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Three New Species of Genera *Brachyacma* Meyrick and *Aristotelia* Hübner (Lepidoptera : Gelechiidae)

*Brachyacma*屬과 *Aristotelia*屬의 3신종 기재 (나비目, 뿔나방科)

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ABSTRACT Tow species of genus *Brachyacma* Meyrick, (*B. albilinella* and *B. sublutiana*), and one species of genus *Aristotelia* Hübner, (*A. mesotenebrella*), are described as new to sciences.

KEY WORDS Systematics, Lepidoptera, Gelechiidae, *Brachyacma*, *Aristotelia*

초 록 뿔나방科의 *Brachyacma*屬 2신종 ; 앞테두리흰줄뿔나방(*B. albilinella*) 갈색테두리뿔나방(*B. sublutiana*)과 *Aristotelia*屬 1신종 ; 외줄수염뿔나방(*A. mesotenebrella*) 등 3신종을 기재 보고한다.

검 색 어 분류, 나비목, 뿔나방과, *Brachyacma*屬, *Aristotelia*屬

Genus *Brachyacma* Meyrick

1886, Trans. Ent. Soc. Lond., 278.
Type species : *Brachyacma epiochra* Meyrick, 1886.
= *Lathontogenus* Walsingham, 1897.
= *Lipatia* Busk, 1910.
= *Paraspistes* Meyrick, 1905.

Genus *Brachyacma* comprises 6 species which mostly are known from Oriental region, but its distributional range covers S. Africa, C. America, and S. Europe. The genus is closely related to genus *Mesophleps* Hübner. *Brachyacma* Meyrick and all of those related genera of *Mesophleps* Hübner such as *Chretienia* Spuler, *Crossobela* Meyrick, *Gnosimacha* Meyrick, *Paltodora* Lower, *Stiprotola* Meyrick, *Uncostridonta* Agenjo, and *Xerometra* Meyrick are currently considered to be junior synonyms of *Mesophleps* by K. Sattler (*pers. comm.*). However I tentatively treat *Brachyacma* as a valid genus in this paper. Generic names of *Brachiacma* by Common, 1970 and *Brachyacma* by Povolny, 1964 are incorrect subsequent spelling of this genus.

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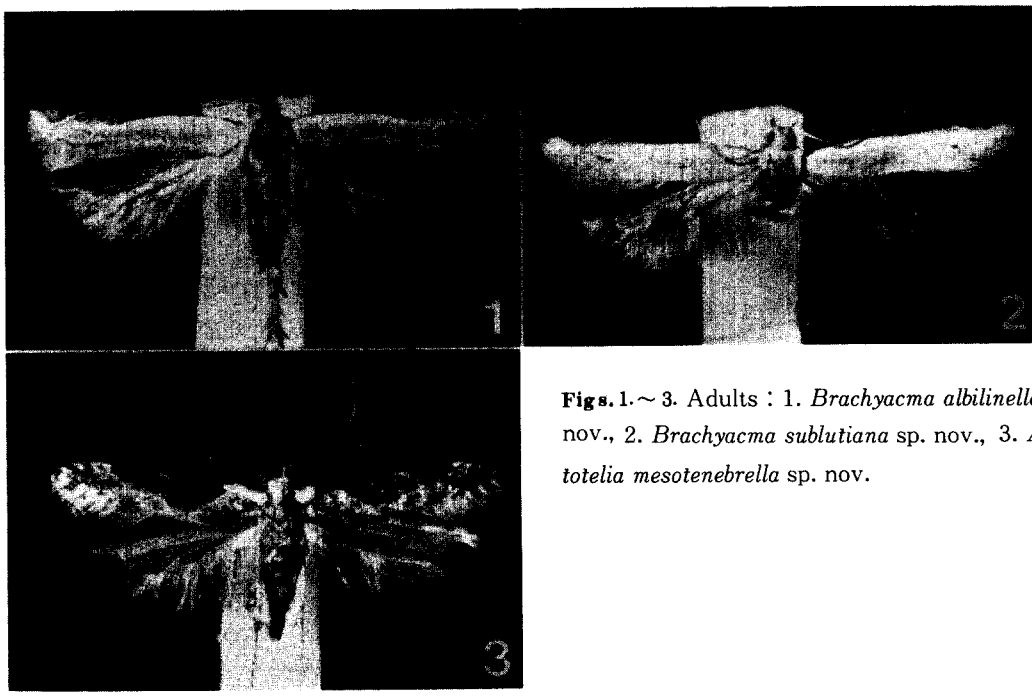
1. *Brchyacma albilinella* sp. nov.
앞테두리흰줄뿔나방(新稱)
(Figs. 1, 4, 6, 7, 8, 9)

Male and female, 11~14㎜. Head and thorax yellowish white or pale yellow, covered with relatively narrow and appressed scales ; frontoclypeus intermixed with fuscous scales. Antenna extending to 3/4 of the forewing ; scape rather long ; orange white with dark brown ring on each segment of flagellum. Labial palpus long, recurved; 2nd segment dark

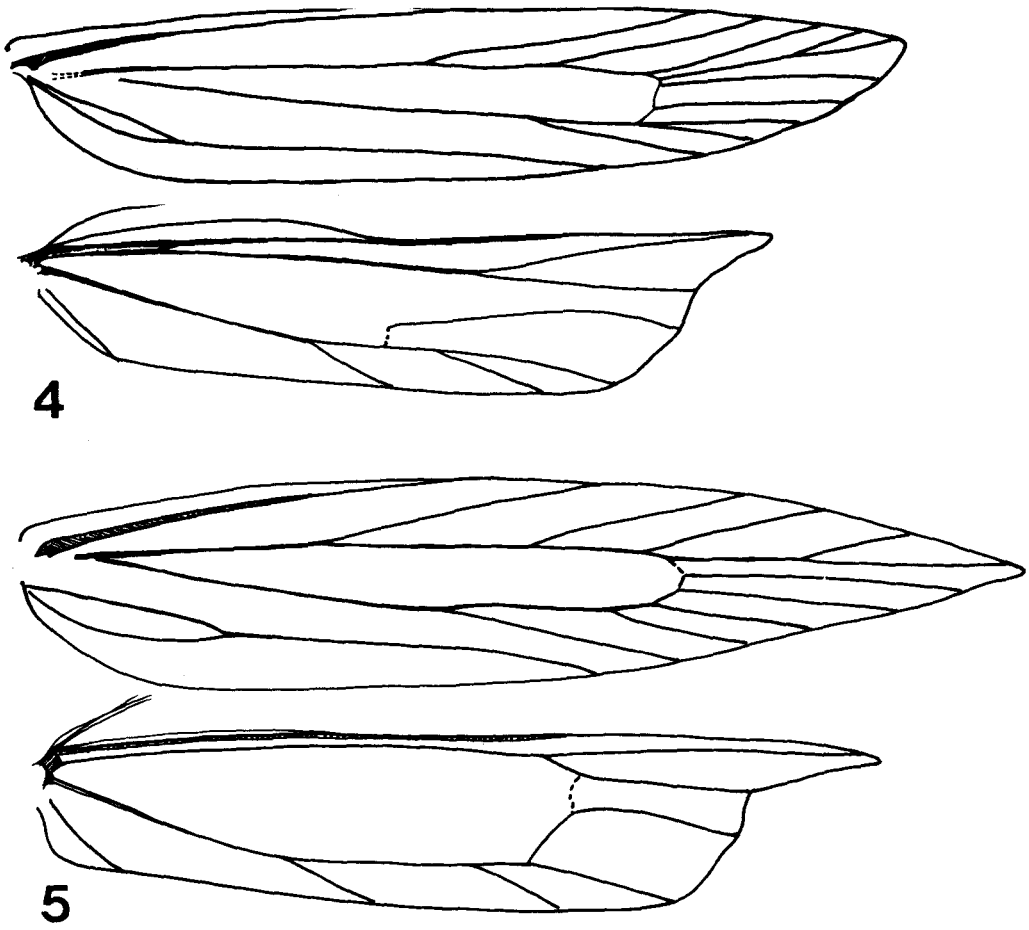


Figs. 1.~3. Adults : 1. *Brachyacma albilinella* sp. nov., 2. *Brachyacma sublutiana* sp. nov., 3. *Aristotelia mesotenebrella* sp. nov.

brown, with raised scales on dorsal surface, but rather smoothly covered with appressed scales on ventral surface, narrower toward base ; 3rd segment slender, slightly shorter than 2nd, basal 2/5 dark brown and yellowish white beyond of it, with fine acuminate tip. Fore-tibia uniformly dark grey on inner surface ; mid-tibia fuscous with a row of rough hairs along dorsolateral margin ; hind-tibia clothed with long, yellowish white hairs along ventro-and dorsolateral margins ; median tibial spurs dark fuscous, outer spur 2.5 times longer than inner one.

Forewing narrow and elongate ; ground colour yellowish white, upper half brownish orange ; dark brown streak margined along costa, broad at base and narrowed toward middle, lined with whitish yellow scales beneath it, gradually expanded to 3/5 of costa and then nearly parallel to apex ; an oblique white line from 3/4 of costa to termen, angled toward apex ; a median brown dash-mark at end of cell well developed and a series of 2 or 3 small faint dash-marks at middle of cell obliquely positioned ; a row of dark brown scales along termen. Cilia yellowish white. Venation with R_1 nearly from middle ; R_4 and R_5 on a common stalk ; R_5 to costa before apex ; M_1 arising from discal crossvein near base of R_{4+5} ; M_2 closer to M_3, nearly parallel, M_3 and CuA_1 connate at lower corner of cell, CuA_2 originating from 5/6 of cell. Hindwing dark grey, costa rather expanded from base to just before 1/2 ; termen strongly bisiniuate. Venation with $Sc+R_1$ extended to 3/4 of costa, Rs to near apex. Rs and M_1 shortly stalked ; M_2 originating before stalk of M_3 and CuA_1 ; M_2 closer to M_3 at base, reached near to end of M_1.

Male genitalia(Figs. 6, 7, 8). Tergite I and II of the abdomen dilated to a considerably wide plate, with smoothly concaved along anterior margin. Intersegmental membrane from segment III to VII densely covered with microtrochia. Uncus markedly developed, forming triangular-shape distally ; apex widened basally, densely setose along lateral margin. Gnathos with long lateral arms, terminal lobes strongly sclerotized, darkly pigmented. Tegumen well developed, a number of setae on dorsolateral

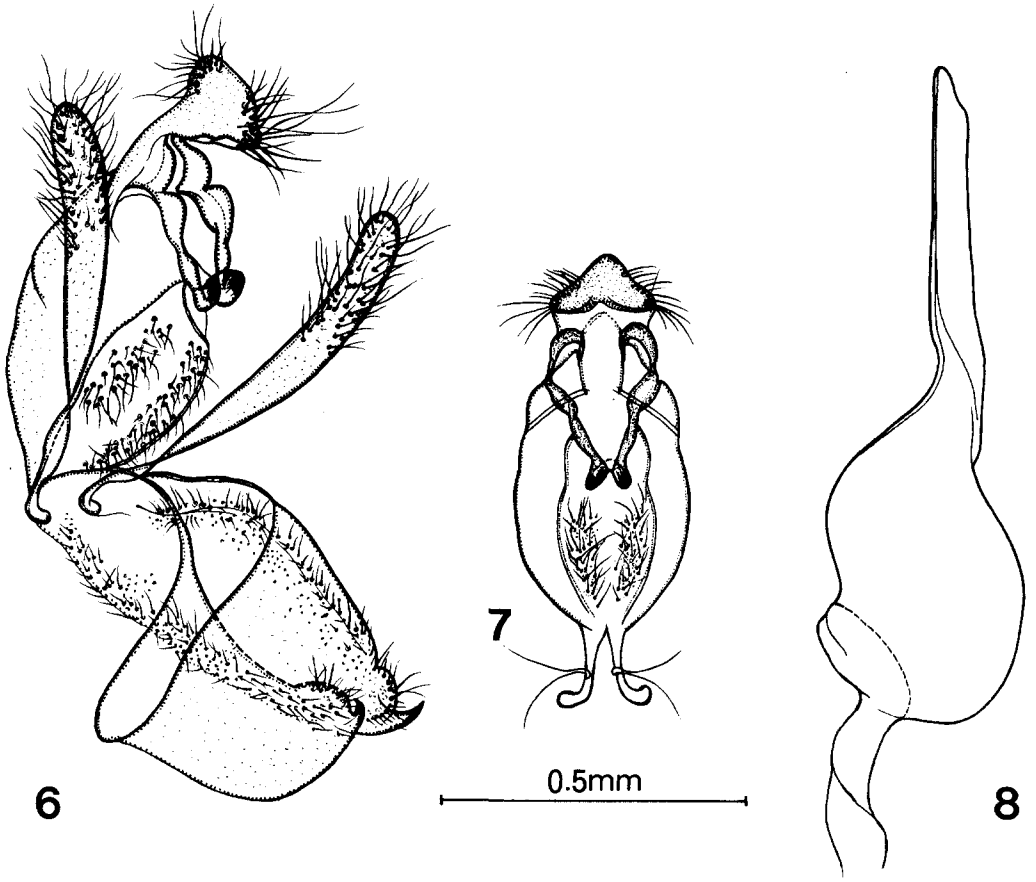


Figs. 4~5. Venations : 4. *Brachyacma albilinella* sp. nov., 5. *Aristotelia mesotenebrella* sp. nov.

surface. Diaphragm densely setose along membraneous lateral inner wall. Valva slender, digitate, densely setose beyond basal half, fused with dorsal articulatory process of tegumen. Saccus extended, in the form of membraneous pouch-like swelling with dense hair-like setae, which divided into tow folds distally with two acuminate terminal processes. Aedeagus moderately long, basal half spheroidal and then slender beyond it ; no signum.

Female genitalia(Fig. 9). Apophyses posteriores nearly 2 times longer than the length of apophyses anteriores, with expanded termination. Antrum cup-shaped, with rather sclerotized extension to ductus bursae. Ostium bursae surrounded by membraneous laterl plate -like denticles posteriorly. Ductus bursae narrow, very long, neary 2 times the diameter of corpus bursae. Corpus bursae oval ; ductus seminalis originated near the inception of corpus bursae.

Material examined. Holotype : male, Chuncheon, GW, Korea, 31. Ⅷ. 1983(K. T. Park), gen. slide no. 1787. Paratypes : 1♂, Gwangleung, GG, 4. Ⅷ. 1986(K. T. Park) ; 3♂♂, ibid., 31. Ⅷ. 1988(K. T. Park), gen. slide no. 1789 & 1816 ; 1♂, ibid., 13. Ⅷ. 1986(K. T. Park et M. K. Ko) ; 2♂♂, Chuncheon, GW, 26.



Figs. 6~8. 6. Male genitalia of *Brachyacma albilinella* sp. nov, 7. ditto, part of uncus+tegumen 8. ditto, aedeagus(scale : 0.5 ㎜).

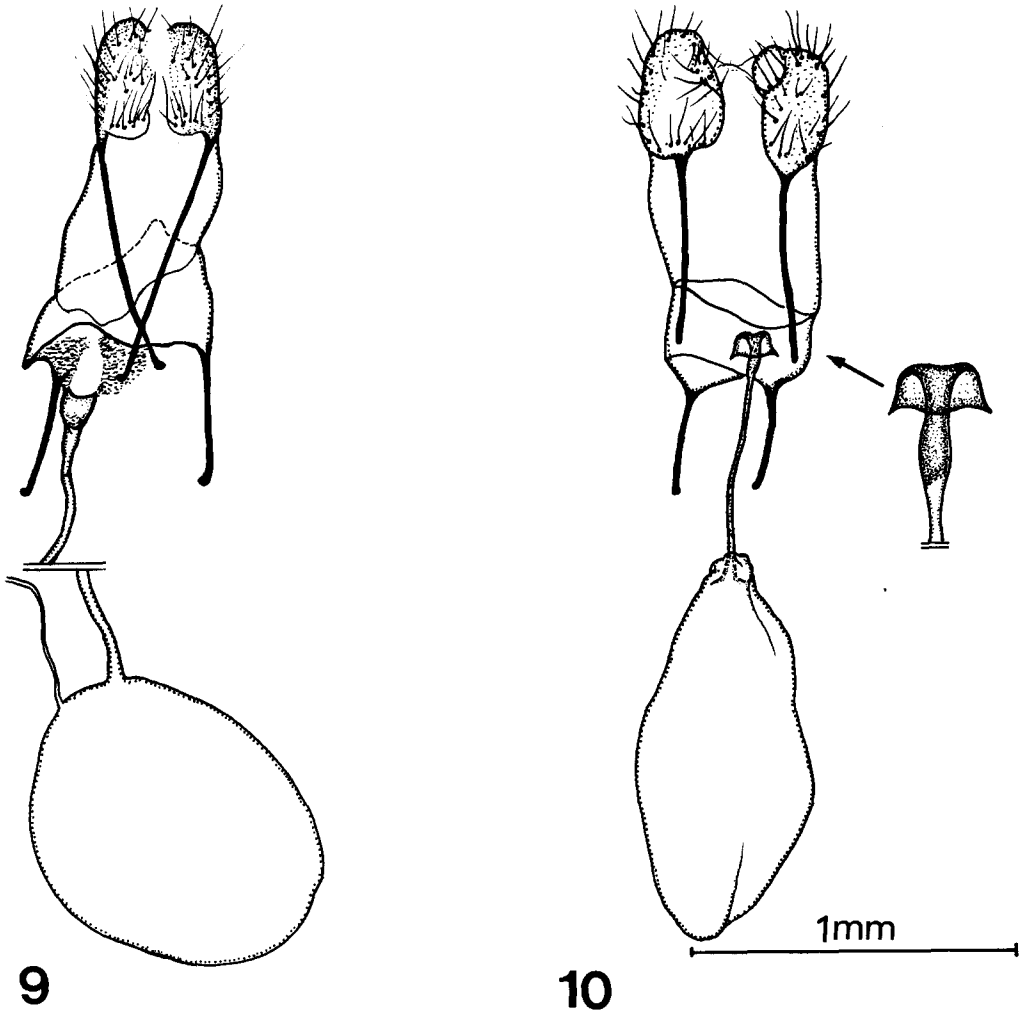
Ⅵ. 1984(K. T. Park) ; 1♂, ibid., 31. Ⅷ. 1984 (K. T. Park) ; 2♂♂, Yangyang, GW, 25-26. Ⅶ. 1987(K. T. Park), wing slide no 1816 ; 3♂♂, Mt. Samag, GW, 19. Ⅷ. 1986(K. T. Park), gen. slide no. 1814 ; ♂♂, ♀♀, Hongcheon, GW, 5. Ⅷ. 1990(K. T. Park). **Japan** : 1♂, 1♀, Minakami, 23. Ⅷ. 1974(Kawabe), gen. slide no. 1820(female).

Distribution. Korea(Central), Japan.

Remarks. This new species is superficially very similar to *B. palpigera* Walsingham which has been known from Oriental region including China, S. Africa, S. C. America, and Queensland, but it can be easily separated from the latter by the characters of male genitalia. Moths mostly appear from the early of July to the middle of August.

2. ***Brachyacma sublutiana* sp. nov.**
갈색테두리뿔나방(新稱)
(Figs. 2, 10)

Male and female, 11~14㎜. This species is externally very similar to the preceding species. Second segment of labial palpus brownish orange, thickened, rough but somewhat smooth without raised scales on dorsal surface, apex lined with whitish scales above ; 3rd segemnt much shorter than 2nd, whitish yellow, with a dark subapical ring. Forewing with dark brown patch along costal margin, but not very much

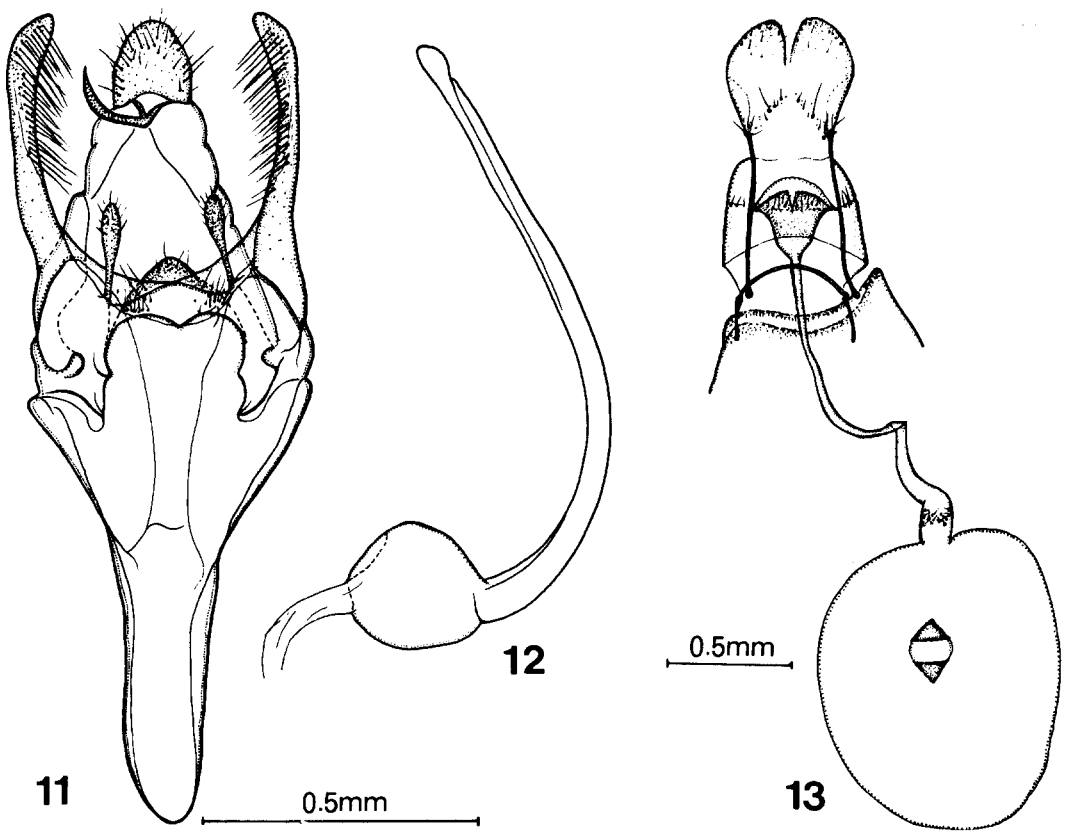


Figs. 9~10. 9. Female genitalia of *Brachyacma albilinella* sp. nov, 10. Female genitalia of *B. sublutiana* sp. nov. (scale : 1 ㎜)

expanded near 3/5 ; an oblique whitish line at 3/4 in the preceding species indistinct or atrophied, a row of dark brown scales along termen. Instead of a median brown dash-mark at ent of discal cell in the preceding species, 3 distinct dark brown transverse dashes well developed, positioned ; one at 1/3, other two at 1/2 and 3/4 of forewing. Hindwing broader and darker than the preceding species.

Male genitalia. The genitalia of this new species was damaged and uncus + tegumen parts broken away. Saccus of membraneous pouch-like swelling is very similar to those of *B. palpigera*, but the shape of valva is different by having broadened distal half.

Female geniatlia(Fig. 10). Apophyses posteriores and anteriores rather shorter than the preceding species. Anterior part of ostium bursae extended and widened anteriorly, forming helmet-like plate. Antrum bulbous, elongate, weakly sclerotized, narrower near middle and then widened anteriorly. Ductus



Figs. 11~13. 11. Male genitalia of *Aristotelia mesotenebrella* sp. nov, 12. ditto, aedeagus, 13. ditto, Female genitalia (scale : 0.5 mm).

bursae rather short, approximately 1/2 of corpus bursae in length. Corpus bursae large, semiovate, densely covered with microdenticles, without signum. The shape of ostium bursae and the size of corpus bursae are quite different from those of *B. palpigera*.

Material examined. Holotype : female, SuGG, Korea, 16. VI. 1983(S. B. Ahn), gen. slide no. 1811. Paratype : male, Chuncheon, GW, 11. VI. 1988(K. T. Park), gen. slide no. 1810, parts of genitalia were broken away.

Distribution. Korea(Central).

Genus *Aristotelia* Hübner

1852, Verz. bekannter. Schemett., ; 424.

Typespecies : *Tinea decuriella* Hübner [1813].

= *Anaphaula* Walsingham, 1904.

= *Argyristis* Heinemann, 1870.

= *Chrysophora* Clemens, 1860.

= *Doryphora* Heinemann, 1870.

= *Doryphorella* Cockerell, 1888.

= *Enchrysa* Zeller, 1873.

= *Ergatis* Heinemann, 1870.

= *Eucatoptus* Walsingham, 1897.

= *Isochasia* Meyrick, 1886.

= *Syneunetis* Wallengren, 1881.

Genus *Aristotelia* Hübner comprises more than 100 species which are mostly distributed in S. N. America and Palaearctic region. Known range of this genus includes Asia minor, India and Africa. The genus differs from the related genera in the venation of both wings, and more distinguishable characters are the single bristle on the base of scape of antenna and sometimes the hair pencil on the base of hindwing in male.

3. *Aristotelia mesotenebrella* sp. nov.
외줄수염뿔나방(新稱)
(Figs. 3, 5, 11, 12, 13)

Male and female, 13~15㎜. Head densely covered with relatively broad and appressed scales ; scales yellowish white with brown tip distally. Thorax and tegula brown, mixed with dark brown scales. Antenna extending nearly to 4/5 of the forewing, scape with a hair-like bristle near base ; flagellum with dark brown segements, but yellowish brown segments irregularly replaced beyond half. Labial palpus very long ; 2nd segment roughly thickened, outer surface yellowish white, intermixed with brown scales, but inner surface usually paler than outer surface, yellowish white along dorsal surface. Terminal segement approximately same as 2nd in length, forming 2 broad dark bands alternating with 2 broad yellowish white bands ; apex sharply pointed. Fore-tibia uniformly dark fuscous on ventral surface ; mid-tibia forming alternatively dark fuscous and yellowish white bands, with relatively strong spurs ; hind-tibia clothed with long, yellowish white hairs above, mid and apical spurs very long, the outer one 1/2 times of the inner one in length. All tarsomers with yellowish white hair-like scales at distal end.

Forewing lanceolate, evenly narrowed apically beyond 3/4. Ground colour pale yellow or yellowish orange, mottled dark fuscous and covered irregulary with dark brown scales. Costal patch dark fuscous and covered irregulary with dark brown scales. Costal patch dark fuscous, elongate, extended from 1/4 to 3/4 of costa, covers to lower margin of cell ; creamy white scales lined along inner margin of patch ; a dark brown dash-mark transverally positioned at end of cell and the other one near apex. Cilia white basally and grey in distal half, with irregular rows of fuscous speckles, very long hairs from near tornus to middle of inner margin. Venation with R_1 arising 2/5 of cell, R_1 -R_2 nearly 2 times of the distance of R_2-R_3 ; R_4 and R_5 stalked before half of their extent ; M_1 straight, arising at middle between R_5 and M_2 ; distance of M_1-M_2 and M_2-M_3 nearly equal ; M_1, M_2 and M_3 nearly straight ; M_3 and CuA_1 remote at base ; CuA_2 arising beyond 3/5 of cell. Hindwing elongate-trapezoidal, grey, somewhat strongly sinuated with sharply poined apex. Venation with Sc ending beyond middle, Rs and M_1 stalked, M_1 derived from befor end of cell ; M_2-M_3 nearly 2 times of the distance of M_1-M_2 ; M_2 strongly curved downwardly near base. Males with a long hair pencil on the base of hindwing.

Male genitalia. Uncus broad tongue-shaped, sparsely setose ventrally. Gnathos hook-shaped, strongly sclerotized. Valva elongate, broadened distally, with rather strong setae densely along inner-ventral surface, bearing a pair of club-shaped processes near base of valva. Transtilla weakly sclerotized, convexed at middle. Saccus well developed, longer than the length of uncus +tegumen. Aedeagus slender, very long, distinctly curved, with bulbous base.

Female genitalia. Both sides of apophyses anteriores strongly connected, forming crescent -shaped structure posteriorly. Anterior margin of 7th sternite and tergite smoothly concaved, bearing microtrichia densely along the margin. Lamella postvaginalis produced into fan-shaped, sclerotized. Anterior margin of 8th sternite bearing 8~10 long setae near middle and 3~4

laterally, Ductus bursae long, with a series of spine-like denticles near the connection with corpus bursae. Corpus bursae oval ; signum with a pair of triangular-shaped lobes, slightly serrate.

Material examined. Holotype : male, Chuncheon, GW, 1, V. 1989(K. T. Park), gen. slide no. 1817. Paratypes : Gwangleung, GG, 1 ♀, 5. VI. 1984(Y. I. Lee) ; Cheongpyung, GG, 1 ♀, 26. V. 1984(K. T. Park) ; Chuncheon, GW, 2♀♀, 22. IV. 1985(K. T. Park), gen. slide no. 1357 ; 1♂, ibid., 15. V . 1985(K. T. Park), gen slide no. 1362 ; 3♂♂, 3♀♀, ibid., 1. V. 1989 ; 6♂♂, 3♀♀, 7-9. V. 1989 ; 3♂♂, 1♀, 29. V. 1989(K. T. Park)wing slide no. 1815 ; 1♂, 1♀, Chugok, Chunsung, GW, 30. VII. 1986(K. T. Park) ; Mt. Samag, GW, 1♀, 19. VII. 1989(K. T. Park) ; 1♀, Sogumgang, GW, 24. V. 1988 (K. T. Park) ; Mt. Chiag, GW, 1♀, 23. VI. 1977 (Y. Y. Ha) ; Pyeongchang, GW, 1♂, 1♀, 24. VI. 1983(S. H. Oh).

Distribution. Korea(Central).

Remarks. Moths apper from early of May to end of July in Korea.

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REFERENCES CITED

Clarke, J. F. G. 1955. Catalogue of the type specimens of Microlepidoptera in Brit. Mus. (Nat. Hist.) described by E. Meyrick. Vol. 6, 537pp & Vol. 7, 531pp.

Gaede, M. 1937. Gelechiidae In Bryk, F., Lepidopterorum Catalogue, 79 : 423, 588.

Janse, A. J. T. 1949. In Gelechiidae, The moths of South Africa, 5(1) : 105~119.

Meyrick, E. 1925. Gelechiidae, In Wytsman, Genera Insecta, 184, 290 pp.

Sattler, K. 1973. A Catalogue of the Family-group and Genus-group names of the Gelechiidae, Holcopogonidae, Lecithoceridae and Symmocidae (Lepidorptera). Bull. Brit. Mus. (Nat. Hist.) Ent. 28(4), 282pp.

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