

**Description of a new genus and a new species of Gelechiidae
from East Asia (Lepidoptera: Gelechioidea)***

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東アジアからのキバガ科の1新属1新種の記載

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日本産 *Stenolechia* 属の中でイッシキチビキバガ (*S. issikiella*) の分類学的位置が不明であったが、台湾から発見された新種や *Telphusa argobathra* MEYRICK とともに新属 *Parastenolechia* を形成することが判明した。また、クロテンキバガ (*Telphusa cornisignella* MORIUTI) をイッシキチビキバガの同物異名とした。さらに、中国から記載された *Telphusa argobathra* MEYRICK は、イッシキチビキバガの優級同物異名である可能性が高いが、SATTLER 博士 (大英博物館) の助言に従い、別種として扱った。

Introduction

In preparing a revision of the Japanese *Stenolechia* (KANAZAWA, 1984), it became apparent that the widely distributed Japanese species, *S. issikiella* OKADA, 1961 was not assigned to any available genus and the species seemed to be synonymous with the Chinese *Telphusa argobathra* MEYRICK, 1935 and the Japanese species, *Telphusa cornisignella* MORIUTI, 1977. The observation on the holotype of *T. cornisignella* made it clear that the species is a junior subjective synonym of *S. issikiella*. Recently I found a new species from Taiwan, which is apparently congeneric with *S. issikiella*. The detailed study of male and female genitalia of these species suggested that the new species and the above-mentioned two nominal species constitute a monophyletic group which is closely related to the genus *Stenolechia* MEYRICK and shares with it a peculiar feature of the fusion of the saccus and the aedeagus in the male genitalia.

In this paper I described this monophyletic group as *Parastenolechia*, gen. nov., and described and illustrated *Parastenolechia asymmetrica*, sp. nov. and redescribed *P. issikiella*. Relation between *P. issikiella* and *P. argobathra* is also discussed. All the types of the new species are deposited in the collection of the Osaka Museum of Natural History.

Before going further I wish to express my hearty thanks to Prof. Y. HIRASHIMA and Assoc. Prof. K. MORIMOTO of the Entomological Laboratory, Kyushu University, and Mr. Y. MIYATAKE of the museum for their constant guidances and encouragements. I am also much

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indebted to Prof. T. SAIGUSA of the Biological Laboratory, Kyushu University for his kindness in critical reading through the manuscript. My cordial thanks are due to Dr. K. SATTLER of the British Museum (Natural History), London, Dr. S. MORIUTI of University of Osaka Prefecture, and Prof. Y. LIU of Academia Sinica, Beijing, for their helpful suggestions and advices. And I deeply thank to Dr. S. HASHIMOTO, Mr. K. YASUDA, Mr. T. TANABE and Mr. T. SATO of University of Osaka Prefecture, for kindly offering specimens.

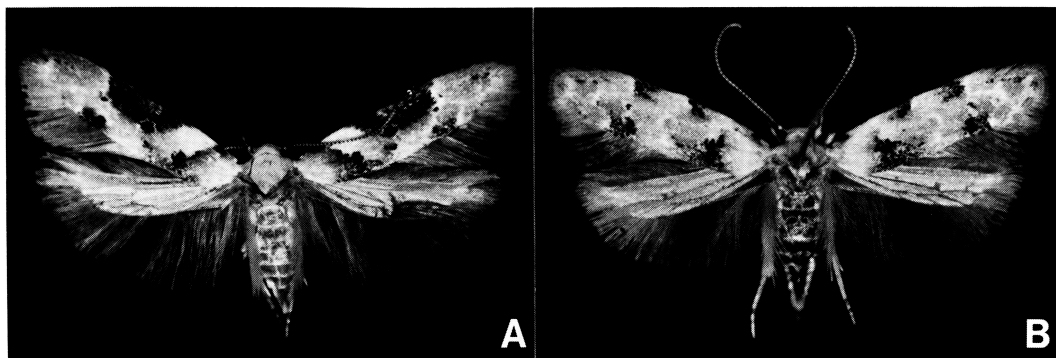


Fig. 1. A, *Parastenolechia asymmetrica* sp. nov., Paratype, ♀, Tzuen, Hualien Hsien, Taiwan, 4-6. vi. 1982, T. Tanabe leg. B, *Parastenolechia issikiella* (OKADA), ♀.

***Parastenolechia* gen. nov.**

Type-species: Parastenolechia asymmetrica sp. nov.

Diagnosis: Species of *Parastenolechia* can easily be recognized by the following main synapomorphies: 1) in forewing veins M_2 and M_3 approximated, 2) in male genitalia posterior end of tegumen protruded and region of fenestrula concave at centre, 3) pedunculus of tegumen very slender, 4) vinculum absent excepting saccus, 5) anterior end of saccus fused with subzonal sheath of aedeagus, 6) basal part of valva with a clavate process bearing several stiff setae apically, 7) costal process of valva greatly developed, extremely slender and elongate, with a bulbous base, first extending anteriorly, then recurved posteriorly, 8) in female genitalia 7th abdominal segment with a pair of deep posterolateral invaginations, 9) ductus bursae bearing 1 or 2 sclerites near ostium, 10) ductus bursae bearing a sclerotized thickening at junction of ductus seminalis, 11) ductus bursae thick and furrowed longitudinally, 12) signum being a subtriangular basal plate with a pair of inner processes, and 13) ductus seminalis conspicuously slender, bulla seminalis small and indistinct.

Of these characters, strict autapomorphies of this genus are 1), 3), 7), 8), 9), 10), 11), and 12).

External characters: Head whitish, smoothly scaled, with a series of slender dark scales along posterior margin of eye. Ocellus absent. Proboscis well developed, squamose basally. Antenna almost filiform but slightly serrate distally, about $3/5$ length of forewing, without pecten, in male rather shorter and thicker than in female; scape elongate, with a dark band before apex on anterior surface; basal 2 flagellar segments almost black, base of each flagellar segment fuscous on anterodorsal surface. Labial palpus white; 2nd segment suffused with dark brown on basal $1/2$ of outer surface as well as on outer surface of basal segment, with an incomplete yellow ring near apex; 3rd segment with 2 fulvous or black rings near base and before apex.

Thorax whitish; mesoscutum with yellowish scales on posterior margin; mesoscutellum covered with raised scales; tegula whitish as well, with yellowish or fulvous base. Abdomen greyish above, ochreous below. Foreleg whitish ochreous; coxa, femur and tibia each with a large fuscous suffusion and some yellow scales on anterior surface; 1st and 2nd tarsomeres with a median wide fuscous band and some apical white scales on anterior surface; 3rd and 4th ones entirely fuscous; apical one whitish ochreous. Midleg whitish ochreous; femur with 2 groups of fuscous scales, each near base and before apex on anterior surface; tibia with a wide fuscous band at basal $1/3$ and a narrow one at distal $1/4$ on anterior surface, bearing 2 tufts of slightly raised scales, each at basal $1/2$ and apex; tarsus almost fuscous or black on bases of 1st to 3rd tarsomeres, other portions whitish ochreous. Hindleg almost whitish ochreous; tibia densely clothed with long and slender specialized hairs above, 1st to 3rd tarsomeres with fuscous spots on posterior surface.

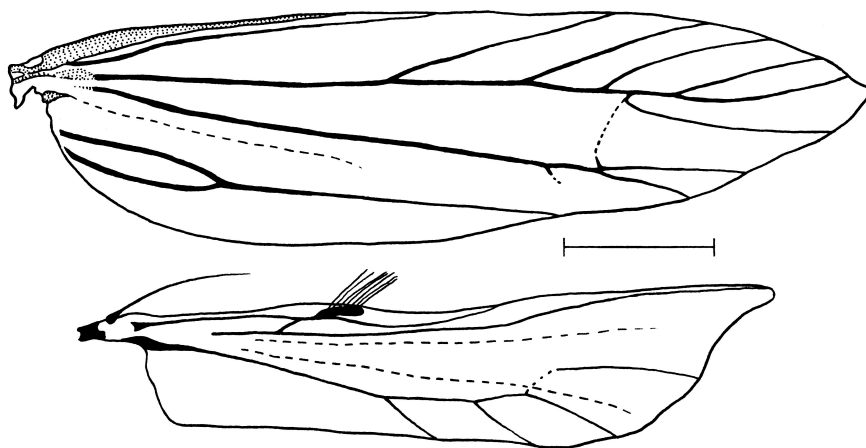


Fig. 2. Wing venation of *Parastenolechia issikiella* (OKADA). (Scale: 1mm)

Forewing with veins R_{4+5} and M_1 separated at bases; Cula absent; Culb almost vestigial. Hindwing with short section of R_1 which connects Rs with Sc developed or sometimes indistinct; $Sc+R_1$ ending at 4/7 of costa; Rs to costa near apex; M_1 absent.

Forewing whitish in ground color, with black markings which are mostly overlaid with raised scales, tinged with fulvous; cilia whitish. Hindwing greyish, almost trapezoidal, apex acute, termen rather undulate; ciliation well developed.

*Male genitalia**: Eighth tergum considerably reduced. Eighth sternum well developed, but not covering uncus in normal situation. Sclerite in intersegmental membrane between 8th sternum and genitalia absent. No coremata. No inner pocket.

Genitalia rather slender, symmetrical or asymmetrical. Tegumen slender, slightly bending downwards, strongly projecting posteriorly and tapering to bluntly pointed posterodorsal apex, without tuft and membranous spot; pedunculus considerably slender, without lapel. Region of fenestrula concave at centre, with a pair of lateral sclerites which are articulated to tegumen and uncus. Uncus flattened, widened towards rough posterior margin which is densely haired and slightly concave at middle, with a broad dent on dorsal surface. Gnathos almost as long as uncus; lateral sclerite rather slender; ventral sclerite with a ventrally bending, acute, median projection and 2 rounded lateral projections. Minute cuticular process rather developed but restricted on a ventral narrow membranous zone posterior to gnathos. Vinculum absent excepting saccus. Saccus boat-formed, long, weakly tapering towards still rather wide anterior end which is characteristically united with ventroproximal portion of subzonal sheath of aedeagus. Valva very specialized, its basal part being a broad, oblique sclerite** which is articulated to pedunculus in anterodorsal corner and has a clavate process bearing several stiff setae at its apex; an extremely long, slender process of costa arising from dorsal portion of valva, having an anteriorly projecting bulbous base, and apex of the process extending beyond posterior end of tegumen; a short process of sacculus arising from ventral corner of valva, tightly connected with saccus, with a narrow wing on distal 1/2 of outer side, ending apically in a claw, and bearing several hairs on dorsoinner side at middle and more than 10 hairs on distal 1/2 of ventral surface. Aedeagus relatively long and rather thick, slightly shorter than tegumen; subzonal sheath moderately long; suprazonal sheath slightly tapering apically, weakly curved ventrally, with a subapical dorsal area membranous; cornutus indistinct, seems to be composed of numerous minute spinules.

*The terminology was mainly referred to SHIRÔZU (1960).

**This sclerite is interpreted to be a part of the valva, not of the vinculum judging from a fact that a massive muscle originating from the subapical inner side of the pedunculus inserts into it in *P. issikiella* (KANAZAWA, unpublished). Because BIRKET-SMITH (1974) stated that in no cases have any muscles been found, connecting tegumen and vinculum directly.

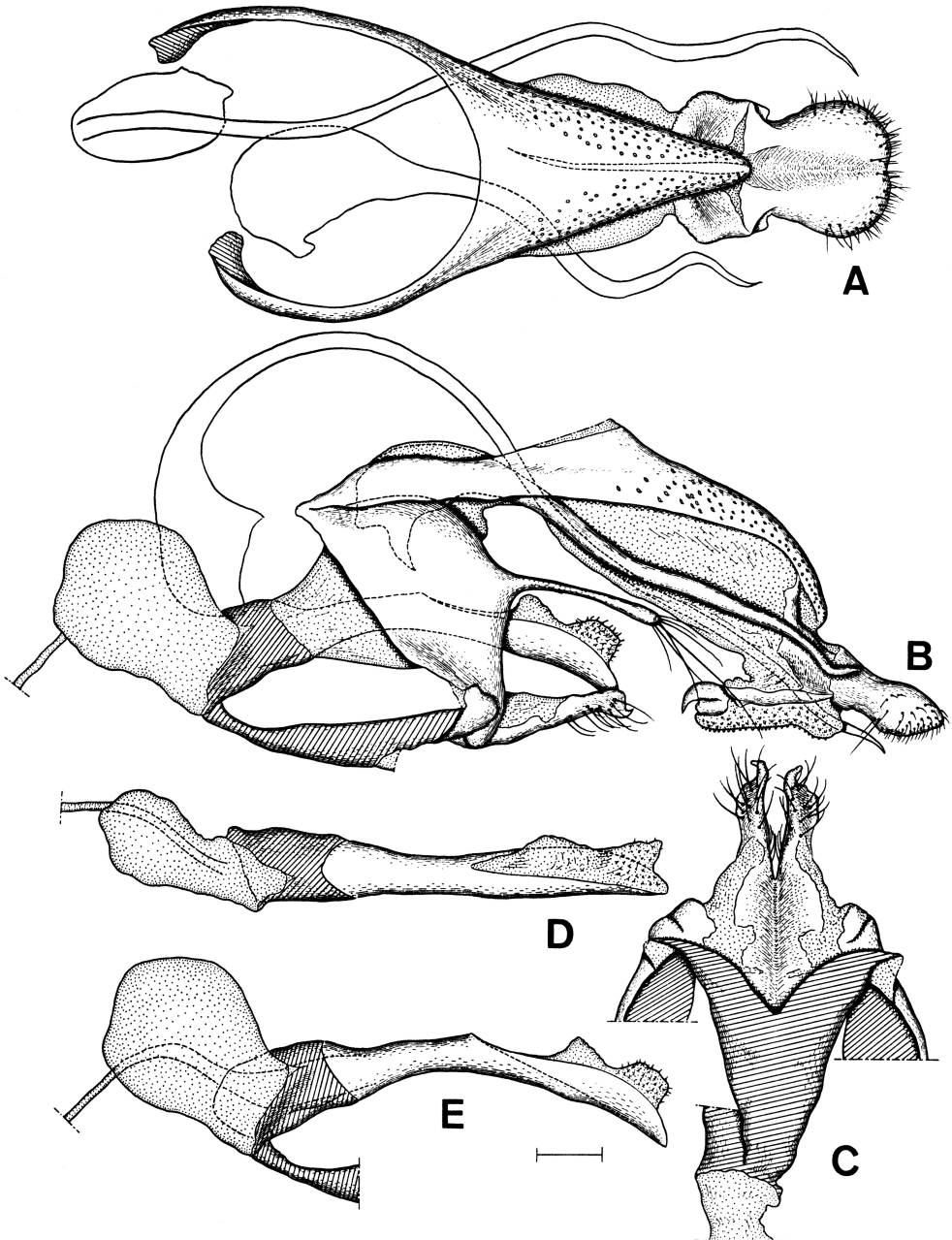


Fig. 3. Male genitalia of *Parastenolechia asymmetrica* sp. nov.

A, Dorsum in dorsal view. B, Genitalia in lateral view.

C, Saccus and sacculus in ventral view.

D, Phallus in dorsal view.

E, Ditto in lateral view. (Scale : 0.1mm)

ending in a sharply pointed tip; the left process directed posteriorly, distinctly trisinate horizontally, and ending as right one. Sacculus as long as saccus; left process a little longer than right one. Aedeagus slightly twisted to right; subzonal sheath thick, opening of ductus ejaculatorius leaning to left; suprazonal sheath more slender than subzonal one, with peri-vesical area 1/2 as long as suprazonal sheath and leaning to right.

Female genitalia: Ductus bursae very thick, bearing a ring-like sclerite near ostium and a long slender sclerotized thickening on right side anterior to junction of ductus seminalis. Corpus bursae with numerous minute sclerotized spinules on entire inner surface. Signum more slender than that of *issikiella*. Apophysis posterioris, about twice as long as apophysis anterioris.

Distribution: Taiwan.

Holotype: ♂ (OMNH TI-19), Alishan, Chiai Hsien, Taiwan, 11-12. viii. 1983 (I. Kanazawa).

Paratypes: [TAIWAN] 1♀, Tzuen, Hualien Hsien, 4-6. vi. 1982 (T. Tanabe); 1♂, Lushanwenchuan, Nantou Hsien, 15-16. viii. 1983 (I. Kanazawa); 1♀, Fenchifu, Chiai Hsien, 22-25. v. 1982 (T. Tanabe); 1♂, same locality and collector as holotype, 10-11. viii. 1983.

Remarks: This species resembles *P. issikiella*, but is easily distinguished from it by the following respects: in *asymmetrica* a central black costal marking of forewing very large and prominent, male genitalia except for uncus and gnathos asymmetrical, two sclerites of ductus bursae larger, and corpus bursae with numerous sclerotized spinules in female genitalia, while in *issikiella* costal markings medium-sized and not so prominent, male genitalia completely symmetrical, sclerites of ductus bursae relatively small and corpus bursae without sclerotized spinules in female genitalia.

At present time this species is known to be distributed only in Taiwan.

***Parastenolechia issikiella* (OKADA, 1961) comb. nov.**

(Figs. 1B, 2, 4E-H, 5)

Stenolechia issikiella OKADA, 1961, Trans. Shikoku ent. Soc. 7 (1-2): 46; MORIUTI, 1982, Moths of Japan 1:278; *ibid.* 2:213.

Telphusa cornsignella MORIUTI, 1977, Tinea 10: 120; MORIUTI 1982, Moths of Japan 1:277; *ibid.* 2: 212. **syn. nov.**

Head light yellowish white. Proboscis nearly 3/4 as long as labial palpus. Scape of antenna and labial palpus whitish ochreous in ground color.

Thorax ochreous yellowish white above; mesoscutum with fulvous scales on posterior margin; mesoscutellum covered with raised ochreous scales; tegula ochreous yellowish white as well, with fulvous base. Abdomen grey above, with whitish ochreous scales apically, almost ochreous below.

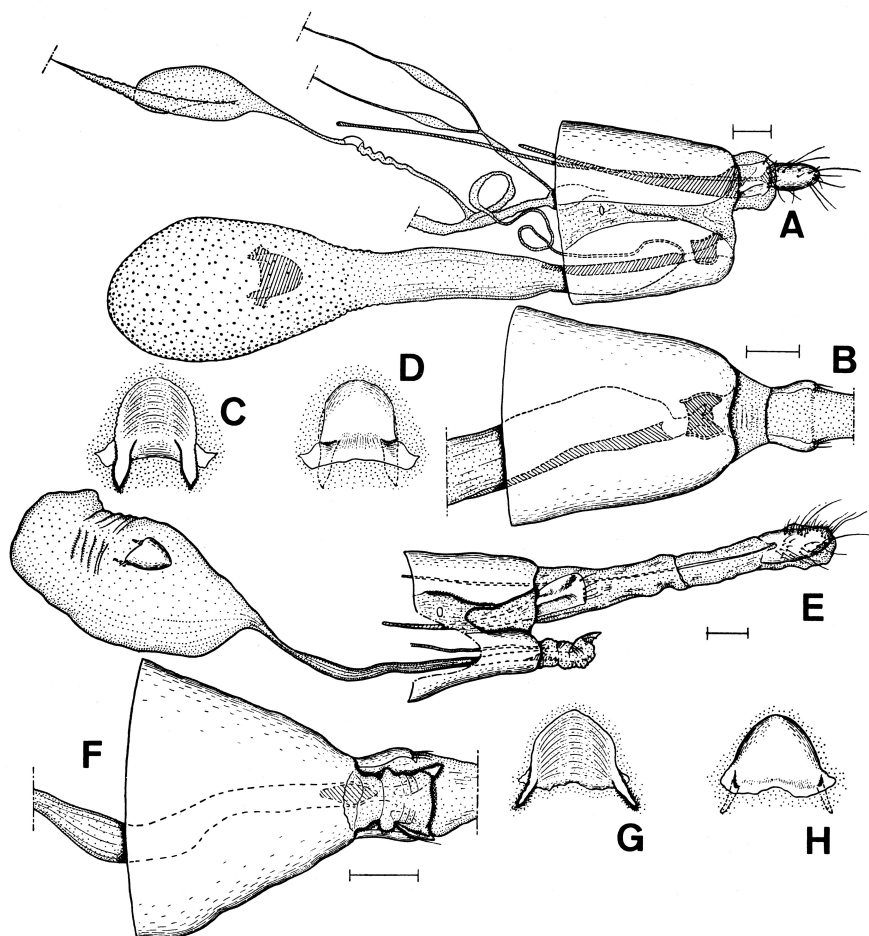


Fig. 4. Female genitalia of *Parastenolechia* species.

A, *P. asymmetrica* sp. nov., lateral view. B, Ditto, ostium in ventral view. C, Ditto, signum in inner view. D, Ditto, signum in outer view. E, *P. issikiella* (OKADA), lateral view. F, Ditto, ostium in ventral view. G, Ditto, signum in inner view. H, Ditto, signum in outer view. (Scale : 0.2mm)

Forewing with veins M_2 and M_3 appearing to connate from lower angle of discal cell. Hindwing with short section of vein R_1 which connects R_s with Sc distinctly developed; $Sc+R_1$ slightly converged to R_s at basal $1/2$ of costa.

Forewing 5.3-6.2 mm long in spring form (May to June), 3.6-4.8 mm in summer form (August to September), whitish ochreous, sometimes cream-coloured in summer form, with the following black markings which are mostly overlaid with raised scales and accompanied with white spots of various sizes: a small black spot at base of costa, 2 medium-sized spots,

each at 1/3 and 2/3 on costa; 3 prominent groups of raised scales on fold, each at 1/3 (black), 2/3 (white) and distal end (black); a black spot at 1/3 beneath fold expanding to dorsal margin as to form a large subtriangular dark fuscous area; a small black dot at about 2/3 on discal area and bordered by white scales; cilia white in proximal 1/4 and greyish in distal 1/2, with 2 rows of dark fuscous speckles. Hindwing grey.

Male genitalia: Eighth tergum about 0.2 times as long as 8th sternum.

Whole genitalia symmetrical. Tegumen slender, widest at basal 4/5, with lateral weak emarginations at 1/8 in dorsal view. Uncus almost trapezoidal in dorsal view. Saccus tapering anteriorly and narrowest at basal 2/3 in ventral view. Basal part of valva rather narrow, with clavate process short. Basal portion of costal process nearly as long as wide, almost membranous on inner side, fused with inner margin of valva by a narrow sclerotized bridge near pedunculus, extending anteriorly, and abruptly tapered to distal portion; distal tapered portion recurved dorsally near base, then extending posteriorly, weakly bending dorsally at middle, evenly curved downwards in distal 1/4, and ending in a pointed tip. Sacculus about 1/3 as long as tegmen; its process longer and thicker than that of *asymmetrica*, with a smoother dorsolateral edge. Aedeagus almost cylindrical; subzonal sheath slightly curved dorsally; suprazonal sheath almost keeping the same width, weakly curved ventrally, with peri-vesical area on distal 1/3.

Female genitalia: Ductus bursae rather thin, bearing a pair of longitudinally slender, oblate sclerites near ostium and a rhombic sclerotized thickening beneath junction of ductus seminalis. Corpus bursae without minute sclerotized spinules on inner surface as densely seen in *asymmetrica*. Anterolateral processes of signum thicker than those of *asymmetrica*. Apophysis posterioris about 2.6 times as long as apophysis anterioris.

Distribution: Japan (Honshu, Kyushu, Tsushima Is., Yakushima Is.).

Specimens examined: [HONSHU] 1♀, Daisenji, Mt. Daisen, Tottori Pref., 4. vi. 1980 (I. Kanazawa); 3♀, Amami, Ōsaka Pref., 11. v. 1980 (T. Sato); 2♀, Mirozu, Wakayama Pref., 24. v. 1980 (T. Sato). [KYUSHU] 1♀, Mt. Hikosan, Fukuoka Pref., 18. vi. 1962 (T. Kawamura); 1♂, same locality, 21. vi. 1979 (I. Kanazawa). [TSUHIMA] 4♂, Mt. Ōkumayama, Kamiagata-machi, 30. v. 1979 (I. Kanazawa); 1♂, Kamisaka-kōen, Izuhara-machi, 1. vi. 1979 (I. Kanazawa). [YAKUSHIMA] 1♂, Onoaida, 5. ix. 1979 (K. Yasuda); 3♀, same locality and collector, 8. ix. 1979; 1♂2♀, same locality and collector, 9. ix. 1979.

Remarks: This species was described on the basis of the only males. Though I failed to observe the holotype of *issikiella*, the above-mentioned many males undoubtedly belong to this species as their genitalia are quite identical with the fine drawings of the male genitalia in the original description. In the description of *S. issikiella*, OKADA (1961) interpreted the costal process of the valva as the juxtal arm, the valva (s. s.) as the vinculum, the sacculus as the valva and the saccus as the juxta. My interpretation of the parts of the male genitalia in

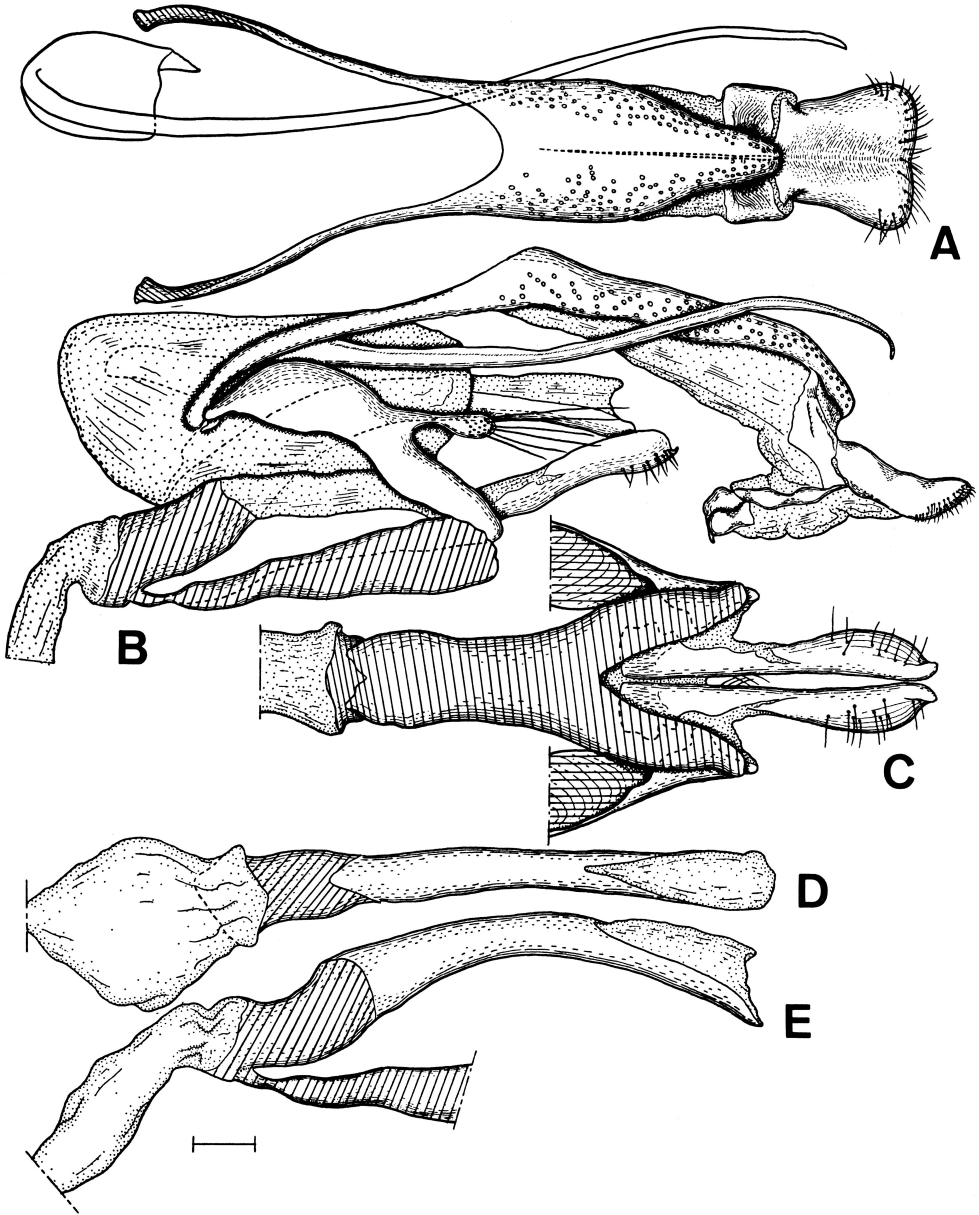


Fig. 5. Male genitalia of *Parastenolechia issikiella* (OKADA).
 A, Dorsum in dorsal view. B, Genitalia in lateral view.
 C, Saccus and sacculus in ventral view. D, Phallus in dorsal view.
 E, Ditto in lateral view. (Scale : 0.1mm)

issikiella is based on the detailed study of their musculature which will be published as a separate paper.

Telphusa cornisignella, which was here synonymized with *issikiella*, was described only on the holotype female collected at Yakushima Is. The observation on the holotype of *cornisignella*, which was accomplished by the courtesy of Dr. MORIUTI, made it clear that the features of the holotype agree with the above-mentioned females of *issikiella*.

In the description of *T. cornisignella*, MORIUTI (1977) correctly pointed out that the species resembles the Chinese *T. argobathra* MEYRICK in appearance and commented on the difference in the ostium of the female genitalia between the two species. As I, however, consider the difference a reversible feature by boiling in KOH solution, there is a possibility that *issikiella* is a junior subjective synonym of *argobathra*.

***Parastenolechia argobathra* (MEYRICK, 1935) comb. nov.**

Telphusa argobathra MEYRICK, 1935, in CARADJA & MEYRICK, Mater. Microlepid. Fauna Chin. Provinzen Kiangsu, Chekiang Hunan: 66; GAEDE, 1937, Lep. Catal. Gelechiidae 79: 120; CLARKE, 1969, Cat. Type Specimens Microlepid. Br. Mus. nat. Hist. descr. E. MEYRICK 7: 428; PARK, 1983, Ins. Koreana 3: 85; PARK, 1983, Ill. Flora & Fauna Korea 27: 490.

Remarks: I have never examined the specimens of *T. argobathra*. This species, which was described on the basis of the only female specimens from China, is very similar to *issikiella* judging from the photographs of the forewing markings and the signum of female genitalia in CLARKE (1969). There is no sure difference between the two species which shows them specifically distinct from each other.

At my request Dr. SATTLER of the British Museum (Natural History) kindly compared the holotype of *argobathra* with the male and female specimens, which was identified as *issikiella* and sent by me, and answered that the two species are very similar and certainly congeneric. He gave me a helpful advice that they should be treated as separate species with attention to possibility of synonym until the examination on further specimens, in particular males, from China will show them conspecific.

Then I sent the male and female specimens of *issikiella* to Prof. LIU, Academia Sinica, China, and requested a comparison with the specimens of *argobathra*, but failed to demonstrate the synonym because there were no specimens of *argobathra* in his museum, especially in the Tien-mu-shan collection in 1970.

Consequently the two species, *argobathra* and *issikiella*, are treated as separate ones with possibility of synonym in present paper following the advice of Dr. SATTLER. *P. argobathra* was also recorded from Korea (Park, 1983a, b), but relationship between *issikiella* and Korean *argobathra* is not clarified.

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