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The Systematic Study on the Japanese Pyralinae (Lepid.)

By

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Plates III, IV.

The Pyralinae is a subfamily of moths belonging to the family Pyralidae. The hind wing having vein 8 free from 7, this subfamily is thus separated from the Chrysauginae and Endotrichinae. From the Epipaschiinae it differs on account of the fore wing having no tuft of raised scales in the cell. The subfamily is also separated from the Hydrocampinae and Scopariinae owing to the fore wing having vein 7 stalked with 8 and 9.

The Pyralinae is one of considerable extent, comprising in the world, about sixty-six genera with more than six hundred and fifty species. Of these, ten genera and twenty-seven species are from Japan.

The first Japanese species known was described by MOTSCHULSKY in *Etudes Entomologiques*, ix, 1860. In that paper he described *Pyralis circularis* MORSCH., but the species is now treated as the synonym of *Aglossa dimidiata* HAW.

In 1866, MOTSCHULSKY, in *Bul. Soc. Nat. Mosc.* xxxix, (1), recorded *Aglossa cuprealis* HBN. from Japan. A. G. BUTLER, described one new genus *Datanoides* with a new species *D. fasciata*, in *Ent. Mon. Mag.* xix, 1878, but the former is the synonym of genus *Sybrida* Wlk. In the following year, BUTLER, in a paper entitled 'Descriptions of new Species of Lepidoptera from Japan' (*Ann. Mag. Nat. Hist.* (5) iv, pp. 349-373, 437-457, 1879) described one new genus and six new species, of these the following have become synonyms.

1. *Pyralis yokohamae* BUTL. = *Herculia glaucinalis* LINN.
2. *Paleca rufescens* BUTL. = *Bostra indicator* WLK.
3. Genus *Paleca* BUTL. = *Bostra* WLK.

In the same year the following species were described by BUTLER in *Illust. Typ. Spec. Het. B. M.* vol. iii (1879).

1. *Aglossa achatina* BUTL. = *Aglossa dimidiata* HAW.
2. *Pyralis fraterna* BUTL. = *Pyralis farinalis* LINN.
3. *Pyralis elachina* BUTL. = *Pyralis pictalis* CURT.

J. H. LEECH described a new species, *Datanoides approximans*, in Proc. Zool. Soc. Lond. 1888, and in the following year he described *Trebania flavifrontalis* LEECH, from China, also giving Japan as the locality of the species.

In 1891, five species were newly recorded from Japan by W. WARREN in Ann. Mag. Nat. Hist. (6), vii, and E.-L. RAGONOT in Ann. Soc. Ent. Fr.

In a Catalogue of Lepidoptera Heterocera from China, Japan and Corea (Trans. Ent. Soc. Lond. 1901), J. H. LEECH recorded *Tamraca torridalis* LED. which had apparently not been recorded from Japan up to that time.

In 1911, A. E. WILEMAN, published his paper 'New and Unrecorded Species of Lepidoptera Heterocera from Japan' in the Trans. Ent. Soc. Lond., in which he enumerated the following new and unrecorded species.

1. *Pyralis nanalis* WILMN.
2. *Herculia umbrosalis* WILMN.
3. *Orybina regalis* LEECH

With regard to *Herculia umbrosalis*, in this paper the author has not stated that the species has vein 8 of the hind wing well stalked with 7, therefore it does not belong to this subfamily, but to the Endotrichinæ.

Dr. N. MARUMO, in Nawa Essays, 1917, described a new genus *Hirayamaia*, the genotype of which is *Orybina regalis* LEECH.

In the present paper, the following four new and two unrecorded species are included.

1. *Hypsopygia mauritialis* BOISD.
2. *Pyralis suzukii* SHIBUYA, sp. nov.
3. *Herculia repetita* BUTL.
4. *Herculia jezoensis* SHIBUYA, sp. nov.
5. *Herculia nigralis* SHIBUYA, sp. nov.
6. *Sybrida misakiensis* SHIBUYA, sp. nov.

The author is greatly indebted to Prof. Dr. S. MATSUMURA for the kind advice and informations he has given him during the course of preparation of this paper.

Acknowledgments are also due to Dr. C. J. Gahan, Major E. E.

AUSTEN, MESSRS. J. H. DURRANT and W. H. T. TAMS of the British Museum, M. LE CERF of the National Museum in Paris, Prof. Dr. P. KRUEGER of the Stettin Museum, Dr. M. HERING of the Zoological Museum in Berlin, and Dr. STAUDINGER & BANG HAAS in Dresden, for the kindness the author has received during his stay in Europe for the purpose of investigation of this group.

Thanks for the use of collection is also due to Mr. A. E. WILEMAN in London. The author is also indebted to Messrs. H. STRINGER and R. J. WEST of the British Museum, who rendered invaluable aid in many ways while he was doing his research work in the British Museum.

Pyralinæ

Head: (pl. IV. ff. 11-20).

Labial palpi:—The Labial palpi consist of three separate joints, and they are very variable in length and position as compared with each other in various species. In most cases the palpi are long, and when upturned, reaching to or beyond the vertex of the head. But in some species they are porrect or downcurved; sometimes very short, hardly reaching to the vertex of the head. The 1st joint of the palpi is generally short and shows a very little variation. The 2nd joint is comparatively long, in some cases very long, and is almost always hairy. The 3rd joint is in most species comparatively short, but sometimes this joint is lengthened, so as it is nearly as long as the 2nd joint; it is also variable in shape, sometimes cylindrical, sometimes conical. There is also some variation in the palpi in sexes.

Maxillary palpi:—The Maxillary palpi are present in all species the author has examined, and comparatively small, more or less concealed by the labial palpi, generally rising upwards between labial palpi and front of head, rarely projecting forwards.

In most cases, so far as the author's observations go, the maxillary palpi of the Japanese species are always very minute, and filiform in shape, sometimes very slightly dilated at the extremity of it.

Proboscis:—The Proboscis is present in all the Japanese species the author has examined, and in many species it is well developed, though he speaks of its being very minute in some species.

Compound eyes:—The Compound eyes are of moderate size, globular, naked, and are always surrounded with short hair.

In the author's examination, there is in the eyes scarcely any variation in the subfamily.

Simple eyes (Ocelli):—The Simple eyes are generally wanting in most of the Japanese species. In some species belonging to genera *Stemmatophora*, *Trebania*, *Bostra* and *Hirayamaia*, the author has observed that the simple eyes were situated back of the base of the antennæ.

Antennæ:—The Antennæ are very variable in form and ornamentation in different species and sexes. The antennæ of males are in many Japanese species ciliated; sometimes, with short fasciculate; in some species, they are serrate and fasciculate or bipectinate with long hair branches to three fourths length with a tuft of hair from basal joint. The female antennæ, so far as the author's observations go on the Japanese species, are simple.

Thorax:—Generally as broad as the abdomen; hairy; with patagiæ which in some species the author has examined, they either reach to or beyond the metathorax. In male specimen of the species, belonging to genus *Sybrida*, with a tuft of long hair from thorax below base of fore wing.

Wings:—The Wings vary greatly in shape. They are generally rather broad in comparison with moths belonging to another subfamily, but sometimes are narrow. There is in the wings no variation in the sex of the Japanese species in this subfamily so far as the author has examined except the frenulum which is single in the male, and in the female it consists of double spines or more.

Neuration:—The Neuration is a most remarkable character as there are a great variations in the species. Generally the fore wing has eleven veins with two internal veins; 1^c absent; 1^p free, sometimes it coincides with 1^a; 2 arising from the median nervure, well before angle of cell; 3 from or before angle of cell; 4 and 5, in many species, from angle, well separated one from another towards origin, but sometimes they are stalked or approximated for some distance; 6 from or below the upper angle of cell, or stalked with 7, 8, 9; 7 is almost always stalked with 8 and 9, in many cases this vein diverging from 8 before 9, sometimes, however, it diverges from 8 after 9; 10, 11 in the Japanese species are always arising from the subcostal nervure; 12 free from the cell; the cell, in most cases, extending about half length of wing.

Hind wing has seven veins with three internal veins; 1^a, 1^b, 1^c, free; 2 from well before angle of cell; 3 from near angle; 4 and 5, stalked or approximated to each other towards origin for some distance; 6 and 7, in most cases are stalked at origin for short distance; 8 free from 7. (pl IV. ff. 4-10, 21-23).

Legs:—The Legs are generally uniform. They are, however, slender or stout, long or short; moderately hairy or fringed with hair. In all cases, mid-tibiæ bear a pair of spurs; hind tibiæ have two pairs, the one pair near the middle, the other pair at the lower end, generally the outer spur about half as long as the inner, but sometimes so as to be nearly as long as the inner one. The tarsi are in most cases smoothly scaled. In these species, belonging to genus *Sybrida*, they have a large tuft of hair on the 1st joint. (pl. IV. ff. 24-25).

Abdomen:—There is, so far as the author has observed, no peculiarity about the abdomen.

Synopsis of Genera.

- A. Hind tarsi with no tuft of hair on 1st joint.
 - a. Palpi with the 2nd and 3rd joints upturned.
 - a¹. Proboscis absent or very minute. AGLOSSA.
 - b¹. Proboscis well developed.
 - a². Hind wing with veins 4, 5 stalked.
 - a³. Fore wing with vein 7 from 8 after 9. HYPSPYOGIA.
 - b³. Fore wing with vein 7 from 8 before 9.
.....PYRALIS.
 - b². Hind wing with veins 4, 5 not stalked.
.....STEMMATOPHORA.
 - b. Palpi obliquely upturned, the 3rd joint porrect.
 - a¹. Proboscis well developed; antennæ of male ciliated.
.....HERCULIA.
 - b¹. Proboscis minute; antennæ of male with short branches. . .
.....TAMRACA.
 - c. Palpi rostriform and downcurved at extremity.
 - a¹. Fore wing with vein 6 from the cell.
 - a². Palpi less than twice the length of head. BOSTRA.
 - b². Palpi more than twice the length of head.
.....TREBANIA.
 - b¹. Fore wing with vein 6 stalked with 7, 8, 9. HIRAYAMAIA.

B. Hind tarsi with a large tuft of hair on 1st joint. . . . SYBRIDA.

Genus **Aglossa** LATR.

(Type *pinguinalis* LINN.)

Aglossa LATREILLE, Préc. Car. Gen. Ins. p. 145 (1796); id., Hist. Nat. Gen. Crust. et Ins. p. 414 (1802); STEPHENS, Ill. Brit. Ent. Haust. iv, p. 22 (1834); GUENÉE, Delt. et Pyr. p. 125 (1854); WALKER, Cat. Lep. Het. B. M. xvii, p. 274 (1859); MEYRICK, Trans. Ent. Soc. Lond. p. 282 (1834); MOORE, Lep. Ceyl. iii, p. 266 (1885); MEYRICK, Trans. Ent. Soc. Lond. p. 476 (1890); RAGONOT, Ann. Soc. Ent. Fr. p. 49 (1891); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 147 (1896); id., Trans. Ent. Soc. Lond. p. 505 (1896).

Philotis RAGONOT, Ann. Soc. Ent. Fr. p. 81 (1891).

Agriope RAGONOT, l. c. p. 163 (1894).

In Japan, two species which belong to this genus as shown in the following synopsis are known.

- a. Fore wing with costal specks. *A. dimidiata* HAW.
- b. Fore wing without costal specks. *A. cupresalis* HBN.

1. **Aglossa dimidiata** HAW. (Pl. III. f. 1.)

Crambus dimidiatus HAWORTH, Lep. Brit. ii, p. 372 (1809); STEPHENS, Syst. Cat. Brit. Ins. ii, p. 160 (1829) [*Aglossa*]; id., Ill. Brit. Ent. Haust. iv, p. 24 (1834); RAGONOT, Ann. Soc. Ent. Fr. p. 50 (1891); id., l. c. p. 634 (1892); *micallialis* WALKER, Cat. Lep. Het. B. M. xvii, p. 277 (1859) [*Aglossa*]; *circularis* MOTSCHULSKY, Etud. Ent. ix, p. 37 (1860) [*Pyralis*]; id., Bul. Soc. Nat. Mosc. xxxix (1), p. 198 (1866); *achatina* BUTLER, Ill. Typ. Sp. Het. B. M. iii, p. 72, pl. 58, f. 6 (1879) [*Aglossa*]; Pryer, Trans. Asiat. Soc. Jap. xiii (1), p. 59 (1885); *bractiatella* MATSUMURA (nec Wlk.), Nihon-konchugaku, p. 140 (1899) [*Myelois*]; *dimidiata* HAMPSON, Faun. Brit. Ind. Moths, iv, p. 147 (1896); id., Trans. Ent. Soc. Lond. p. 506 (1896); STAUDINGER & REBEL, Cat. Lep. Palaerc. ii, p. 45 (1901); LEECH, Trans. Ent. Soc. Lond. p. 421 (1901); MATSUMURA, Cat. Ins. Jap. p. 201 (1905).

P. circularis MORSCH. and *A. achatina* BUTL. were described from Japan. The species which Prof. Dr. Matsumura stated in his 'Nihon-konchugaku, p. 110' as *Myelois bractiatella* WLK. is apparently identical with *A. dimidiata* HAW. Larva of this

species feeds on rice. The author has hitherto examined the following specimens:

Nikko 1 sp.	
Tokyo 4 sps.	In Brit. Mus.
Yokohama . . . 3 sps.	
Kiushū 1 sp.	
Yokohama . . . 1 sp.	
Japan 1 sp.	In Zool. Mus. (Berlin).
Saga 1 sp.	
Yokohama . . . 1 sp.	In Coll. Dr. Staudinger & Bang Haas (Dresden).
Yoshino 3 sps.	
Iyo 2 sps.	In Coll. Mr. Wileman (London).
Higo 1 sp.	
Bungo 1 sp.	
Sapporo 3 sp.	In Ent. Mus. Hokkaido Imp. Univ. (Sapporo).

The type specimen of *A. achatina* BUTL. (from Yokohama) is in the collection of the British Museum, but the exact location of MOTSCHULSKY's type specimen is not well known.

Loc. Distr.: Hok. (Sapporo); Honsh. (Nikko; Tokyo; Yokohama; Yoshino); Shik. (Iyo); Kiush. (Higo; Bungo; Saga).
Gen. Distr.: India; Burma; China; Corea; Japan.

2. *Aglossa cuprealis* HBN.

Pyralis cuprealis HUEBNER, Smml. Eur. Schmett. Pyr. pl. 23, f. 153 (1796); *cuprealis* HUEBNER, Verz. Schmett. p. 348 (1826) [*Hypsopygia*]; STEPHENS, Ill. Brit. Ent. Haust. IV. p. 23 (1834) [*Aglossa*]; MOTSCHULSKY, Bul. Soc. Nat. Mosc. xxxix (1), p. 198 (1866); MEYRICK, Trans. Ent. Soc. Lond. p. 72 (1884); id., l.c. p. 192 (1887); id., l.c. p. 476 (1890); RAGONOT, Ann. Soc. Ent. Fr. p. 50 (1891); MEYRICK, Brit. Lep. p. 428 (1895); HAMPSON, Trans. Ent. Soc. Lond. p. 506 (1896); STAUDINGER & REBEL, Cat. Lep. Palaerc. ii, p. 45 (1901); MENDES, Broteria, iii, p. 229 (1904); *capreolatus* STEPHENS, Syst. Cat. Brit. Ins. ii, p. 160 (1829) [*Aglossa*]; *domalis* GUENÉE, Delt. et Pyr. p. 128 (1854) [*Aglossa*]; *incultella* WALKER, Cat. Lep. Het. B. M. xxxv, p. 1712 (1866) [*Acrobasis*]; *euthealis* HULST, Tr. Am. Ent. Soc. xiii, p. 160 (1886) [*Tetralopha*].

The author has not been able to obtain any specimen of this species in this country even though MOTSCHULSKY recorded this

species from Japan in 1866.

Loc. Distr.: ?

Gen. Distr.: Europe; Asia; America; Australia; Japan.

Genus **Hypsopygia** HBN.

(Type *costalis* FABR.)

Hypsopygia HUEBNER, Verz. Schmett. p. 348 (1826); STEPHENS, Ill. Brit. Ent. Haust. iv, p. 26 (1834); RAGONOT, Ann. Soc. Ent. Fr. p. 26 (1891); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 148 (1896); id., Trans. Ent. Soc. Lond. p. 507 (1896).

The Insects which belong to this genus are distributed over the Palaerctic, Oriental, Ethiopian and Nearctic regions, and about five species have been described. In Japan, we have two species in all.

Synopsis of Species.

- a. Vertex of head orange *H. mauritialis* BOISD.
 - b. Vertex of head dark purplish fuscous . . *H. regina* BUTL.
3. **Hypsopygia mauritialis** BOISD. (Pl. III, f. 2.)
- Asopia mauritialis* BOISDUVAL, Faun. Ent. Madag. p. 119, pl. 16, f. 8 (1833); LEDERER, Wien. Ent. Mon. vii, p. 343 (1863); SNELLEN, Tijd. v. Ent. xxvi, p. 122, pl. 6, f. 5 (1883); GUENÉE, Delt. et Pyr. p. 118 (1854) [*Pyralis*]; WALKER, Cat. Lep. Het. B. M. xvii, p. 267 (1859); RAGONOT, Ann. Soc. Ent. Fr. p. 27 (1891) [*Hypsopygia*]; HAMPSON, Faun. Brit. Ind. Moths, iv, p. 148 (1896); id., Trans. Ent. Soc. Lond. p. 507 (1896); *lucillalis* WALKER, l. c. xvii, p. 268 (1859) [*Pyralis*]; MOORE, Proc. Zool. Soc. Lond. p. 89 (1867); BUTLER, Proc. Zool. Soc. Lond. p. 167 (1883); SWINHOE, Proc. Zool. Soc. Lond. p. 864 (1885); id., l. c. p. 457 (1886); SWINHOE & COTES, Cat. Moths of Ind. p. 656 (1889); SWINHOE, Trans. Ent. Soc. Lond. p. 291 (1890) [*Herculia*]; RAGONOT, Ann. Soc. Ent. Fr. p. 27 (1891) [*Hypsopygia*]; LEECH, Trans. Ent. Soc. Lond. p. 422 (1901); *regalis* WALKER, l. c. xxxiv, p. 1241 (1865) [*Pyralis*]; *ducalis* WALKER, l. c. xxxiv, p. 1242 (1865) [*Pyralis*]; MEYRICK, Trans. Ent. Soc. Lond. p. 192 (1887) [*Asopia*]; RAGONOT, Ann. Soc. Ent. Fr. pp. 31, 42 (1891) [*Orthopygia*]; id., l. c. p. 628 (1892); *laticiliialis* RAGONOT, l. c. p. 28 (1891) [*Hypsopygia*].

This species has hitherto not been recorded from Japan. We have three female examples here in the Entomological Museum, one of which was taken in Tokyo by Prof. Dr. S.

MATSUMURA in July, 1916, and the other two at Yanagawa in Kiushū on the 30th of July and on August 23, 1913, by Mr. T. TAKAMUKU.

Loc. Distr.: Honsh. (Tokyo); Kiush. (Yanagawa).

Gen. Distr.: Madagascar; India; Burma; Java; Sumatra; Japan.

4. **Hypsopygia regina** BUTL. (Pl. III, f. 3.)

Pyralis regina BUTLER, Ann. Mag. Nat. Hist. (5) iv, p. 452 (1879); PRYER, Tr. Asiat. Soc. Jap. xiii (1), p. 58 (1885); RAGONOT, Ann. Soc. Ent. Fr. p. 41 (1891); id., l. c. p. 628 (1892) [*Hypsopygia*]; HAMPSON, Faun. Brit. Ind. Moths, iv. p. 149 (1896); id., Trans. Ent. Soc. Lond. p. 507 (1896); LÆECH, Trans. Ent. Soc. Lond. p. 422 (1901); MATSUMURA, Cat. Ins. Jap. p. 201 (1905); id., Jour. Coll. Agr. Hokkaido Imp. Univ. xv (3), p. 187 (1925).

The type specimen of this species was taken in Yokohama by Mr. H. H. PRYER, and now is in the British Museum, where are two other specimens, collected in Nikko by Mr. LÆECH. The author has also examined the following specimens of this species.

Nikko . . . 1 sp. (HINGENDORF).

Saga . . . 1 sp. (DÖNITZ). In Zool. Mus. (Berlin).

Nikko . . . 1 sp. (BLÜTHGER).

We have a great number of specimens of this species here in the Entomological Museum; they were mostly collected in Hokkaido, Tokyo and Kyoto. There are twelve specimens in Mr. Wileman's collection (London), one of which was from Hakodate, and the others from Yoshino, all collected by himself.

Loc. Distr.: Hok. (Mt. Daisetsu; Sapporo; Hakodate); Honsh. (Nikko; Tokyo; Yoshino; Yokohama; Kyoto; Shimauchi); Shik. (Iyo); Kiush. (Saga).

Gen. Distr.: Aska; Ganjam; Burma; Japan.

Genus **Pyralis** LINN.

(Type *farinalis* LINN.)

Pyralis LINNAEI, Syst. Ent. ed. x, pp. 496, 533-4 (1758); id., l. c. ed. xii, (ii), p. 881 (1767); STEPHENS, Ill. Brit. Ent. Haust. iv, p. 24 (1834); GUENÉE, Delt. et Pyr. p. 116 (1854); WALKER, Cat. Lep. Het. B. M. xvii, p. 260 (1859); MOORE, Lep. Ceyl. iii, p. 262 (1885); MEYRICK, Trans. Ent. Soc. Lond. p. 475 (1890);

- RAGONOT, Ann. Soc. Ent. Fr. p. 37 (1891); MEYRICK, Brit. Lep. p. 426 (1895); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 149 (1896); id., Trans. Ent. Soc. Lond. p. 507 (1896).
Asopia TREITSCHKE, Schmett. Eur. vi, (2), p. 316 (1828); LEDERER, Wien. Ent. Mon., vii, p. 342 (1863).
Sacatia WALKER, Cat. Lep. Het. B. M. xxvii, p. 123 (1863).
Therapne RAGONOT, Ann. Soc. Ent. Fr. p. 83 (1891).
 Range. Universally distributed. In Japan occurred five species altogether.

Synopsis of Species.

- A. Postmedial line of fore wing forming a large white spot at the costa.
- a. Fore wing without any dot at the base of the antemedial line at the costa. *P. albiguttata* WARR.
 - b. Fore wing with an elongate white dot at the base of the antemedial line at the costa.
 - a¹. Fore wing with the area between ante- and postmedial lines bright yellow on the costal half. *P. regalis* S. D.
 - b¹. Fore wing with the area between ante- and postmedial lines sanguineous. *P. suzukii* SHIB. (sp. nov.).
- B. Postmedial line of fore wing does not form a dot at the costa.
- a. Fore wing with basal and terminal areas purple or reddish brown. *P. farinalis* LINN.
 - b. Fore wing with basal and terminal areas black. *P. pictalis* CURT.
5. ***Pyralis farinalis* LINN.** (Pl. III, f. 4.)
Pyralis farinalis LINNAEI, Syst. Nat. ed. x. p. 533 (1758); id., l. c. ed. xii, (ii), p. 881 (1867); HUEBNER, Smml. Eur. Schmett. Pyr. p. 17, pl. 15, f. 95 (1796); STEPHENS, Syst. Cat. Brit. Ins. ii, p. 160 (1829); id., Brit. Ent. Haust. iv, p. 25 (1834); GUENÉE, Delt. et Pyr. p. 118 (1854); WALKER, Cat. Lep. Het. B. M. xvii, p. 262 (1859); MEYRICK, Trans. Ent. Soc. Lond. 476 (1890); RAGONOT, Ann. Soc. Ent. Fr. p. 37 (1891); MEYRICK, Brit. Lep. p. 427 (1895); HAMPSON, Trans. Ent. Soc. Lond. p. 507 (1896); STAUDINGER & REBEL, Cat. Lep. Palaerc. ii, p. 45 (1901); LEECH, Trans. Ent. Soc. Lond. p. 422 (1901); REBEL, Berl. Ent. Zeitschr. xlvii,

p. 103 (1902); MENDES, Broteria, iii, p. 230 (1904); MATSUMURA, Cat. Ins. Jap. p. 202 (1905); MIYAKE, Annot. Zool. Jap. vi (3), p. 209 (1907); OKAMOTO, Bul. Agr. Exp. Stn. Chosen Gov. -Gen. I (2), p. 148 (1924); TREITSCHKE, Schmett. Eur. vi, (2), p. 316 (1828); [*Asopia*]; DUPONCHEL, Hist. Nat. Lep. Fr. viii, (2), p. 193, pl. 223, f. 1; ZELLER, Lep. Microp. Caffr. p. 22 (1852); LEDERER, Wien. Ent. Mon. vii, p. 343 (1863); MEYRICK, Trans. Ent. Soc. Lond. p. 73 (1884); id, l.c. p. 193 (1887); REUTER, Acta, Soc. Faun. Fl. Fennica, xv (5), p. 9 (1899); *fraterna* BUTLER, Ill. Typ. Sp. Het. B. M. iii, p. 70, pl. 53, f. 4 (1879) [*Pyralis*]; PRYER, Tr. Asiat. Soc. Jap. xiii (1), p. 58 (1885); *manihotalis* MATSUMURA (nec GUENÉE), Ill. Zeit. Ent. (5) 24, p. 381 (1900) [*Pyralis*].

The type specimen of *P. fraterna* BUTL. was taken in Yokohama by Mr. E. M. JONAS. The author had an opportunity of inspecting the following specimens of the species in the collection of the British Museum and Mr. A. E. WILEMAN.

Tokyo.....1 sp. (FENTON)
Yokohama...1 sp. (JONAS, type of *fraterna* BUTL.)
Kiushū2 sps. (LEECH) In Brit. Mus.
Nikko.....2 sps. In Coll. Mr. WILEMAN (London).
Kobe1 sp.

The author has also many examples of this species, collected in Sapporo and Tokyo.

Loc. Distr.: Hok. (Sapporo); Housh. (Nikko; Tokyo; Yokohama; Kobe); Kiush.(?); Oki Island.
Gen. Distr.: Europe; America; Asia; Australia; New Zealand; Korea; Japan.

6. *Pyralis albiguttata* WARR.

Pyralis albiguttata WARREN, Ann. Mag. Nat. Hist. (6) vii, p. 496 (1891); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 156 (1896) [*Stemmatophora*]; id., Trans. Ent. Soc. Lond. p. 514 (1896); LEECH, Trans. Ent. Soc. Lond. p. 425 (1901); MATSUMURA, Cat. Ins. Jap. p. 202 (1905).

The author has transferred this species to genus *Pyralis*, because, after his careful examination he has come to the conclusion that the species has vein 4 of the both wings stalked distinctly with 5, and all other characters are identical with genus *Pyralis*. In genus *Stemmatophora*, vein 4 of the both wings are well separated from 5.

This species was described from Japan. The type specimen of the species was collected at Wada-tōge by Mr. G. LEWIS, and now is in the British Museum. A pair of each sex is in Mr. WILEMAN's collection, the male caught in July, 1900, and the female, in August, 1900, both in Yoshino, by himself.

Loc. Distr.: Honsh. (Wada-tōge; Yoshino).

Gen. Distr.: India; Japan.

7. ***Pyralis suzukii*** sp. nov. (Pl. III, f. 5.)

♂. Palpi greyish, slightly tinged with brown. Head pale reddish brown; frons greyish. Antenna dark brown. Thorax and fore wing sanguineous. Fore wing with a very narrow white antemedial line becoming much broader towards costa, bent outwardly a little; an elongate white postmedial patch from costa to vein 5 with a very narrow line from it to dorsum, highly excurved between vein 5 and above vein 1^b; four white points on costa between lines. Hind wing concolorous to the fore wing, scattered with some black scales on terminal area at just inner side of postmedial line; with whitish ante- and postmedial lines, very minutely waved; inner margin fringed with pale ochraceous long hair; ciliæ concolorous. Abdomen sanguineous, whitish at the extremity of each segment; anal tuft ochraceous, dark reddish at tip. Under surfaces of the wings fuscous; antemedial lines lacking. Pectus and legs greyish. Exp. 18 mm.

Distinguishable from *P. albiguttata* WARR. by the antemedial line of the fore wing becoming broader towards costa and forming an elongate patch; the postmedial patch being much elongate. Also related to *P. prepialis* HMPSN. from India, but differs from it in the following points:

1. Antemedial line of the fore wing not oblique outwardly.
2. Middle area of the fore wing and terminal area of the hind wing are not tinged with grey.
3. Fore wing without a black discocellular spot.
4. Lines on the hind wing is not so highly waved.

One male specimen was taken in Kyoto by Mr. M. SUZUKI, but the date of capture being not well known. Type is in the Ent. Mus. Hokkaido Imp. Univ. Sapporo.

Loc. Distr.: Honsh. (Kyoto).

Habitat: Japan.

8. ***Pyralis pictalis*** CURT. (Pl. III, f. 6.)

Asopia pictalis CURTIS, Brit. Ent. xi, p. 503 (1834); HERRICH-SCHAEFFER, Eur. Schmett. iv, p. 121 (1849); LEDERER, Wien. Ent. Mon. vii, p. 343 (1863); SNELLEN, Tijd. v. Ent. xxvi, p. 123 (1883); STEPHENS, Ill. Brit. Ent. Haust. iv, p. 395 (1834) [*Pyralis*]; GUENÉE, Delt. et Pyr. 120 (1854); WALKER, Cat. Lep. Het. B. M. xvii, p. 267 (1859); SWINHOE & COTES, Cat. Moths of Ind. p. 657 (1889); SWINHOE, Trans. Ent. Soc. Lond. p. 291 (1890); RAGONOT, Ann. Soc. Ent. Fr. p. 38 (1891); MEYRICK, Trans. Ent. Soc. Lond. p. 12 (1894); HAMPSON, Faun. Brit. Ind. Moths, iv. p. 150 (1896); id., Trans. Ent. Soc. Lond. p. 508 (1896); SWINHOE, Cat. Het. Mus. Oxf. ii, p. 431 (1900); STAUDINGER & REBEL, Cat. Lep. Palaerc. ii, p. 45 (1901); LEECH, Trans. Ent. Soc. Lond. p. 423 (1901); MATSUMURA, Cat. Ins. Jap. p. 202 (1905); STRAND, Ent. Mitteilung. viii (1/3), p. 58 (1919); *pronoecalis* WALKER, Cat. Lep. Het. B. M. xix, p. 906 (1859) [*Pyralis*]; RAGONOT, l. c. pp. 37, 43 (1891); LEDERER, l. c. pp. 343, 458 (1863) [*Asopia*]; SNELLEN, Tijd. v. Ent. xxvi, p. 123 (1883); *bractiatella* WALKER, l. c. xxii, p. 36 (1863) [*Myelois*]; MOORE, Lep. Ceyl. iii, p. 262, pl. 178, f. 5 (1885) [*Pyralis*]; WARREN, Proc. Zool. Soc. Lond. p. 332 (1888); SWINHOE & COTES, l. c. p. 654 (1889); *suggeralis* WALKER, l. c. xxxiv, p. 1237 (1865) [*Pyralis*]; RAGONOT, l. c. p. 43 (1891); *elachia* BUTLER, Ill. Typ. Sp. Het. B. M. iii, p. 70, pl. 58-f. 3 (1879) [*Pyralis*]; id., Proc. Zool. Soc. Lond. p. 166 (1883); PRYER, Tr. Asiat. Soc. Jap. xiii (1), p. 59 (1885); BUTLER, Proc. Zool. Soc. Lond. p. 383 (1886); SWINHOE & COTES, l. c. p. 654 (1889).

P. elachia BUTL. was described from Japan. The author saw only the type specimen of BUTLER's species in the collection of the British Museum, collected in Yokohama by Mr. F. M. JONAS.

Another specimen is in the collection of Mr. WILEMAN (London), collected at Takanabe in September, 1895, by himself. We have here in the Entomological Museum, six examples, collected in Iyo, Kochi and Yanagawa.

Loc. Distr.: Honsh. (Yokohama); Shik. (Iyo; Kochi); Kiush. (Takanabe; Yanagawa).

Gen. Distr.: India; Ceylon; New Guinea; Philippines; Formosa; Japan.

9. ***Pyralis regalis*** SCHIFF. ET DEN. (Pl. III, f. 7.)

Pyralis regalis SCHIFFERMÜLLER & DENIS, Syst. Schmett. Wien,

p. 124 (1775); HUEBNER, *Smml. Eur. Schmett. Pyr.* p. 16, pl. 16, f. 105 (1796); GUENÉE, *Delt. et Pyr.* p. 123 (1854); BREMER, *Lep. Ost-Sib.* p. 65 (1864); MEYRICK, *Trans. Ent. Soc. Lond.* p. 476 (1890); HAMPSON, *Faun. Brit. Ind. Moths*, iv, p. 152 (1896); id., *Trans. Ent. Soc. Lond.* p. 509 (1896); STAUDINGER & REBEL, *Cat. Lep. Palaerc.* ii, p. 45 (1901); LEECH, *Trans. Ent. Soc. Lond.* p. 424 (1901); REBEL, *Berl. Ent. Zeitschr.* xlvii, p. 103 (1902); MATSUMURA, *Cat. Ins. Jap.* p. 202 (1905); id., *Jour. Coll. Agr. Hokkaido Imp. Univ.* xv (3), p. 187 (1925); RAGONOT, *Ann. Soc. Ent. Fr.* p. 27 (1891) [*Hypsopygia*]; *pulchellalis* MILLIERE, *Cat. Lep. Alpes-Marit.* p. 221 (1873) [*Pyralis*]; *princeps* BUTLER, *Ill. Typ. Sp. Het. B. M.* vii, p. 91, pl. 134, f. 12 (1889) [*Pyralis*].

This species was first recorded from Japan in 1891 by RAGONOT. The author has hitherto examined the following specimens of the species:

Yezo	2 sps.	In Brit. Mus.
Hakodate	1 sp.	
Japan	3 sps. (HINGENDORF)	In Zool. Mus. (Berlin).
Saga	1 sp. (DÖNITZ)	
Japon	4 sps.	In Nat. Mus. (Paris).
Saga	4 sps.	In Stett. Mus. (Germany).
Jozankei	1 sp.	
Tobetsu	1 sp.	
Junsainuma	1 sp.	In Coll. Mr. WILEMAN (London).
Yoshino	5 sps.	
Karuizawa	1 sp.	
Spporo	8 sps.	
Mt. Daisetsu	2 sps.	
Jozankei	1 sp.	In Ent. Mus. Hokkaido Imp. Univ. (Sapporo).
Tokyo	1 sp.	
Kyoto	1 sp.	
Mt. Daisen	1 sp.	
Loc. Distr.:	Hok. (Mt. Daisetsu; Sapporo; Jozankei; Tobetsu; Junsainuma; Hakodate); Honsh. (Tokyo; Yoshino; Kyoto; Karuizawa); Kiush. (Saga; Mt. Daisen).	
Gen. Distr.:	Europe; Amurland; Corea; Japan; S. Saghalien.	

Genus *Stemmatophora* GN.

(Type *exustalis* GN.)

Stemmatophora GUENÉE, *Delt. et Pyr.* p. 129 (1854); WALKER, *Cat. Lep. Het. B. M.* xvii, p. 278 (1859); LEDERER, *Wien. Ent. Mon.*

- vii, p. 337 (1863); MEYRICK, Trans. Ent. Soc. Lond. p. 282 (1884); MOORE, Lep. Ceyl. iii, p. 260 (1885); RAGONOT, Ann. Soc. Ent. Fr. p. 85 (1891); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 154 (1896); id., Trans. Ent. Soc. Lond. p. 513 (1896); MEYRICK (part), Trans. Ent. Soc. Lond. p. 475 (1890).
Maradana MOORE, Lep. Ceyl. iii, 57 (1884); RAGONOT, Ann. Soc. Ent. Fr. p. 638 (1892).
Koremalepis HAMPSON, Ill. Typ. Sp. Het. B. M. viii, p. 129 (1891).

Synopsis of Species.

- a. The ground colour of wings pale pinkish
brown; middle area paler *S. bicoloralis* LEECH
b. The ground colour of wings sanguineous;
postmedial line of fore wing starting from
an elongate costal patch; middle area
concolorous. *S. valida* BUTL.

10. *Stemmatophora bicoloralis* LEECH (Pl. III, f. 8.)

Endotricha bicoloralis LEECH, Entom. xxii, p. 65, pl. IV, f. 17 (1889); RAGONOT, Ann. Soc. Ent. Fr. p. 524 (1891); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 157 (1896) [*Stemmatophora*]; id., Trans. Ent. Soc. Lond. p. 515 (1896); LEECH, Trans. Ent. Soc. Lond. p. 425 (1901); MATSUMURA, Cat. Ins. Jap. p. 205 (1905); MARUMO, Jour. Coll. Agr. Tokyo Imp. Univ. viii (11), p. 186 (1923); *dulciculalis* SWINHOE, Proc. Zool. Soc. Lond. p. 418 (1889) [*Pyralis*]; RAGONOT, l. c. p. 39 (1891); HAMPSON, Ill. Typ. Sp. Het. B. M. viii, pl. 156, f. 13 (1891).

RAGONOT recorded this species from Japan in 1891 for the first time.

The author had an opportunity of inspecting three (♀♀) Japanese specimens of this species in the collection of the British Museum, two of which collected by Mr. H. H. PRYER, and the third one taken from Hakodate by Mr. ANDREWS. There are two specimens in Mr. WILEMAN'S collection, collected at Yoshino in August, 1899, and in July, 1900, by himself.

We have in the Entomological Museum here in Sapporo two males, one caught in Tokyo in July, 1914, and the other in Chichibu on the 30th of August 1919, by Mr. S. HIRAYAMA.

Loc. Distr.: Hok. (Hakodate); Honsh. (Tokyo; Chichibu; Yoshino);
Kiush. (Yakushima).

Gen. Distr.: India; Corea; Japan.

11. **Stemmatophora valida** BUTL. (Pl. III, f. 9.)

Pyralis valida BUTLER, Ann. Mag. Nat. Hist. (5) iv, p. 451 (1879); PRYER, Tr. Asiat. Soc. Jap. xiii (1), p. 58 (1885); RAGONOT, Ann. Soc. Ent. Fr. pp. 41, 47 (1891) [*Peucele*]; HAMPSON, Trans. Ent. Soc. Lond. p. 515 (1896) [*Stemmatophora*]; LEECH, Trans. Ent. Soc. Lond. p. 425 (1901); MATSUMURA, Cat. Ins. Jap. p. 202 (1905).

The type specimen of the species was collected in Yokohama by Mr. H. H. PRYER, and is now in the British Museum, where are three other Japanese specimens, taken in Kiushū, Shimonoseki and Fushiki by Mr. J. H. LEECH. Three specimens are also in Mr. WILEMAN's collection, one caught in Kagoshima, and the other two in Yoshino. The following specimens are in the Entomological Museum, Sapporo.

Kyoto 1 sp. (SUZUKI).

Beppu 1 sp. (Prof. Dr. MATSUMURA, 10-VII-1916).

Harima 1 sp. (TAKAMUKU, 30-VI-1912).

Yanagawa . . 1 sp. (TAKAMUKU, 16-VI-1913).

Loc. Distr.: Honsh. (Yokohama; Kyoto; Fushiki; Shimonoseki);
Kiush. (Beppu; Harima; Yanagawa; Kagoshima).

Gen. Distr.: China; Japan.

Genus **Tamraca** MOOR.

(Type *torridalis* LED.)

Tamraca MOORE, Lep. Ceyl. iii, p. 554 (1887); RAGONOT, Ann. Soc. Ent. Fr. p. 71 (1891); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 158 (1896); id., Trans. Ent. Soc. Lond. p. 516 (1896).

A single species belonging to this genus has so far been described in the world.

12. **Tamraca torridalis** LED. (Pl. III, f. 10.)

Asopia torridalis LEDERER, Wien. Ent. Mon. vii, pp. 342, 457, pl. 6, f. 15 (1863); WALKER, Cat. Lep. Het. B. M. xxxiv, p. 1304 (1865); SWINHOE, Proc. Zool. Soc. Lond. p. 868 (1885); MOORE, Lep. Ceyl. iii, p. 264 (1885) [*Pyralis*]; id., l. c. p. 554, pl. 215, ff. 7 (♂), 8 (♀) (1887) [*Tamraca*]; SWINHOE & COTES, Cat. Moths of Ind. p.

626 (1889); RAGONOT, Ann. Soc. Ent. Fr. p. 71 (1891); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 159 (1896); id., Trans. Ent. Soc. Lond. p. 517 (1896); LEECH, Trans. Ent. Soc. Lond. p. 426 (1901); MATSUMURA, Cat. Ins. Jap. p. 202 (1905); MIYAKE, Annot. Zool. Jap. vi (3), p. 209 (1907); *incerta* WALKER, Cat. Lep. Het. B. M. xxxiii, p. 829 (1865 [*Varnia?*]); SWINHOE & COTES, l. c. p. 340 (1888); *brunneus* SUZUKI, List Sp. Hanazono Ent. Labr. p. 24 (1915) [*Coenodomus*] non descr.

This species was recorded from Japan in 1901 by LEECH for the first time. The specimens of the species the author has hitherto examined are as follows:

Nikko	1 sp. (LEECH)	
Nagahama	1 sp. (, ,)	In Brit. Mus.
Fushiki	1 sp. (, ,)	
Kiushū	1 sp. (, ,)	
Shioya	8 sps.	In Coll. Mr. WILEMAN
Kagoshima	1 sp.	(London).
Kyoto	3 sps. (SUZUKI)	
Iyo	1 sp. (ARAKAWA)	In Ent. Mus. Hokkaido
?	3 sps.	Imp. Univ. (Sapporo).

Loc. Distr.: Honsh. (Nikko; Kyoto; Nagahama; Shioya; Fushiki); Shi. (Iyo); Kiush. (Kagoshima); Oki Is. (Kitakata).

Gen. Distr.: India; Ceylon; Borneo; Java; Singapore; China; Japan.

Genus **Herculia** Wlk.

(Type *marthalis* Wlk.)

Herculia WALKER, Cat. Lep. Het. B. M. xix, p. 807 (1859); MOORE, Lep. Ceyl. iii, p. 261 (1885); RAGONOT, Ann. Soc. Ent. Fr. p. 628 (1892); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 159 (1896); id., Trans. Ent. Soc. Lond. p. 517 (1896).

Cisse WALKER, l. c. xxvii, p. 125 (1863).

Buzala WALKER, l. c. p. 129 (1863).

Ocrasa WALKER, l. c. xxxiv, p. 1212 (1865); MEYRICK, Trans. Ent. Soc. Lond. p. 72 (1884); RAGONOT, l. c. p. 36 (1891).

Bejuda WALKER, l. c. p. 1273 (1865).

Pseudasopia GROTE, Bul. Buff. Soc. Nat. Sci. I, p. 172 (1873).

Orthopygia RAGONOT, l. c. p. 29 (1891).

Dolichomia RAGONOT, l. c. p. 30 (1891).

Tricharchenia WARREN, Ann. Mag. Nat. Hist. (6) ix, p. 173 (1892).

This is the largest genus in the subfamily, and is extensively distributed all over the world.

We have, in Japan, nine species in all.

Synopsis of Species.

- A. Both wings pale greyish brown.
 - a. Both wings with lines dark *H. nannodes* BUTL.
 - b. Both wings with lines yellowish *H. glaucinalis* LINN.
 - B. Both wings yellowish.
 - a. Both wings with lines dark *H. repetita* BUTL.
 - b. Both wings with lines yellowish
 - a'* Fore wing with the postmedial line strongly curved inwardly on the dorsal area *H. jezoensis* SHIB. (sp. nov.)
 - b'* Fore wing with the postmedial line very slightly incurved on the dorsal area; middle area of hind wing much narrower *H. placens* BUTL.
 - C. Both wings black or dark brown.
 - a. Ciliæ black *H. nigralis* SHIB. (sp. nov.)
 - b. Ciliæ yellow *H. japonica* WARR.
 - D. Both wings dark reddish.
 - a. Comparatively large in size; ciliæ with the outer half yellow *H. pelagalis* Wlk.
 - b. Very small in size; ciliæ purplish *H. nanalis* WLMN.
13. ***Herculia repetita*** BUTL. (Pl. III, f. 12.)

Pyralis repetita BUTLER, Ann. Mag. Nat. Hist. (5) xx, p. 115 (1887); RAGONOT, Ann. Soc. Ent. Fr. p. 43 (1891); id., l. c. p. 630 (1892); HAMPSON, Trans. Ent. Soc. Lond. p. 518 (1896) [*Herculia*].

This species has hitherto not been recorded from Japan. A single male specimen was obtained at Yanagawa in Kiushū on the 9th of September, 1915, by Mr. T. TAKAMUKU, and now is in the Entomological Museum, Sapporo.

Loc. Distr.: Kiush. (Yanagawa).

Gen. Distr.: Solomans; Tahiti; Japan.

14. ***Herculia glaucinalis*** LINN. (Pl. III, f. 11.)

Phalaena (Pyralis) glaucinalis LINNAEI, Syst. Nat. ed. x, p. 533 (1758); id., l. c. ed. xii, (ii), p. 811 (1767); HUEBNER, Smml. Eur.

Schmett. Pyr. p. 10, pl. 19, f. 126 (1796); STEPHENS, Syst. Cat. Brit. Ins. ii, p. 160 (1829); id., Ill. Brit. Ent. Haust. iv, p. 26 (1834); BREMER, Lep. Ost-Sib. p. 65 (1864); MEYRICK, Trans. Ent. Soc. Lond. p. 476 (1890); id., Brit. Lep. p. 427 (1895); RAGONOT, Ann. Soc. Ent. Fr. p. 32 (1891) [*Orthopygia*]; HAMPSON, Trans. Ent. Soc. Lond. p. 518 (1896) [*Herculia*]; STAUDINGER & REBEL, Cat. Lep. Palaerc. ii, p. 46 (1901); LEECH, Trans. Ent. Soc. Lond. p. 426 (1901); MENDES, Broteria, iii, p. 230 (1904); MATSUMURA, Cat. Ins. Jap. p. 202 (1905); OKAMOTO, Bul. Agr. Exp. Stn. I, (2), p. 149 (1924); MATSUMURA, Jour. Coll. Agr. Hokkaido Imp. Univ. xv (3), p. 187 (1925); DUPONCHEL, Hist. Nat. Lep. Fr. viii (2), p. 196, pl. 223, f. 2 [*Asopia*]; Reuter, Acta, Faun. Fl. Fennica, xv (5), p. 9 (1899); *nitidalis* FABRICIUS, Ent. Syst. iii (2), p. 228 (1794) [*Phalaena*]; *yokohamæ* BUTLER, Ann. Mag. Nat. Hist. (5) iv p. 452 (1879) [*Pyralis*]; PRYER, Tr. Asiat. Soc. Jap. xiii (1), p. 58 (1885).

The type specimen of BUTLER's species was taken in Yokohama by Mr. H. H. PRYER, and now is kept in the British Museum. One male is in the Zoological Museum in Berlin, taken at Nikko by HINNERBERG. There are four Japanese examples of this species in the Stettin Museum in Germany, collected in Yokohama. Another, in Dr. STAUDINGER & BANG HAAS' collection (Dresden), also taken in Yokohama. This species seems to occur very commonly throughout Japan.

Loc. Distr.: Hok. (Jozankei; Sapporo); Honsh. (Nikko; Tokyo; Yokohama; Yoshino; Fushiki); Kiushū.
Gen. Distr.: Europe; C. & W. China; Corea; Japan.

15. ***Herculia nannodes* BUTL.** (Pl. III, f. 13.)

Pyralis nannodes BUTLER, Ill. Typ. Sp. Het. B. M. iii, p. 71, pl. 58, f. 5 (1879); PRYER, Tr. Asiat. Soc. Jap. xiii (1), p. 59 (1885); RAGONOT, Ann. Soc. Ent. Fr. pp. 37, 40 (1891) [*Ocrasa*]; HAMPSON, Trans. Ent. Soc. Lond. p. 518 (1896) [*Herculia*]; LEECH, Trans. Ent. Soc. Lond. p. 426 (1901); MATSUMURA, Cat. Ins. Jap. p. 203 (1905).

Described from Japan. The type specimen of the species was taken in Yokohama by Mr. F. M. JONAS, and is now preserved in the British Museum. Several examples are in the collection of Mr. WILEMAN, all collected at Yoshino. We have here in the Entomological Museum four examples, from Tokyo and Yanagawa.

Loc. Distr.: Honsh. (Tokyo; Yokohama; Yoshino); Kiush. (Yanagawa).

Gen. Distr.: China; Japan.

16. **Herculia jezoensis** sp. nov. (Pl. III, f. 14.)

Related to *H. bilinealis* SOUTH from China, but differs from it in the following characters:

1. Ground colour much paler.
2. Area between ante- and postmedial lines of fore wing broader.
3. Fore wing with an antemedial line nearer to base.
4. Postmedial line of hind wing more strongly incurved at above dorsum.
5. Fore wing with an obscure discocellular spot.
6. Ante- and postmedial lines of fore wing whitish instead of being yellowish.

♀. Palpi and head pale ochraceous white. Antenna ochraceous. Thorax whitish, tinged with ochraceous. Fore wing pale brown; a broad white antemedial line excurved at median nervure and dorsum; an obscure dot at discocellulars; postmedial line white, broad, and strongly excurved between vein 5 and above vein 1^b; five white spots on costa between the lines; cilia much paler. Hind wing paler than the fore wing; a white postmedial line, rather indistinct; cilia as to the fore wing. Abdomen pale ochraceous white. Under surfaces of both wings paler; lines indistinct. Pectus whitish. Legs pale ochraceous. Exp. 27 mm.

A single female specimen was taken in Sapporo on the 10th of August, 1918, by Prof. Dr. S. MATSUMURA. The type is in the Ent. Mus. Sapporo.

Loc. Distr.: Hok. (Sapporo).

Habitat: Japan.

17. **Herculia nigralis** sp. nov. (Pl. III, f. 15.)

♂. Palpi fuscous, the 3rd joint whitish. Head fuscous; antenna pale reddish brown. Thorax and abdomen blackish. Fore wing blackish; with a whitish antemedial line, almost erect from costa to median nervure, then incurved; five white spots on costa between ante- and postmedial lines; a large black discocellular dot; a white postmedial line starting from an elongate white patch at costa, bent outwardly between vein 7 and below vein 2. Hind wing concolorous

to the fore wing; with an indistinct white postmedial line, moderately excurved between costa and below vein 1^a. Ciliæ of the both wings blackish. Abdomen blackish. Under surfaces of both wings paler. Pectus and legs greyish, suffused with black. Exp. 20 mm.

Holotype ♂. 10-VIII-1918 (Prof. Dr. S. MATSUMURA).

Paratype ♂. 10-VIII-1918 (Prof. Dr. S. MATSUMURA).

Types in the Ent. Mus. Hokkaido Imp. Univ. Sapporo.

Distinguishable from *H. albolinealis* HMPSEN. from India, by the lines of the wings being broader, and with a large blackish discocellular dot; antenna pale reddish brown instead of being fuscous.

Loc. Distr.: Hok. (Sapporo).

Habitat: Japan.

18. ***Herculia placens*** BUTL. (Pl. III, f. 18.)

Rhodaria placens BUTLER, Ill. Typ. Sp. Het. B. M. iii, p. 72, pl. 58, f. 10 (1879); PRYER, Tr. Asiat. Soc. Jap. xiii (1), p. 59 (1885); MATSUMURA, Ill. Zeit. Ent. Berl. 5 (24), p. 381 (1900); RAGONOT, Ann. Soc. Ent. Fr. p. 628 (1892) [*Orthopygia*]; HAMPSON, Trans. Ent. Soc. Lond. p. 519 (1896) [*Herculia*]; STAUDINGER & REBEL, Cat. Lep. Palaerc. ii, p. 258 (1901); LEECH, Trans. Ent. Soc. Lond. p. 426 (1901); MATSUMURA, Cat. Ins. Jap. p. 203 (1905).

Described from Japan, the type of the species was taken in Yokohama by Mr. F. M. JONAS. Specimens the author has hitherto examined personally are as follows:

Yokohama..1 sp. Type	In Brit. Mus.
Toyo1 sp.	
Yokohama..1 sp.	In Coll. Dr. STAUDINGER & BANG HAAS. (Dresden).
Yoshino1 sp.	In Coll. Mr. WILEMAN (London).
Saga5 sps.	
Japan1 sp.	In Stett. Mus. (Germany).
Saga2 sps. (DÖNTZ)	In Zool. Mus. (Berlin).
Sapporo7 sps.	In Ent. Mus. Hokkaido Imp. Univ. (Sapporo).
Shimauchi..2 sps.	

Loc. Distr.: Hok. (Sapporo); Honsh. (Tokyo; Yokohama; Yoshino; Shimauchi); Kiush. (Saga).

Gen. Distr.: China; Japan.

19. **Herculia japonica** WARR. (Pl. III, f. 19.)

Hypsopygia japonica WARREN, Ann. Mag. Nat. Hist. (6) vii, p. 499 (1891); RAGONOT, Ann. Soc. Ent. Fr. p. 628 (1892) [*Orthopygia*]; HAMPSON, Trans. Ent. Soc. Lond. p. 519 (1896) [*Herculia*]; LEECH, Trans. Ent. Soc. Lond. p. 427 (1901); MATSUMURA, Cat. Ins. Jap. p. 203 (1905).

The type specimen of this species was taken from Japan, but its exact locality is unknown.

Japan	1 sp. (Type)	In Brit. Mus.
Tokyo	1 sp. (LEECH)	
Saga	6 sps.	In Stett. Mus. (Germany).
Saga	2 sps.	In Zool. Mus. (Berlin).
Tokyo	sp.	
Kyoto	sp.	In Ent. Mus. Hokkaido
Yanagawa	sp.	Imp. Univ. (Sapporo).

Loc. Distr.: Honsh. (Tokyo; Kyoto; Nikko); Kiush. (Saga; Yanagawa).

Gen. Distr.: China; Japan.

20. **Herculia pelasgalis** Wlk. (Pl. III, f. 21.)

Pyralis pelasgalis WALKER, Cat. Lep. Het. B. M. xvii, p. 269 (1859); RAGONOT, Ann. Soc. Ent. Fr. p. 31 (1891) [*Orthopygia*]; HAMPSON, Trans. Ent. Soc. Lond. p. 520 (1896) [*Herculia*]; LEECH, Trans. Ent. Soc. Lond. p. 427 (1901); MATSUMURA, Cat. Ins. Jap. p. 203 (1905); MARUMO, Jour. Coll. Agr. Tokyo, Imp. Univ. viii (11), p. 186 (1923); OKAMOTO, Bull. Agr. Exp. Stn. Chosen, Gov.-Gen. I (2), p. 149 (1924).

This species was first recorded from Japan by Ragonot in 1891.

The specimens the author has hitherto examined are as follows:

Nikko	1 sp.	
Kyoto	1 sp.	In Brit. Mus.
Yokohama	1 sp.	
Tsushima	1 sp.	
Yoshino	1 sp.	
Settsu	1 sp.	
Iyo	1 sp.	In Coll. Mr. WILEMAN (London).
Osumi	1 sp.	
Tokyo	1 sp.	
Kyoto	4 sps.	In Ent. Mus. Hokkaido Imp.
Iyo	2 sps.	Univ. (Sapporo).

Loc. Distr.: Honsh. (Nikko; Tokyo; Kyoto; Yoshino; Settsu); Shik. (Iyo); Kiush. (Osumi; Yakushima; Tanegashima).
Gen. Distr.: China; Corea; Japan.

21. **Herculia nanalis** WLMN. (Pl. IV, f. 2.)

Pyralis nanalis WILEMAN, Trans. Ent. Soc. Lond. p.369 (1911).

Described from Japan. The type specimen of the species came from Yoshino. We have here in the Entomological Museum a pair of each sex, the male caught in Kyoto by Mr M. SUZUKI, and the female at Yanagawa in July, 1916, by Mr. T. TAKAMUKU.

Loc. Distr.: Honsh. (Yoshino; Kobe; Kyoto; Shioya); Kiush. (Yanagawa).

Gen. Distr.: Japan.

This species with the labial palpi upturned and reaching vertex of head, the 3rd joint porrect, short and acute; antenna of male ciliated; both wings with vein 4 not stalked with 5; mid-tibia fringed with scales. The author has therefore placed this species under genus *Herculia*.

Genus **Trebania** RAG.

(Type *flavifrontalis* LEECH)

Trebania RAGONOT, Ann. Soc. Ent. Fr. pp. 627, 645 (1892); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 174 (1896); id., Trans. Ent. Soc. Lond. p. 531 (1896).

Only three species belonging to this genus have been described in the world and we have only one in Japan.

22. **Trebania flavifrontalis** LEECH (Pl. VI, f. 3.)

Propachys flavifrontalis LEECH, Entom. xxii, p. 108, pl. v, f. 6 (1889); RAGONOT, Ann. Soc. Ent. Fr. p. 646(1892) [*Trebania*]; HAMPSON, Trans. Ent. Soc. Lond. p. 532 (1896); LEECH, Trans. Ent. Soc. Lond. p. 430 (1901); MATSUMURA, Cat. Ins. Jap. p. 203 (1905).

Described from China; LEECH gave Japan also as a locality of the species. There is a series of Japanese specimens in the British Museum, taken in Kiushū, Tsuruga and Nagahama by Mr. LEECH. Another one specimen is in the National Museum in Paris, which was also taken in Kiushū by Mr. LEECH. We have, in the Entomological Museum here in Sapporo, two female and one male specimens, taken in 1918 and 1919 at Chichibu.

Loc. Distr.: Honsh. (Chichibu; Tsuruga; Nagahama); Kiushū.

Gen. Distr.: China; Formosa; Japan.

Genus **Sybrida** Wlk.

(Type *inordinata* Wlk.)

Sybrida WALKER, Cat. Lep. Het. B. M. xxxii, p. 465 (1865); RAGONOT, Ann. Soc. Ent. Fr. p. 72 (1891); HAMPSON (part), Faun. Brit. Ind. Moths, iv, p. 169 (1896); id., Trans. Ent. Soc. Lond. p. 528 (1896).

Paravetta MOORE, Proc. Zool. Soc. Lond. p. 814 (1865); SNELLEN, Trans. Ent. Soc. Lond. p. 557 (1890).

Datanoides BUTLER, Ent. Mon. Mag. xiv, p. 206 (1878).

Xestula SNELLEN, Rom. Mém. ii, p. 197 (1885).

Genus *Sybrida* has hitherto been sunk into genus *Sacada*, but on investigation the author found that the former has vein 7 of fore wing arising from 8 before 9, while in the latter this veins is arising from 8 after 9. The author has, therefore, in this paper treated *Sybrida* as a distinct genus.

Synopsis of Species.

- a. Fore wing with lines approximated each other on dorsal area.
 - a.' Postmedial line oblique inwardly, and incurved at middle *S. approximans* LEECH
 - b.' Postmedial line oblique inwardly, and almost straight *S. misakiensis* SHIB. (sp. nov.)
- b. Fore wing with lines nearly parallel with each other *S. fasciata* BUTL.

23. ***Sybrida approximans*** LEECH (Pl. III, f. 16.)

Datanoides approximans LEECH, Proc. Zool. Soc. Lond. p. 636, pl. 32, f. 4 (1888); id., Trans. Ent. Soc. Lond. p. 429 (1901) [*Sacada*]; MATSUMURA, Cat. Ins. Jap. p. 203 (1905); HAMPSON (part), Faun. Brit. Ind. Moths, iv, p. 169 (1896); id., Trans. Ent. Soc. Lond. p. 529 (1896); SWINHOE, Cat. Het. Mus. Oxf. ii, p. 435 (1900).

The type specimen of the species was taken in Yokohama by Mr. H. H. PRYER, and now is in the collection of the British Museum.

Loc. Distr.: Honsh. (Morioka; Yokohama; Kobe; Fushiki); Shik. (Iyo).

Gen. Distr.: Japan.

This species differs from *S. inordinata* Wlk. in the following points.

1. Much smaller in size.
2. Hind wing darker.
3. Fore wing with a postmedial line excurved twice instead of being straightly oblique inwardly from costa to dorsum.

24. ***Sybrida misakiensis*** sp. nov. (Pl. IV, f. 1.)

♀. Palpi, head, antenna and thorax fuscous. Fore wing dark fuscous, middle area much paler; a pale antemedial line slightly excurved between costa and vein 1^b, then inwardly; a black discocellular lunule; postmedial line pale, oblique inwardly, very closely approximated to the antemedial line on dorsal area; cilia darker. Hind wing fuscous, somewhat paler than the fore wing; cilia paler at the outer half. Abdomen concolorous to the thorax, paler at extremity of each segment. Under surface of fore wing fuscous except the outer area where it is fulvous; the antemedial line lacking; the discocellular lunule and postmedial line indistinct. Hind wing with basal half fuscous, the rest fulvous. Legs fringed with sanguineous hair; tibiæ and tarsi greyish, scattered with sanguineous scales. Exp. ♀ 39 mm.

Holotype. ♀ 18-21-VI-1911. Misaki (Coll. Prof. Dr. S. MATSUMURA).

Closely related to *S. inordinata* Wlk. from India, but it may not be confused with the latter being smaller in size, and the antemedial line very slightly excurved instead of being strongly oblique outwardly from costa to above vein 1^b, then inwardly; lines on the fore wing paler. Also comes near to *S. approximans* LEECH, but the species is easily distinguished from the latter by its postmedial line which is oblique inwardly, being not incurved at middle, and the ground colour of the wings fuscous.

Loc. Distr.: Honsh. (Misaki).

Habitat: Japan.

25. ***Sybrida fasciata*** BUTL. (Pl. III, f. 17.)

Datanoides fasciata BUTLER, Ent. Mon. Mag. xiv, p. 207 (1878);

id., Ill. Typ. Sp. Het. B. M. iii, p. 11, pl. 43, f. 4 (1879); PRYER, Tr. Asiat. Soc. Jap. xii (2), p. 57 (1884); LEECH, Proc. Zool. Soc. Lond. p. 636 (1888); HAMPSON, Trans. Ent. Soc. Lond. p. 529 (1896) [*Sacada*]; STAUDINGER & REBEL, Cat. Lep. Palaerc. ii, p. 46 (1901); LEECH, Trans. Ent. Soc. Lond. p. 429 (1901); MATSUMURA, Cat. Ins. Jap. 203 (1905); id., Jour. Coll. Agr. Hokkaido Imp. Univ. xv (3), p. 187 (1925); *miraculosa* SNELLEN, Rom. Mém. ii, p. 199, pl. 11 (1885) [*Xestula*]; RAGONOT, Ann. Soc. Ent. Fr. p. 73 (1891) [*Sybrida*].

Described from Japan. The type of the species was taken in Yokohama by Mr. F. M. JONAS, and it is now in the British Museum. We have a series of specimens in the Entomological Museum, Sapporo, obtained in Sapporo.

Loc. Distr.: Hok. (Sapporo); Honsh. (Nikko; Yokohama; Shimauchi; Yoshino).

Gen. Distr.: Amurland; Corea; Japan; S. Saghalien.

Genus **Bostra** Wlk.

(Type *illusella* Wlk.)

Bostra WALKER, Cat. Lep. Het. B. M. xxvii, p. 123 (1863); HAMPSON, Faun. Brit. Ind. Moths, iv, p. 175 (1896); id., Trans. Ent. Soc. Lond. p. 533 (1896).

Phasga WALKER, l. c. p. 127 (1863).

Arippara WALKER, Jour. Linn. Soc. Zool. vii, p. 74 (1864).

Paleca BUTLER, Ann. Mag. Nat. Hist. (5) iv, p. 354 (1879).

Paredra SNELLEN, Veth. Midd.-Sumat. iv (1), p. 60 (1880); RAGONOT, Ann. Soc. Ent. Fr. p. 77 (1891).

Scotomera BUTLER, Proc. Zool. Soc. Lond. p. 622 (1881); RAGONOT, l. c. p. 643 (1892).

Megalomia RAGONOT, l. c. pp. 23,35 (1891).

Only one species is known from Japan.

26. **Bostra indicator** Wlk. (Pl. III, f. 20.)

Arippara indicator WALKER, Jour. Linn. Soc. Zool. vii, p. 74 (1864); id., Cat. Lep. Het. B. M. xxxiii, p. 850 (1865); SWINHOE, Cat. Het. Mus. Oxf. ii, p. 435 (1900) [*Bostra*]; HAMPSON, Jour. Bomb. Nat. Hist. Soc. xviii, p. 270 (1908); *marginata* WALKER, Cat. Lep. Het. B. M. xxxiii, p. 991 (1865) [*Poaphila*]; RAGONOT, Ann. Soc. Ent. Fr. p. 78 (1891) [*Paredra*]; HAMPSON, Faun. Brit. Ind. Moths, iv, p. 176 (1896) [*Bostra*]; id., Trans. Ent. Soc. Lond. p. 534

(1896); LEECH, Trans. Ent. Soc. Lond. p. 431 (1901); MATSUMURA, Cat. Ins. Jap. p. 203 (1905); MARUMO, Jour. Coll. Agr. Tokyo Imp. Univ. viii (11), p. 186 (1923); *rufescens* BUTLER, Ann. Mag. Nat. Hist. (5) iv, p. 354 (1879) [*Paleca*]; MATSUMURA,* Trans. Sapporo, Nat. Hist. Soc. ix (1), p. 41 (1924); *eogenalis* SNELLEN, Veth. Mid.-Sumat. iv (1), p. 60 (1880) [*Paredra*]; id., Tijd. v. Ent. xxvi, p. 120, pl. 6, ff. 1, 1a (1883); RAGONOT, l. c. p. 78 (1891); *assamica* MOORE, Lep. Atk. p. 205, pl. 7, f. 5 (1888) [*Pyralis*].

P. rufescens BUTL. was described from Japan. The type specimen of the species was collected in Yokohama by Mr. H. H. PRYER, and is now in the British Museum, together with six other Japanese specimens, taken in Yokohama and Nagahama by Mr. J. H. LEECH. Two examples are in the Entomological Museum here in Sapporo, obtained in Kyoto and Minomo.
Loc. Distr.: Honsh. (Yokohama; Kyoto; Hagahama) Shik. (Iyo);
Kiush. (Satsuma; Minomo; Tanegashima).
Gen. Distr.: India; Borneo; Corea; Japan.

Genus **Hirayamaia** MARUMO

(Type *regalis* LEECH)

Hirayama MARUMO, Nawa Essays, p. 36 (1917); SHIBUYA, Insect World, Gifu, xxxi (10) p. 332 (1927).

To be separated from genus *Orybina* SNELL., the genotype of which is *flaviplaga* WLK. by the fore wing with vein 4 being well separated from 5 instead of being closely approximated each other towards the origin for about one third length of veins; the hind wing with veins 6, 7 stalked for some distance instead of being free from each other.

27. **Hirayamaia regalis** LEECH (Pl. III, f. 22.)

Oryba regalis LEECH, Entom. xxii, p. 71, pl. iv, f. 9 (1889); RAGONOT, Ann. Soc. Ent. Fr. p. 96 (1891); HAMPSON, Trans. Ent. Soc. Lond. p. 540 (1896) [*Orybina*]; LEECH, Trans. Ent. Soc. Lond. p. 432 (1901); WILEMAN, Trans. Ent. Soc. Lond. p. 370 (1911); MARUMO, Nawa Essays, p. 37 (1917) [*Hirayamaia*]. Sir G. F. Hampson gave Japan as the locality of this species instead of Corea. However, the type specimen came from Gensan in

* MATSUMURA misplaced this species in the Family *Notodontidæ*.

Corea (collected in July, 1887); thus we can see that Sir HAMPSON made a mistake in giving Japan as the locality of the species.

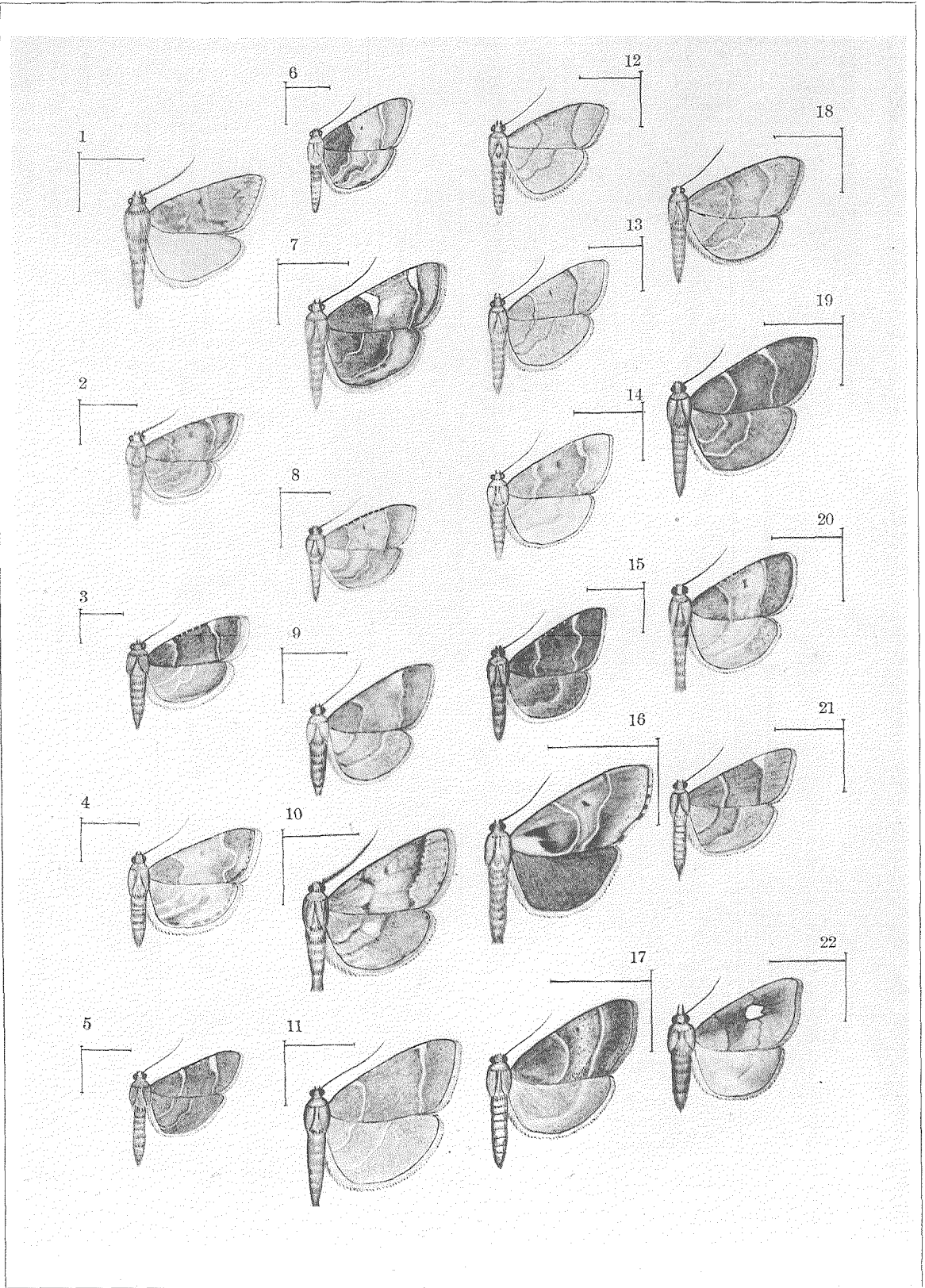
In 1911, Mr. A. E. WILEMAN, in a paper in the Transactions of The Entomological Society of London, recorded this species from Japan for the first time. We have here in the Entomological Museum, four specimens in all, three of which taken in Kyoto by Mr. M. SUZUKI, and the remaining one in Iyo by Mr. S. ARAKAWA.

Loc. Distr.: Honsh. (Yoshino; Kyoto); Shik. (Iyo).

Gen. Distr.: Corea; China; Japan.

Explanation of Plate III

1. *Aglossa dimidiata* Haw.
2. *Hypsopygia mauritialis* Boisd.
3. *Hypsopygia regina* Butl.
4. *Pyralis farinalis* Linn.
5. *Pyralis suzuki* Shibuya (Sp. nov.)
6. *Pyralis pictalis* Curt.
7. *Pyralis regalis* Schiff. et Den.
8. *Stenmatophora bicoloralis* Leech
9. *Stenmatophora valida* Butl.
10. *Tamraca torridalis* Led.
11. *Herculia glaucinalis* Linn.
12. *Herculia repetita* Butl.
13. *Herculia nannodes* Butl.
14. *Herculia jezoensis* Shibuya (sp. nov.)
15. *Herculia nigralis* Shibuya (sp. nov.)
16. *Sybrida approximans* Leech
17. *Sybrida fasciata* Butl.
18. *Herculia placens* Butl.
19. *Herculia japonica* Warr.
20. *Bostra indicator* Wlk.
21. *Herculia pelasgalis* Wlk.
22. *Hirayamaia regalis* Leech



J. Shibuya

Explanation of Plate IV

1. *Sybrida misakiensis* Shibuya (sp. nov.)
2. *Herculia nanalis* Wlmn.
3. *Trebania flavifrontalis* Leech
4. Neurations of both wings of *Aglossa dimidiata* Haw.
5. " " *Hypsopygia regina* Butl.
6. " " *Pyralis farinalis* Linn.
7. " " *Stemmatophora bicoloralis* Leech
8. " " *Tamraca torridalis* Led.
9. " " *Bostra indicator* Wlk.
10. " " *Hirayamaia regalis* Leech
11. Head & Appendages of *Aglossa dimidiata* Haw.
12. " " *Hypsopygia regina* Butl.
13. " " *Pyralis farinalis* Linn.
14. " " *Stemmatophora bicoloralis* Leech
15. " " *Tamraca torridalis* Led.
16. " " *Herculia glaucinalis* Linn.
17. " " *Sybrida fasciata* Butl.
18. " " *Bostra indicator* Wlk.
19. " " *Trebania flavifrontalis* Leech
20. " " *Hirayamaia regalis* Leech
21. Neurations of both wings of *Herculia glaucinalis* Linn.
22. " " *Sybrida fasciata* Butl.
23. " " *Trebania flavifrontalis* Leech
24. Legs of *Herculia glaucinalis* Linn.: a. Fore-leg; b. Mid-leg; c. Hind-leg.
25. Legs of *Sybrida fasciata* Butl.: a. Fore-leg; b. Mid-leg; c. Hind-leg.
26. Dorsal view of denuded body of *Bostra indicator* Wlk.
 - a. Labial palpi.
 - b. Maxillary palpi.
 - c. Compound eyes.
 - d. Antennae.
 - e. Simple eyes.
 - f. Prothoracic lobes.
 - g. Scapula.
 - h. Mesoscutum.
 - i. Mesoscutellum.
 - j. Metascutum.
 - k. Metascutellum.
 - l. Abdomen.

