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# A Revision of the Genus *Promalactis* of Korea (Lep., Oecophoridae)

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## 韓國産 *Promalactis*屬(원뿔나방科)의 分類學的 整理

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**Abstract**

In Korea, only one species of genus *Promalactis* has been reported to date. This study was carried out to revise Korean species of the genus *Promalactis*. From the result of it, four species are reported for the first time. The species are *Promalactis jezonica*, *P. suzukiella*, *P. enopisema*, *P. autoclina*.

## INTRODUCTION

The genus *Promalactis* was established by Meyrick(1908) for new species *holozona*, in which he described other eleven species from India and Ceylon. They were originally included in the family Elachistidae even he considered it was associated with Oecophoridae at that time. Moths of this genus are usually brilliantly marked with white or metallic markings. Little has been known of the habbits of larva. Some species of *Promalactis* live in the crack or beneath of bark where they feed either on refuse. Some are reported as feeders of dead leaves.

Classification of the genus *Promalactis* has not been revised in the world. According to British Museum Index, there are currently about 35 Palaearctic and Oriental species, and are also some African species. Of them 26 species were described from South and North India, and 9 species, including 6 species from Japan, from China and Far-East Asia. However, the distributional data for the genus *Promalactis* are far from complete due to the lack of comprehensive studies since Meyrick's Exotic Microlepidoptera.

In Japan, the first *Promalactis* species reported is *enopisema* which was described by Butler in 1879 under the name of *Oecophora enopisema*. After it, Matsumura(1931) described 3 new species; *jezonica*, *sakaiella* and *suzukiella* from Japan, which were originally under the genus *Borkhausenia*. And the species *pyrochalca* was described from Japan by Meyrick in 1931 and *autoclina* in 1935.

Inoue(1954) listed seven species belonging to the genus *Promalactis* in the "Check List of Lepidoptera of Japan", in which *symbolopa* Meyrick was treated as a good species. However, Kuroko(1959) synonymized *symbolopa* Meyrick as a junior synonym of *jezonica* Matsumura. Even he also sinked *autoclina* as a junior synonym of *sakaiella* Matsumura, they are different species each other.

In Korea, no species had been reported from Korea until writer described a new species *odaiensis* in 1980. The present study is to report newly

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four species of *promalactis* from Korea and to lay a foundation for the study of this genus.

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## Genus *Promalactis* Meyrick

*Promalactis* Meyrick, 1908, Journ. Bombay Nat. Hist. Soc., 18:806.

Type species—*Promalactis holozona* Meyrick
Type locality—N. Coorg., India

### 1. **Promalactis jezonica** (Matsumura)네방원뿔나방

*Borkhausenia jezonica* Mats., 1931, 6000 Ill. Ins. Japan. p.1088, No. 2232.

*Promalactis symbolopa*; Exotic Microlep., 4:593.

—Gaede, 1938~1939, in Bryk, Lep. Cat. Pars 88:26

—Inoue, 1954, Check List Japan Lep., 1954:63

—Issiki, 1957, Icon. Het. Japan Col. Nat., 1957: 52

—Clarke, 1963, Cat. Type Specimens Microl. B. M.(Nat. Hist), 4:406

*Promalactis jezonica;* Kuroko, 1959, Trans. Lep. Soc. Jap. 10:34-35

This species was originally described from Hokkaido, Japan, by Matsumura(1931). Meyrick(1935) also described a new species; *symbolopa* with a female specimen which was collected in Kyusku, Japan. However, Kuroko(1959) synonymized *symbolopa* Meyrick as a junior synonym of *jezonica* Mats.

In fact, original desbriptions by Matsumura at that time were published very shortly in Japanese. For the reason they have been sometimes missed in foreign publications.

♂. 9mm. Head shinning white, appressed scale. Thorax bronzy fuscous. Antenna 4/5 of wing; scape elongate, shinning white especially above. Second segment of labial palpi ochreous, recurved; terminal segment dark brown, slender. Ground colour of fore wing brownish orange with white, metallic markings; a fine oblique white line nearly at base; secondary streak nearly oblique from 1/4 of costa to 1/3 of dorsum; a white triangular blotch from costa reaching half across wing, evenly white, followed by medium oblique streak to the opposite direction to 1/2 of dorsum; apical spot consist of 4~5 rooms, slightly edged with blackish irroration. Hindwing grey, elongate with long grey cilia.

MALE GENITALIA. Plate Ⅰ, Figs. 1~3. Plate Ⅱ, Figs. 4&5, Uncus somewhat stumpy, not pointed apically. Gnathos tongue-shape. Distal process of sacculus free, well developed with many short stong spines. Tegumen developed. Saccus moderate somewhat semi-ovate. Aedeagus slender, as long as genitalia, nearly straight.

MATERIAL EXAMINED. Mt. Jiri, Jeon-nam Prov.; 1♂, 17, Ⅶ 1977(K.S. Woo), Slide no. IAS-931

DISTRIBUTION. Korea, Japan, Assam.

### 2. **Promalactis suzukiella**(Matsumura) n. comb. 구슬무늬원뿔나방

*Borkhausenia suzukiella* Mats., 1931, 6000 Ill. Ins. Japan p1089 no. 2234

This species is superficially resemble to *semantris* Meyrick which has been known from India, Ceylon, China and Taiwan. For the reason, it has been sinked as a synonym of the later to date. However, writer confirmed that they can be easily separable each other from the result of his comparison of their genitalia. They are especially different in the shape of uncus, gnathos and valva of male genitalia

♂, ♀. 9~11mm. Head shinning white. Thorax brownish-orange. Second segment of labial palpi och-

reous, interior paler; terminal segment dark brown with whitish tip. Antenna white shinning scape, ringed black on each segment. Forewing elogate-lanceolate; ground colour brownish-orange; marking white; basal streak oblique, not reached to dorsum; secondary streak oblique, wide, edged black scales anteriorly, from 1/4 of costa reaching before half of dorsum; a somewhat ovate-shape blotch from costa reaching half across wing, followed by black scaled streak. Cilia orange. Hindwing linear-lanceolate, grey. Cilia long grey.

MALE GENITALIA. Plate Ⅰ, Figs. 6~8. Plate Ⅱ, Figs. 1&2, Uncus slender, bent. Gnathos moderately developed, widish tongue-shape. Tegumen well developed. Valva somewhat broadened with many strong hairs at end part. Distal process of sacculus free. Saccus slender, nearly half of genitalia. Aedeagus, slender, slightly shorter than genitalia.

FEMALE GENITALIA. Plate Ⅰ, Figs. 4~5. Plate Ⅱ. Fig 3, Ductus bursa slender, as long as the length of corpus bursae which is oval in shape. Inception of ductus seminalis from the point of connection with corpus bursae. signum large, armed with teeth.

MATERIAL EXAMINED. Isl. sohcoksan, South-West of Korean peninsula; 1♂, 23. Ⅳ. 1974. 1♂, 30 Ⅳ. 1974. (K.R. Choi) Slide no. IAS-894&672 Suweon; 1♂, 10. Ⅸ. 1974, 2♂, 18. Ⅷ. 1975, 1♂, 26. Ⅷ. 1975, 2♀, 29. Ⅵ. 1976. (K.T. Park) Slide no. IAS-1001 Ulsan; 1♀, 21. Ⅴ. 1976 (K.T. Park)

Honsyu, Japan; 1♂, 24. Ⅶ. 1966 (T. saito) Slide no. IAS-883

DISTRIBUTION. Korea, Japan

BIOLOGICAL NOTES. Some pupa were collected beneath the bark of peach tree; *Prunus persica*, especially among the part damaged by *Conopia hector* Butler Moths appears from mid of May to mid of September in Korea.

### 3. **Promalactis adaiensis** Park 솔피원뿔나방

*Promalactis odaiensis* Park, 1989. Korean Journ. Plant Prot. 19(3):145-147

This species was described from Korea by the writer(1980). It is superficially somewhat resemble to *jezonica* Mats., but slightly larger than the later and the pattern of marking on forewing is separable. Main characters which can be separated externally from the later are; "Head and face bronzy-fuscous mixed withsilvery white. Forewing more elongate and lanceolate. Secondary streak on forewing from the near base of cell and curved like sickle-shape. A white triangular oblique blotch edged posteriorly more black scales. Apical blotch divided into two rooms edged anteriorly more black scales. Hindwing rater dark grey."

The character of male genitalia is also quite different each other as shown in Plate Ⅲ, Figs. 4~6.

MATERIAL EXAMINED. Mt. Cheongyae, near Suweon; 1♂, 19 Ⅷ 1976(K.T. Park) —Holotype. 1♂, Ⅳ. 1973(J.C. Paik) Slide no. IAS-853. 2♂. Same locality and date as holotype(K.T. Park)

Mt. Odae., Gangweon Province; 1♀, 12 Ⅸ 1976 (J.S. So). Slide no. IAS-855 Mt. Deogyu, near Muju; 1♂, 13 Ⅷ 1975(K.T. Park)

DISTRIBUTION. Korea

BIOLOGICAL NOTES. A pupae of this species was collected from the beneath of bark of pine tree. The writer consider larva species lives in the creacks or beneath the bark where they feed.

### 4. **Promalactis enopisema**(Butler) 개꼬이 원뿔나방

*Oecophora enopisema* Butler, 1879, Iil. Het. Brit. Mus. 3:82

*Promalactis enopisema;* Inoue, 1954, Check List Lep. Japan 1:63

—Issiki, 1957 in Esaki, Icon. Het. Japan Col. Nat., 1:52

—Gaede, 1938~1939 in Bryk, Lep. Cat. Pars 88: 25

♂,♀. 12~14mm. Head shinning white. Thorax ochreous. Second segment of labial palpi ochreous, terminal segment dark ochreous, Antenna four fifth of forewing white ringed black. Forewing ochreous golden; three oblique silver white streak; basal streak white with black dots on both sides;

median streak from below at one forth costa, more black-edged posteriorly; outer oblique streak accross from cost to the middle and middle to dorsum; under surface sericeous greyish brown; cilia orange. Hindiwng dark grey.

MALE GENITALIA. Plate Ⅲ, Figs. 1&2. Uncus short, somewhat broadened terminally, weakly concave in middle apical edge, with a rising dominant lateral arms. Valva ovally elongated, sacculus moderaterly sclerotized, smoothly convex in middle of porterior edge, with long pointed terminal portion extending beyond end of valvae. Aedeagus curved S-shape, with a long, slender cornutus.

FEMALE GENITALIA. Plate Ⅲ, Fig. 3. Lamella postvaginalis large, semi-ovate. Ostium round-shape. Ductus bursae slender as long as the total length of corpus bursae. Corpus bursae consist of two parts; posterior part smaller with a porcess and anterior part large, shrunk with large appendix bursae. Signum small, sclerotized, dentate.

MATERIAL EXAMINED. Suweon; 1♂, 19 Ⅵ 1974(P.E.S, Whalley), Slideno. IAS-974. 2♂ 20 Ⅵ 1977(K.T. Park) Slide no. IAS-1051

Nara, Honsyu, JAPAN; 1♂, 8. Ⅵ. 1970(T. Saito), Slide no. IAS-1009

DISTRIBUTION. Korea, Japan, China

NOTES. Several allied species to this species were examined by writer, but they are necessary for further study with more collection.

### 5. **Promalactis autoclina** Meyrick 꼬마원뿔나방

*Promalactis autoclina* Meyrick, 1935, Exotic Microlep., 4(19):59.

—Bryk, 1938~1939 in Gaede, Lep. Cat. Pars 88: 24.

—Inoue, 1954, Check List Lep. Japan, 1:63.

—Clarke, 1963, Cat. Type Spesimens Macrol. B. M.(Nat. Hist) 4:394.

This species was originally described with a female specimen which was collected in Tokyo, Japan. Kuroko(1959) once sinked this as junior synonym of *sakaiella* Mats., however it is confirmed that they are different species by the comparison of their genitalia. (Plate Ⅲ, Figs. 9~10)

♂,♀. 8~9mm. Head snow-white; thorax grey-brown. Second segment of labial palpi ochreous, terminal joint white with apical two fifth blackish. Antennae four fifth of forewing, white ringed dark fuscous on each segment.

Forewing orange; an oblique white streak edged black beneath above base of dorsum; basal area beyond this suffused dark brown, limitted by an oblique white line edged orange area; at two thirda slender blackish-grey fascia speckled white, dilated dorsally, followed on costal half by white suffusion; an apical spot suffused dark-grey. Cilia orange-yellow, beneath tornus mixed with grey.

Hingwing grey speckled darker; cilia light grey.

FEMALE GENITALIA. Plate Ⅱ, Fig. 6. Ductus brusae long, slender; longer than two times of the length of corpus bursae. Corpus bursae moderate, oval in shape, with specially characterized signa.

MATERIAL EXAMINED. Suweon, 3♀, 24 Ⅷ 1974 (K.T. Park), 2♀, 23 Ⅷ 1975(K.T. Park) Slide no. IAS-671

DISTRIBUTION. Korea, Iapan.

## 摘 要

원뿔나방科(Oecophoridae)의 Promalactis屬에 속하는 種들은 주로 인도지나 반도를 中心으로 하는 東洋區에 分布하는 것으로 現在까지 外國에서도 이 屬에 對한 分類學的 정리가 이루어진 바가 없다. 금번 필자는 우리나라産에 對한 정리를 위하여 日本의 北海道大學에 보관中인 일부 모식표본(Type Specimen)들의 生殖器 스라이드를 송부받아 우리나라産과 비교검토할 기회를 얻었었다. 그 결과 필자에 의해 이미 新種으로 발표된 1種에 이어 4種을 추가로 분류동정하여 우리나라 미기록種으로 발표한다.

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## Explanation of Figures

**Plate** Ⅰ. (Slides of type specimens preserved in Hokkaido University)

| | | | |
|---|---|---|---|
| ① | ② | ③ | ④ |
| ⑥ | ⑦ | ⑧ | ⑤ |
| ⑨ | ⑩ | ⑪ | ⑫ |

1. *Promalactis jezonica*, male genitalia with Aedeagus; Lectolype, Sapporo, Hokkaido, Ⅷ 1907 (S. Matsumura), Slide no. Ocp. 3
2. Ditto, Tegumen with Uncus and Gnathos
3. Ditto, right Valva

4&5. *Promalactis suzukiella*. female genitalia; Lectotgpe. Kyoto. Honsyu, ?, (Suzuki), Slide no. Ocp. 7.

6. *Promalactis suzukiella*, male genitalia with Aedeagus; Tokyo. Honsyu, 7 Ⅶ 1915 (E. Gallots), Slide no. Ocp. 8
7. Ditto, Tegumen with Uncus and Gnathos
8. Ditto, right Valva
9. *Promalactis sakaiella*, male genitalia with Aedeagus; Allolectotype, zyozankei, Hokkaido, 8. Ⅷ. ? (A. Matsumura), Slide no. Ocp. 4
10. Ditto, Tegumen with Uncus and Gnathos

11&12. Ditto, female genitalia; Paralectotype, Formosa, Ⅴ. 1930 (Sakai), Slide no, Ocp. 6

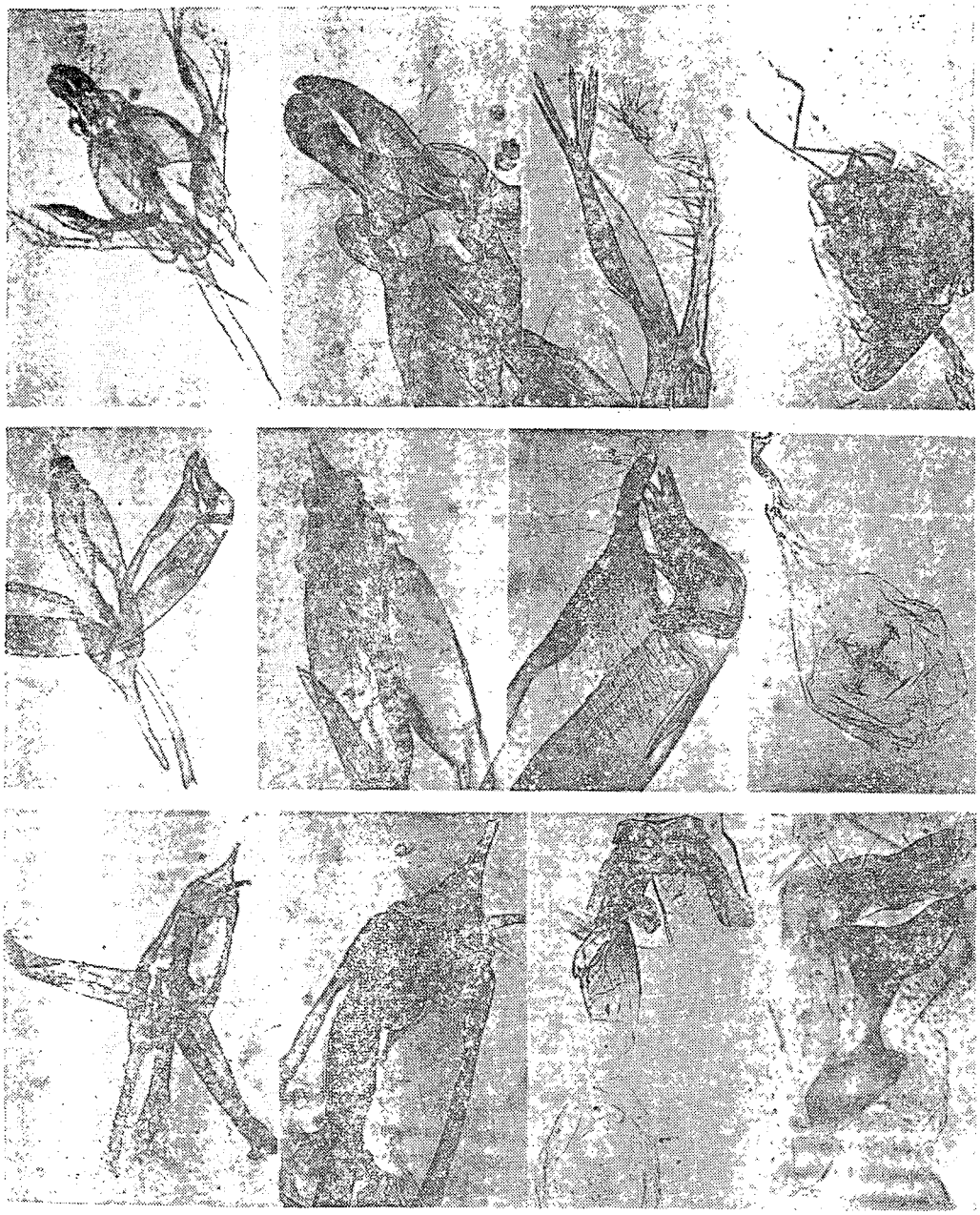


**Plate** Ⅱ. 1. *Promalactis suzukiella*, caudal view of male gentialia,
2. Ditto, Aedeagus
3. Ditto, ventral view of female genitalia,
4. *Promalactis jezooica*, caudal view of male genitalia
5. Ditto, Aedeagus
6. *Promalactis autoclina*, ventral view of female genitalia


**Plate Ⅲ.** 1. *Promalactis enopisema*, caudal view of male genitalia
2. Ditto, Aedeagus
3. Ditto, ventral view of female genitalia
4. *Promalactis odaiensis*, lateral view of male genitalia
5. Ditto, Aedeagus
6. Ditto, ventral view of female genitalia