMURA (1934) stated, *baibarana* seems to be a representative of *D. nobilis* WALKER occurring in Formosa. The Formosan specimens, compared with the figure of the nominate subspecies shown in SEITZ, 10, pl. 79b, are more prominent in the markings of the forewings.

Dudusa fumosa MATSUMURA

f. *fumosa* MATSUMURA

(Pl. 7, fig. 2)

- Dudusa fumosa* MATSUMURA, Zool. Mag., Tokyo, 37 : 391—392, f. ♂, 1925 (Formosa).
Dudusopsis fumosa MATSUMURA, Ins. Mats., 4 : 81, 1929 (Formosa).
Dudusa fumosa GAEDE, in SEITZ, Macrolep. World, 10 : 608, 1930 (Formosa).
Dudusopsis fumosa MATSUMURA, 6000 Illus. Ins. Jap. : 629, f. 128, ♂, 1931 (Hori).
Dudusa fumosa MATSUMURA, Ins. Mats., 8 : 161, 1934 (Formosa).
Dudusa fumosa GAEDE, in STRAND, Lep. Cat., 59 : 6, 1934 (Formosa).

Specimen examined : Lushan, Nantow-hsien, Central Formosa, Sept., 1959, 1 ♂.

f. *horishana* (MATSUMURA) stat. nov.

(Pl. 7, fig. 3)

- Dudusa nobilis* var. *synopla* STRAND (nec SWINHOE), Archiv f. Naturg., 81, A12 : 151—153, 1916 (Formosa).
Dudusa nobilis MATSUMURA (nec WALKER), Zool. Mag., Tokyo, 34 : 523, 1922 (Horisha).
Dudusa nobilis MATSUMURA (nec WALKER), Zool. Mag., Tokyo, 37 : 406, 1925 (Formosa).
Dudusa nobilis var. *synopla* MATSUMURA (nec SWINHOE), Trans. Sapporo Nat. Hist. Soc., 9 : 38, 1924 (Formosa).
Dudusa nobilis synopla MATSUMURA (nec SWINHOE), Ins. Mats., 4 : 80 : 1929 (Formosa).
Dudusopsis horishana MATSUMURA, Ins. Mats., 4 : 81, pl. 2, f. 1, ♀, 1929 (Horisha).
Dudusa nobilis synopla GAEDE (nec SWINHOE), in SEITZ, Macrolep. world, 10 : 608, 1930 (Formosa).

Dudusa baibarana horishana GAEDE, in SEITZ, *Macrolep. World*, 10 : 649, 1930.

Dudusopsis horishana MATSUMURA, 6000 *Illus. Ins. Jap.* : 629—630, f. 129, ♀, 1931 (Hori district).

Dudusa nobilis f. *baibarana* MATSUMURA (part.), *Ins. Mats.*, 8 : 161, 1934 (Formosa).

Dudusopsis horishana KATO, *Three Colour Illus. Ins. Jap.*, fasc. 12, pl. 1, f. 4, [♂], 1934 (Formosa).

Dudusa baibarana var. *horishana* GAEDE, in STRAND, *Lep. Cat.*, 59 : 6, 1934 (Formosa).

Dudusa nobilis var. *synopla* GAEDE (part.), in STRAND, *Lep. Cat.*, 59 : 6, 1934 (Formosa).

Specimens examined : Jen-ai hsiang, Nantow hsien, Central Formosa, May, 1958, 1♂ ; June—July, 1958, 1♂ ; Sept., 1958, 1♂ 1♀ ; Lushan, Nantow-hsien, Central Formosa, Sept., 1959, 1♂.

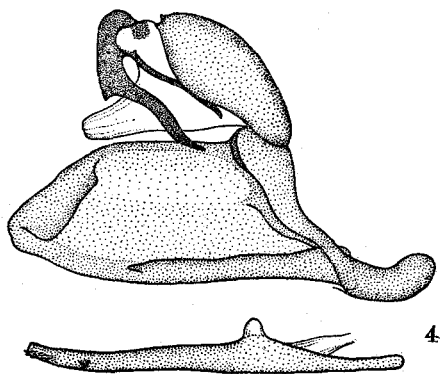


Fig. 4 Male genitalia of *Dudusa fumosa* MATSUMURA, lateral view, right valva removed,

Horishana was regarded as a synonym of *D. nobilis* f. *baibarana* by MATSUMURA (1934) or as a variety of *D. baibarana* by GAEDE (1934). It, however, is identical with *D. fumosa* on the male genital structure, and seems to be a form of the species.

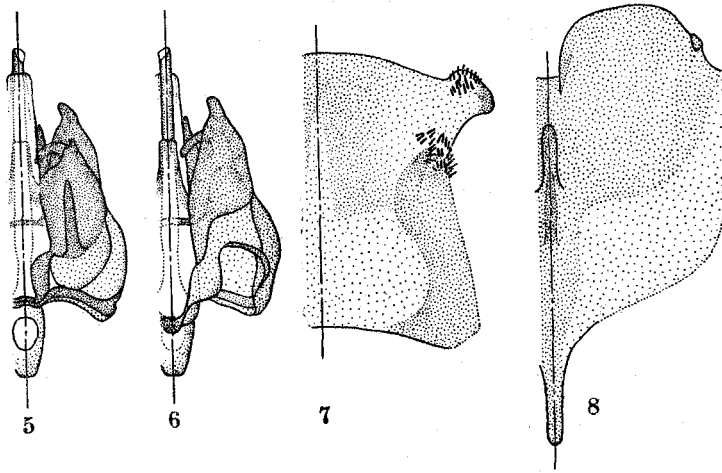
Judging from the opinion of MATSUMURA (1929), the form recorded as *synopla* from Formosa must be f. *horishana*.

Both *fumosa* and *horishana* are found in the same season at the same locality in Central Formosa, but the former is by far much rarer than the latter.

Stauropus lushanus sp. nov.

(Pl. 7, fig. 4)

♂. Labial palpi dark brown. Head and thorax dark brown, mingled with whitish hair. Abdomen light brown ; anal tuft yellowish white. Pectus and abdomen below yellowish white. Forewings blackish brown, densely dusted with green scales ; basal and terminal areas yellowish white, sparsely dusted with blackish brown ; antemedial line yellowish white, angled outwards below costal margin, inwards on submedial fold, then oblique outwards, waved ; postmedial line yellowish white, excurved to vein 4, then oblique inwards, angled inwards below vein 3, then oblique outwards, waved ; subterminal and terminal spots blackish brown ; cilia whitish, checked with blackish brown. Hindwings yellowish white ; apical patch blackish brown, sparsely dusted with green scales ; postmedial line on costal area, yellowish white ; cilia whitish. Underside. Forewings greyish brown. Hindwings yellowish white.



Figs. 5-8. Male genitalia of *Stauropus lushanns* OKANO. 5. dorsal view; 6. ventral view; 7. eighth tergite; 8. eighth sternite.

Length of forewings : 21 mm. (♂).

Habitat : Formosa.

Holotype ♂ : Lushan, Nantow-hsien, Central Formosa, Sept., 1959.

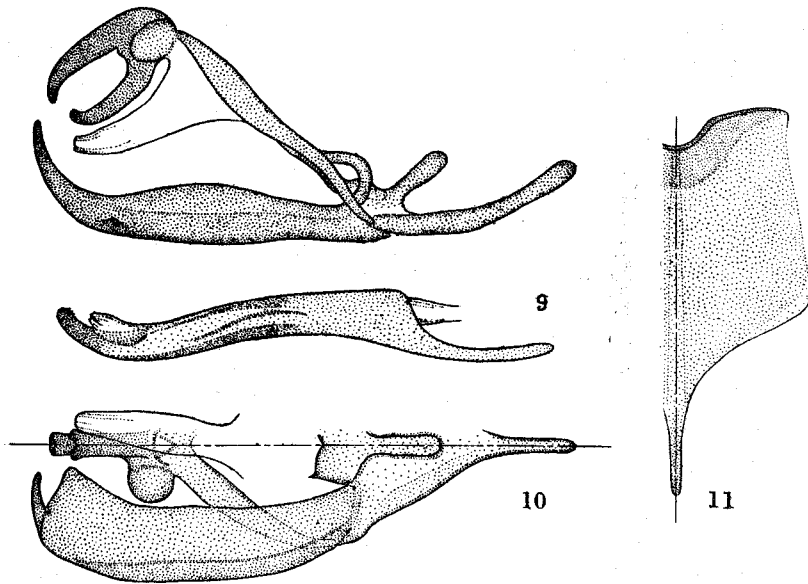
This species is similar to *S. sikkimensis* MOORE from Sikkim, but is easily separable from it by the size smaller, the forewings with medial area more blackish, and by the hindwings less roundish.

***Desmeocraera okurai* sp. nov.**

(Pl. 7, fig. 5)

♂. Similar to *D. viridipicta* WILEMAN from Honshu, Shikoku, Kyushu and Formosa, but forewings narrower, with termen more oblique; ground colour of forewings blackish brown, densely dusted with whitish scales; base and termen densely dusted with green scales; veins blackish; indistinct postmedial line followed by a large triangular patch below costa and a roundish spot in spaces 3, 2, 1b and 1a, which are blackish and densely dusted with green scales; subterminal line blackish, distinct, waved. Underside of hindwings whiter than in *viridipicta*.

Male genitalia : Similar to *viridipicta*, but tegumen without latero-caudal process; ventral margin of valva angled before the end; caudal margin of eighth sternite with a semicircular indentation at the middle.



Figs. 9-11. Male genitalia of *Desmeocraera okurai* OKANO. 9. lateral view ; right valva removed; 10. ventral view; 11. eighth sternite.

Length of forewings : 20—22 mm (♂).

Habitat : Formosa.

Holotype ♂ : Lushan, Nantow-hsien, Central Formosa, Sept., 1959.

Paratype : Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1958, 1♂.

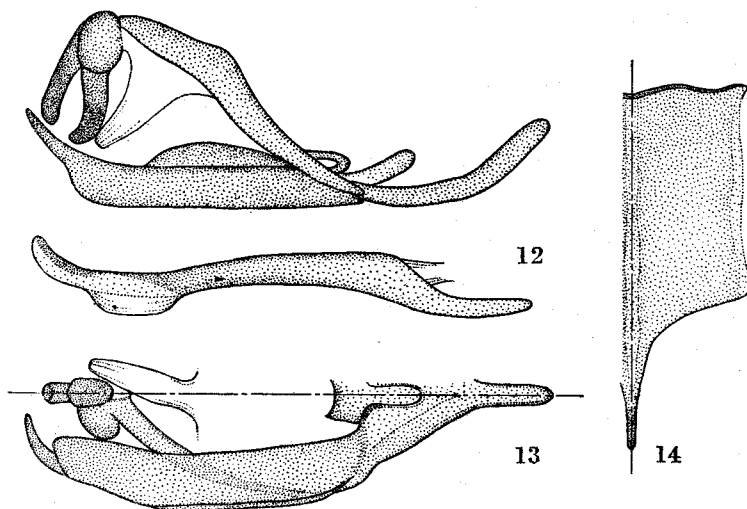
Named after Mr. JÔZABURÔ ÔKURA.

***Desmeocraera lineata* sp. nov.**

(Pl. 7, fig. 6)

♂♀. Larger than *D. viridipicta*. Forewings blackish brown, densely dusted with green scales, in female mingled with whitish scales on the area between postmedial and subterminal lines; subbasal, ante- and postmedial lines double, blackish, with white scales; antemedial line nearly straight to hind margin; reniform whitish, indistinct; postmedial line angled outwards below costa and in space 3, inwards at vein 5, then oblique inwards; behind it, a large triangular patch below costa and a roundish spot in spaces 3, 1b and 1a, which are blackish and dusted with green scales, more developed in female than in male; subterminal line blackish, waved. Hindwings as in *viridipicta*, but costal patch narrower.

Male genitalia : Similar to *D. okurai*, but ventral margin of valva rounded before the end; caudal margin of eighth sternite weakly sinuous.



Figs. 12-14. Male genitalia of *Desmoecrera lineata* OKANO. 12. lateral view, right valva removed; 13. ventral view; 14. eighth sternite.

Length of forewings : 23 mm. ♂ , 23—25 mm. (♀).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, Sept., 1958.

Allotype ♀ : Lushan, Nantow-hsien, Central Formosa, Sept., 1959.

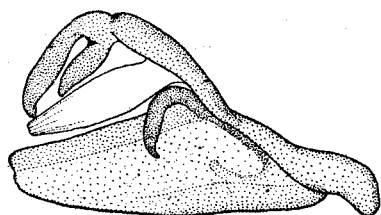
Paratype : Data as allotype, 1 ♀.

The female of *D. marginalis* MATSUMURA is similar to that of this species, but is easily separable from it by the larger size and the forewings with subterminal line situated nearer to termen.

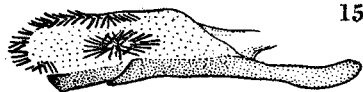
***Pseudofentonia bipunctata* sp. nov.**

(Pl. 7, fig. 7)

♂. Antennae serrate and fasciculate. Labial palpi deep brown, with whitish tip. Head and thorax greyish white, mingled with blackish hair. Abdomen yellowish brown; anal tuft greyish white. Pectus and abdomen below yellowish white. Forewings greyish white, sparsely dusted with blackish and yellowish scales; antemedial line double, blackish, faint, oblique outwards, waved; postmedial line double, blackish, only distinct at costa and hind margins, marked by a large blackish spot on veins 5 and 2; subterminal line represented by three blackish spots on costal area; a series of blackish spots before termen; cilia greyish white, checked with brown. Hindwings pale greyish brown; cilia brown. Underside. Forewings pale greyish brown. Hindwings greyish white, tinged with brown.



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Figs. 15-16. Male genitalia of *Pseudofentonia bipunctata* OKANO. 15. lateral view, right valva removed; 16. ventral view.

Length of forewings : 21—23 mm. (♂).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959.

Paratypes : Data as holotype, 2♂♂.

This new species is easily distinguished from the known species of the genus by the peculiar markings on the forewings.

***Phalera fuscescens obscura* (WILEMAN) stat. nov.**

(Pl. 7, fig. 8)

Phalera obscura WILEMAN, Entomologist, 43 : 138, 1910 (Kanshirei).

Phalera obscura MARUMO, Journ. Coll. Agric. Imp. Univ. Tokyo, 6 : 286, 1920 (Kanshirei).

Phalera obscura MATSUMURA, Zool. Mag., Tokyo, 34 : 519, 1922 (Formosa).

Phalera obscura MATSUMURA, Trans. Sapporo Nat. Hist. Soc., 9 : 44, 1924 (Formosa).

Phalera obscura MATSUMURA, Zool. Mag., Tokyo, 37 : 407, 1925 (Formosa).

Phalera raya GAEDE (Part.), in SEITZ, Macrolep. World, 10 : 613, 1930 (Formosa).

Phalera obscura MATSUMURA, 6000 Illus. Ins. Jap. : 653, f. 225 (as *P. flavomacula* WILEMAN), ♂, 1931 (Hori).

Phalera obscura MATSUMURA, Ins. Mats., 8 : 173, 1934 (Formosa).

Phalera obscura GAEDE, in STRAND, Lep. Cat., 59 : 196, 1934 (Formosa).

Specimens examined : Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959, 1♂ ; Lushan, Nantow-hsien, Central Formosa, Sept., 1959, 2♂♂.

A closer examination revealed that *obscura* is not a good species or a synonym of *P. raya* MOORE, but apparently representing the Formosan subspecies of *P. fuscescens* BUTLER.

From subsp. *fuscescens* from Honshu, Shikoku and Kyushu it may be separated in the following points.

♂. Slightly larger in size. Forewings more darkened on costal area. Hindwings blackish brown ; postmedial line weaker. Underside. Forewings darker. Hindwings with medial line heavier.

ARCTIIDAE

***Paraona staudingeri formosana* subsp. nov.**

♂♀. Forewing with bluish gloss much weaker than in the nominate subspecies from Hokkaido, Honshu, Shikoku, Kyushu, Korea, Ussuri and China. Hindwings white or grey.

f. ***formosana* OKANO**

(Pl. 8, fig. 8)

♂♀. Hindwings uniformly white.

Length of forewings : 19—21 mm. (♂), 22—23 mm. (♀).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959.

Allotype ♀ : Data as holotype.

Paratypes : Type locality, May, 1958, 2♂♂ ; March—April, 1959, 3♂♂3♀♀.

P. fukiensis DANIEL occurring in Fukien is similar to this new form in having in the white hindwings, but the expanse is larger, and the veins and cilia of hindwings are blackish.

f. ***grisea* nov.**

(Pl. 8, fig. 9)

♂♀. Hindwings uniformly grey.

Length of hindwings : 20—21 mm. (♂), 22—23 mm. (♀).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959.

Allotype ♀ : Data as holotype.

Paratypes : Type locality, May, 1958, 1♀ ; March—April, 1959, 1♂.

***Areas galactina formosana* subsp. nov.**

(Pl. 8, fig. 10)

Areas galactina MATSUMURA (part.), Thous. Ins. Jap., Suppl. 3 : 24—25, pl. 32, f. 1, ♂ (nec ♀), 1911 (Formosa).

Pericallia galactina MATSUMURA (part.), Ins. Mats., 5 : 71, 1930 (Formosa).

Pericallia galactina MATSUMURA (part.), 6000 Illus. Ins. Jap. : 977—978, f. 1683, ♂ (nec ♀), 1931 (Formosa).

Pericallia galactina KATO (part.), Three Colour Illus. Ins. Jap., fasc. 7, pl. 42, f. 4 [♂], 1934 (Formosa).

Pericallia galactina HIRAYAMA (nec HOEVEN), Genshoku Senshu Zoku Konchû Zufu, pl. 51, f. 4, ♂ (nec ♀), 1937 (Musha).

♂. Most closely related to the nominate subspecies from Java in colour and markings, but abdomen with black dorsal spots much larger. Hindwings not haired pink on anal fold, without postmedial spot on vein 2.

Length of forewings : 33—35 mm. (♂).

Habitat : Formosa.

Holotype ♂ : Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959.

Paratypes : Data as holotype, 4♂♂.

Explanation of plates

Plate 7.

- Fig. 1. *Dudusa nobilis baibarana* MATSUMURA, ♂. Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.
- Fig. 2. *Dudusa fumosa* f. *fumosa* MATSUMURA, ♂. Lushan, Nantow-hsien, Central Formosa, Sept., 1959.
- Fig. 3. *Dudusa fumosa* f. *horishana* MATSUMURA, ♂. Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.
- Fig. 4. *Stauropus lushanus* OKANO, ♂ (holotype). Lushan, Nantow-hsien, Central Formosa, Sept., 1959.
- Fig. 5. *Desmeocraera okurai* OKANO, ♂ (holotype). Lushan, Nantow-hsien, Central Formosa, Sept., 1959.
- Fig. 6. *Desmeocraera lineata* OKANO, ♂ (holotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, Sept., 1958.
- Fig. 7. *Pseudofentonia bipunctata* OKANO, ♂ (paratype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959.
- Fig. 8. *Phalera fuscescens obscura* WILEMAN, ♂. Lushan, Nantow-hsien, Central Formosa, Sept., 1959.

Plate 8.

- Fig. 1. *Descoreba simplex inouei* f. *inouei* OKANO, ♂ (holotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.
- Fig. 2. *Descoreba simplex inouei* f. *inouei* OKANO, ♀ (allotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.
- Fig. 3. *Descoreba simplex inouei* f. *punctata* OKANO, ♂ (holotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.
- Fig. 4. *Chloromachia gavissima formosana* OKANO, ♂ (holotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, June—July, 1958.
- Fig. 5. *Comibaena takasago* OKANO, ♂ (holotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.
- Fig. 6. *Callygris compositata formosana* OKANO, ♂ (holotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, June—July, 1958.
- Fig. 7. *Callicilix abraxata formosana* OKANO, ♂ (holotype). Lushan, Nantow-hsien, Central Formosa, Sept., 1959.
- Fig. 8. *Paraona staudingeri formosana* f. *formosana* OKANO, ♂ (paratype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, May, 1958.
- Fig. 9. *Paraona staudingeri formosana* f. *grisea* OKANO, ♂ (paratype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959.
- Fig. 10. *Areas galactina formosana* OKANO, ♂ (holotype). Jen-ai-hsiang, Nantow-hsien, Central Formosa, March—April, 1959.

