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## The Japanese Species of the Genus *Tebenna* BILLBERG (Lepidoptera, Glyphipterygidae)

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**Synopsis** Accounts are given of three Japanese species of *Tebenna* BILLBERG. One is *T. issikii* (MATSUMURA) which was formerly misidentified as *T. bjerkandrella* (THUNBERG), another is *T. submicalis* DANILEVSKY which is recorded for the first time from Japan, and the other, *T. kawabei*, is described as new.

It has been known that '*Choreutis bjerkandrella* (THUNBERG)' is a common pest of the edible burdock, *Arctium lappa* LINNAEUS, in Japan. Having compared Japanese specimens of so-called *bjerkandrella* with European ones, I have come to the conclusion that the two are specifically distinct. On the other hand, after studying the type-series of *Choreutis issikii* described by MATSUMURA in 1931, I am convinced that it is conspecific with the Japanese species formerly treated as *C. bjerkandrella* in Japan, and *issikii* MATSUMURA is here transferred from *Choreutis* to *Tebenna* BILLBERG. Besides *T. issikii*, two *Tebenna*-species newly recorded from Japan are dealt with in this paper. These are *T. submicalis* DANILEVSKY originally described from USSR and *T. kawabei* new species.

### *Tebenna issikii* (MATSUMURA), n. comb.

(Figs. 1, 4 & 5)

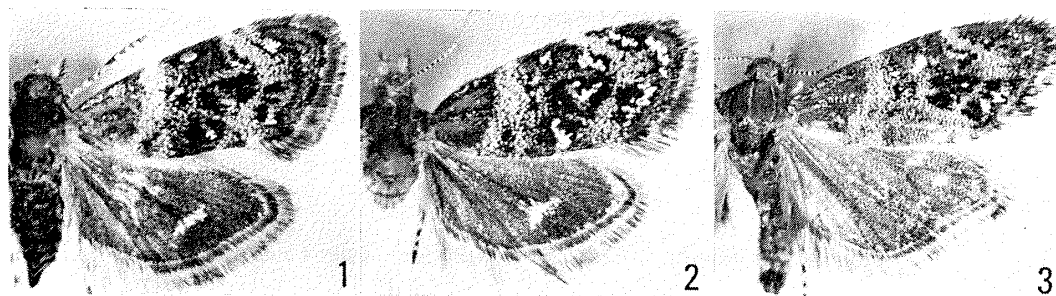
*Choreutis issikii* MATSUMURA, 1931, 6000 Ill. Ins. Japan., 1087, no. 2184; — INOUE, 1954, Check List Lep. Japan, 1: 49, no. 243.

*Porpe bjerkandrella*: TAKAHASHI (not THUNBERG, 1782), 1928, Sosai-Gaityu-Kakuron, 99, pl. 55 & 56.

*Choreutis bjerkandrella*: ISSIKI 1932 (not THUNBERG, 1782), Icon. Ins. Japon., ed. 1: 1483, f. 2936. — ISSIKI, 1950, Icon. Ins. Japon., ed. 2: 458, f. 1237. — INOUE, 1954, Check List Lep. Japan, 1: 49, no. 240. — TAKAHASHI, 1955, Kaityo-Nogyo-Gaityu-Hen, 189. — ISSIKI, 1957, Icon. Het. Japon. Col. Nat., 1: 32, pl. 4, f. 125. — KODAMA, 1961, Publ. Ent. Lab. Univ. Osaka Pref., (6): 38. — KODAMA, 1969, Early Stages Japan. Moths Col., 2: 121, pl. 58, f. 229.

The adult has been illustrated by many workers (e.g., TAKAHASHI, 1928; MATSUMURA, 1931; ISSIKI, 1932, 1950 and 1957), but the genitalia have not previously been described nor figured.

Male genitalia: as in Fig. 4. Tegumen triangular. Valva ovate; cucullus ending in an elongate triangular lobe; distal projection (between cucullus and sacculus) large, finger-shaped; ventral margin strongly convex. Aedeagus about twice as



Figs. 1-3. Right wings. — 1. *Tebenna issikii* (MATSUMURA), Sakai, Osaka Prefecture. — 2. *T. submicalis* DANILEVSKY, Sapporo, Hokkaido. — 3. *T. kawabei* n. sp., holotype.

long as valva, curved, with a series of denticles at middle; ventral part with denticles in apical 1/6.

Female genitalia: as in Fig. 5. Ostium bursae small, round. Ductus bursae sclerotized in posterior 1/2. Corpus bursae membranous. Signum forming a long, narrow band, armed with many denticles.

*Material examined.* Lectotype ♀, Kii (Wakayama Prefecture), Honshu, Japan, 15. VII. 1913 (S. ISSIKI). Paralectotype: ♀, Tokyo, 7. VIII. 1915 (S. ISSIKI). Type-series are deposited in the Entomological Institute, Hokkaido University. Other materials: Izu Islands—1 ♂, 1 ♀, Is. Shikine-jima, 16-17. VI. 1966 (T. MAENAMI). 1 ♂, Kashidate, Is. Hachijo, 3-4. VIII. 1967 (T. MAENAMI). 1 ♂, same loc., 30-31. VI. 1968 (T. MAENAMI). 1 ♂, Kawada, Is. Mikura-jima, 4-5. VI. 1964 (T. MAENAMI). Honshu—1 ♀, Setagaya, Tokyo, 1. VI. 1963 (A. KAWABE). 1 ♀, Tama Hill, Tokyo, 31. V. 1958 (A. KAWABE). 1 ♂, Ootakimura, Nagano Pref., 25. VII. 1957 (S. MORIUTI). 1 ♀, Nishincho, Aichi Pref., 24. IX. 1969 (K. YAMAGISHI). 1 ♂, Kozagawa, Wakayama Pref., 14-20. V. 1964 (T. KUMATA). 1 ♀, Iwawaki-san, Kawati, 28. V. 1954 (T. YASUDA). 1 ♀, Sakai, Osaka Pref., 12. VI. 1954 (T. YASUDA). 2 ♂, same loc., 13. VI. 1954 (T. YASUDA). 6 ♂, 3 ♀, Sakai, Osaka Pref., emerged 21. VI. 1965 (Y. ARITA); 4 ♂, same loc., emerged 23. IV. 1965 (Y. ARITA); 2 ♂, 4 ♀, same loc., emerged 28. VI. 1965 (Y. ARITA); 2 ♂, 2 ♀, same loc., emerged 11. VII. 1965 (Y. ARITA); 3 ♂, 1 ♀, same loc., emerged 22. VII. 1965 (Y. ARITA); 5 ♂, 2 ♀, same loc., emerged 12. VIII. 1965 (Y. ARITA); 2 ♂, 1 ♀, same loc., emerged 17. VIII. 1965 (Y. ARITA); 6 ♂, 4 ♀, same loc., emerged 26. IX. 1965 (Y. ARITA), reared from larvae on *Arctium lappa* LINNAEUS. 1 ♂, 3 ♀, Ikuno, Hyogo Pref., 8. VI. 1965 (Y. ARITA). 1 ♂, Haga, Hyogo Pref., 30-31. VII. 1965 (S. MORIUTI). Kyushu—1 ♂, 3 ♀, Magaribuchi, Sawara, Fukuoka Pref., 5. VI. 1963 (K. YAMAGISHI). 3 ♂, Mt. Hiko, Fukuoka Pref., 27. VI. 1958 (A. KAWABE). 1 ♀, Mt. Kirishima, Kagoshima Pref., 30. VI. 1958 (A. KAWABE).

*Distribution.* Japan (Honshu, Shikoku and Kyushu).

*Host plants.* *Arctium lappa* LINNAEUS (Compositae). Besides, TAKAHASHI (1950 and 1955) recorded the following composite plants: *Chrysanthemum coronarium* LINNAEUS, *Chnara scolymus* LINNAEUS, *Achillea sibirica* LEDEBOUR and *Ricinus communis* LINNAEUS.

*Remarks.* *Tebenna issikii* is very similar to *T. bjerkandrella* in the superficial appearance, but the genitalia are quite different as follows: in the male valva with finger-shaped distal projection in *issikii* and without such a projection in *bjerkandrella*, and in the female the signum of *issikii* distinctly slenderer than that of *bjerkandrella*. The difference of the host plant is very useful for the discrimination of the species; *bjerkandrella* feeds on *Carlina acaulis* LINNAEUS (SUPLER, 1910, and TOLL, 1956), but *issikii* primarily on *Arctium lappa* LINNAEUS. Superficially this species is also very similar in coloration to *submicalis* DANILEVSKY, and to *bradleyi* CLARK occurring in Rapa Is., New Zealand, Australia and India, but differs in the following points: in the male genitalia the valva of *issikii* much shorter than that of *submicalis* and the aedeagus with denticles in *issikii* and without denticles in *bradleyi*, and in the female genitalia the signum of *issikii* shorter than in *submicalis* and *bradleyi*.

*Ecological notes.* Probably six or seven generations a year in central Honshu. The adults and larvae appear from April to October. The larva lives on the upper or under surface of the leaf of host plant, forming a web, and eating the green tissue among the veins. Pupation takes place in a white fusiform cocoon within a dense larval web. Hibernation in the pupal stage.

*Tebenna submicalis* DANILEVSKY

(Fig. 2)

*Tebenna submicalis* DANILEVSKY, 1969, Rev. Ent. USSR, 48: 923, f. 5 & 6.

The male and female genitalia have been described and illustrated by DANILEVSKY (1969, *l.c.*).

*Material examined.* Hokkaido—1 ♂, 1 ♀, Sapporo, emerged 22. XI. 1964 (T. KUMATA), reared from larvae on *Anaphalis margaritacea* BRENTHAM et HOOKER. 1 ♂, Soranuma, Sapporo, 9. VIII. 1963 (T. KUMATA); 2 ♂, Apoi, 22. VI. 1959 (T. KUMATA).

*Distribution.* Japan (Hokkaido) and USSR (Kuril Is.; Kunashiri I. and Sakhalin).

*Host plant.* *Anaphalis margaritacea* BRENTHAM et HOOKER (Compositae) in Japan.

*Remarks.* This species is most closely allied to *T. issikii*; the discriminating characters have been noted under the preceding species, *T. issikii*.

*Tebenna kawabei* n. sp.

(Figs. 3, 6 & 7)

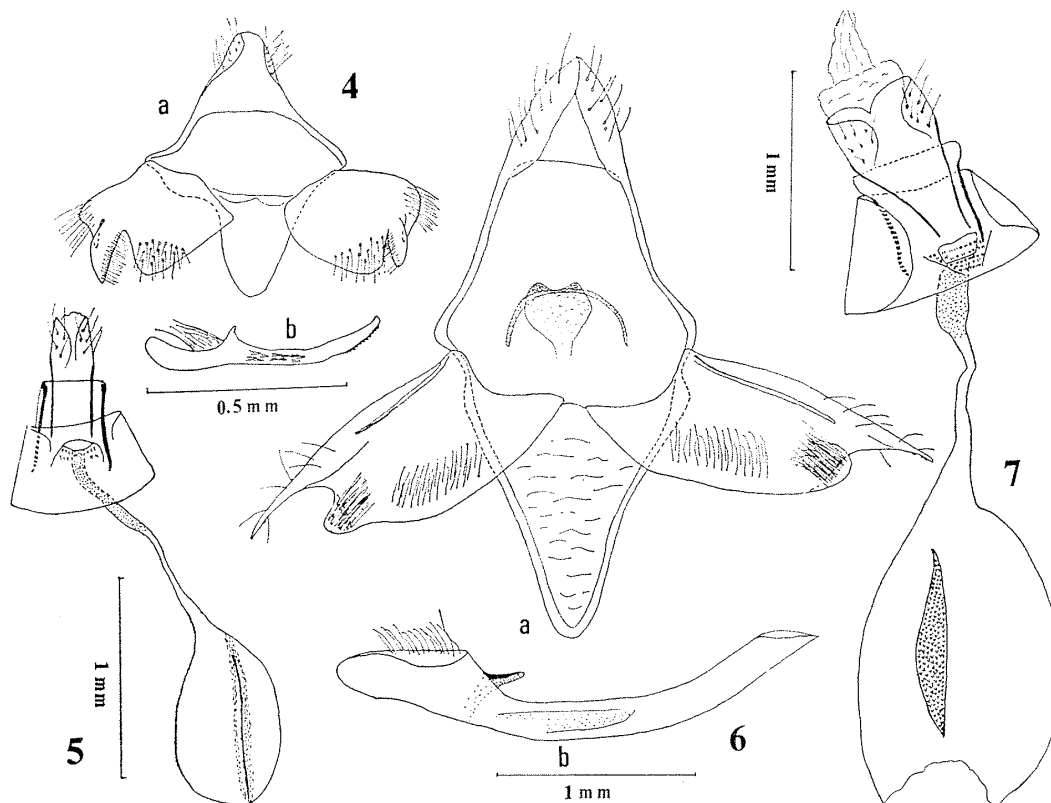
♂♀. Alar expanse 12–14 mm. Head grey, tinged with white. Antenna ciliated in male; dark fuscous, ringed with white. Labial palpus white; basal segment fuscous, mixed with white; third segment closely speckled with grey. Thorax ochreous-orange with a median white line. Abdomen greyish fuscous.

Fore wing greyish fuscous, sprinkled with white scales, except in basal 1/5; two longitudinal, broad ochreous-orange dashes in basal 1/5; two leaden metallic longitudinal fasciae from base to 1/5, one beneath costa, the other in middle; a large black spot containing a few metallic dots in disc about 2/3; along lower half on termen with a large black spot, usually with two leaden metallic dots; cilia greyish fuscous, with a white median line. Hind wing greyish fuscous; cilia fuscous, with a white median line.

Male genitalia: as in Fig. 6. Tegumen elongate-triangular; valva nearly rectangular; sacculus produced into a rounded apex, with a patch of long hair at distal end; cucullus produced, the apex being narrowly pointed. Aedeagus twice as long as valva, curved, pointed.

Female genitalia: as in Fig. 7. Ostium bursae moderate; ductus bursae sclerotized in posterior 1/3. Corpus bursae membranous. Signum forming a narrowly lanceolate plate, set with numerous denticles.

Holotype: ♂, Nidoage, Gumma Prefecture, Honshu, 28. VIII. 1958 (A. KAWABE), deposited in Zool. Lab., Meijo Univ. Paratypes: 4 ♂, 3 ♀, same data as holotype.



Figs. 4-7. Male (4 & 6) and female (5 & 7) genitalia of *Tebenna* spp.; a, ventral aspect; b, aedeagus. — 4. *T. issikii* (MATSUMURA), Sakai, Osaka Prefecture. — 5. *T. issikii* (MATSUMURA), lectotype. — 6-7. *T. kawabei* n. sp., paratype.

type, in Zool. Lab., Meijo Univ.

*Distribution.* Japan (Honshu).

*Host plant.* Unknown.

*Remarks.* This species is similar to the preceding two species in coloration, but may be easily separable from them by the noticeably larger size (alar expanse 9.5–10 mm in *issikii* and *submicalis*), by the fore wing without the black postmedian fascia, by the hind wing without the white subterminal line; in the valva of male genitalia the finger-shaped projection presented in *issikii* and *submicalis*, but absent in *kawabei*; in the female genitalia signum of *kawabei* shorter than in *issikii* and *submicalis*.

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