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A NEW MINT BORER OF TORTRICIDAE FROM JAPAN,
WITH DESCRIPTION OF A NEW GENUS*
(LEPIDOPTERA : TORTRICIDAE)

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In the present paper will be described a new species of Tortricidae which bores into the rhizome of mint. Moreover a new genus will be proposed for the species.

On this occasion the writer wishes to express his hearty thanks to Prof. C. Watanabe for his continuous encouragement and guidance. Thanks are also due to Prof. S. Kuwamura, Mr. H. Kimura, Mr. H. Tezuka, and Mr. Y. Mano for their kindness in giving the opportunity to examine the material preserved in the collection of the Hokkaido National Agricultural Experiment Station, Sapporo.

Alloendothenia menthivora, sp. nov.

♂, ♀. 15-18 mm. Antenna about half of fore wing in length, dark grey, ciliated. Palpus subascending, greyish-brown, the median segment expanding towards apex with rough scales, and the apical segment exposed. Head light greyish-ochreous. Thorax greyish-brown, without crest. Fore and middle legs greyish-brown externally, paler internally, spotted on tips of tarsi with pale ochre-brown; a pale ochreous transverse line at middle of tibia of middle leg; hind leg pale greyish-ochre.

Fore wing gradually dilated posteriorly, without costal fold; termen almost straight; all veins separated; Cu_2 from $3/4$ of cell. Colour light greyish-ochre in ground, faintly striated with grey and brown; dark greyish mottling on basal $1/3$ of wing, often extending over to middle of wing; markings dark grey, mixed minutely with brown; central fascia rather broad, irregular, expanding from about middle of costa to just below fold, with anterior margin abruptly concave at end of cell; an elongate patch from termen above tornus towards costa before apex; another smaller patch on dorsum before tornus, raised towards apex; these two patches often edged with paler colour; some darker dots on apex and apical part of costa; cilia ochre-grey, with a darker basal line and a paler subbasal shade. Hind wing grey, with a narrow and short dorsal fold in male, which is not completely depressed to wing-surface and contains a hair tuft exposed apically; R_s and M_1 not stalked; cubital pecten present; cilia pale ochre-grey, with a paler basal line and duplicated dark greyish subbasal shade around apex.

Male genitalia retractile into chitinized pouch consisting of caudal margin of eighth

* Notes on Japanese Tortricidae III.

abdominal segment; tegumen rounded and extremely bulging; uncus constricted at base, with strong spines ventrally in two rows; socii strongly chitinized, triangular, producing behind, and fused with tegumen at base; gnathos absent; valva broad, concave at base of cucullus, which is furnished with very long hairs; caudal process of sacculus curving inwards, harp strong, setting with stout spines on its apex; aedeagus acutely pointed, with

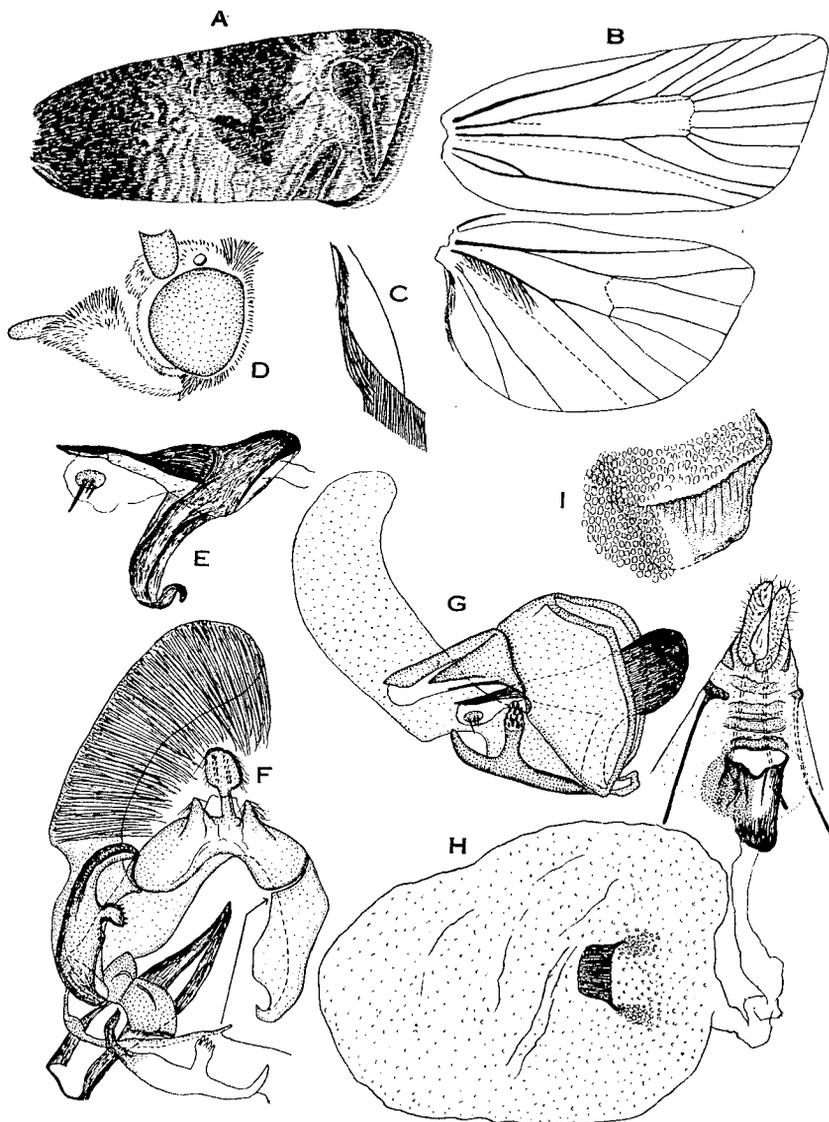


Fig. 1. Adult of *Alloendothenia menthivora*, sp. nov.

A: Fore wing (♂), B: Wing-neruation (♂), C: Dorsal fold of hind wing (♂), D: Head in lateral view, E: Aedeagus, F: ♂ Genitalia in caudal view, G: Ibid. in lateral view (hairs detached), H: ♀ Genitalia in ventral view, I: Signum.

three cornuti setting on a chitinized plate.

Female genitalia : lamella postvaginalis present ; lamella antevaginalis circular ; ostium bursae broad, with cephalic margin concave at middle ; antrum wide and long, very heavily chitinized ; ductus bursae rather short, membranous ; bursa copulatrix covered with numerous small depressions ; signum pocket-like.

Holotype (♂) : 30 VII, 1940 ; Paratypes : 4♂, 1♀, 20 VII-17 VIII, 1940 (Nokkeushi, Hokkaido) bred by S. Ishida ; 1♂, 1♀, 4 X, 1962 (Kunneppu, Hokkaido) (from larvae preserved in a refrigerator until September) bred by H. Tezuka.

Mature larva : 14-16 mm. in length. Head orange-brown, with irregular darker markings ; caudo-lateral patch and eye-spot blackish ; P1, P_b and P2 not placed on a straight line ; O1 situated between the second and the third ocelli. Mandible blackish-brown, with five teeth ; retinaculum not developed. Cervical shield yellowish-brown, irregularly lined with dark brown along caudal margin ; SD2 apparently nearer to D1 than to XD2. Thoracic legs very pale brown. Body creamy white ; anal shield yellowish-brown ; anal falk absent ; two D2 on one pinaculum on ninth abdominal segment ; SV bi- or trisetose on the first, tri- or tetrasetose on the second, trisetose on the eighth, and bisetose on the ninth abdominal segment ; SD1 and SD2 on one pinaculum, the latter very minute. Abdominal legs with chrochets biordinal. Spines of body skin thorn-like.

Specimens examined : 5 mature larvae, 10 VI, 1963 (Kunneppu, Hokkaido) H. Mano leg.

Notes :—The adult of the present species is somewhat similar to that of *Endothenia antiquana* Hübner, from which it is easily distinguishable in the vein Cu₂ of fore wing originating from 3/4 of cell. According to the observation of the late Shuichi Ishida, the biology of the species is briefly stated below :—

The winter is passed in the larval form within the rhizome of mint. In the following spring the larvae remove from the rhizome and make cocoons for pupation under the ground in depth of about 1 cm. The moths begin emergencing in early July and continue coming out until mid-August. The eggs are deposited one by one on the leaf of the host plant, and hatch in about one week. The larvae bore into the stem and finally reach the rhizome. The species seems to be univoltine.

Holotype and one paratype are deposited in the collection of the Entomological Institute, Hokkaido University, and the other paratypes in the collection of the Hokkaido National Agricultural Experiment Station.

Alloendothenia, gen. nov.

Genotype : *Alloendothenia menthivora*, sp. nov.

On account of the wing-venation the present genus is superficially similar to some genera of the Phaloniidae, but it is apparently placed in the Olethreutinae of the Tortricidae by the presence of the cubital pecten of the hind wing and by the structure of the genitalia. This genus may be closely related to the genus *Endothenia* Stephens, from which it is distinct by the following aspects :—

- (1) Vein Cu₂ of fore wing originating from 3/4 of cell.

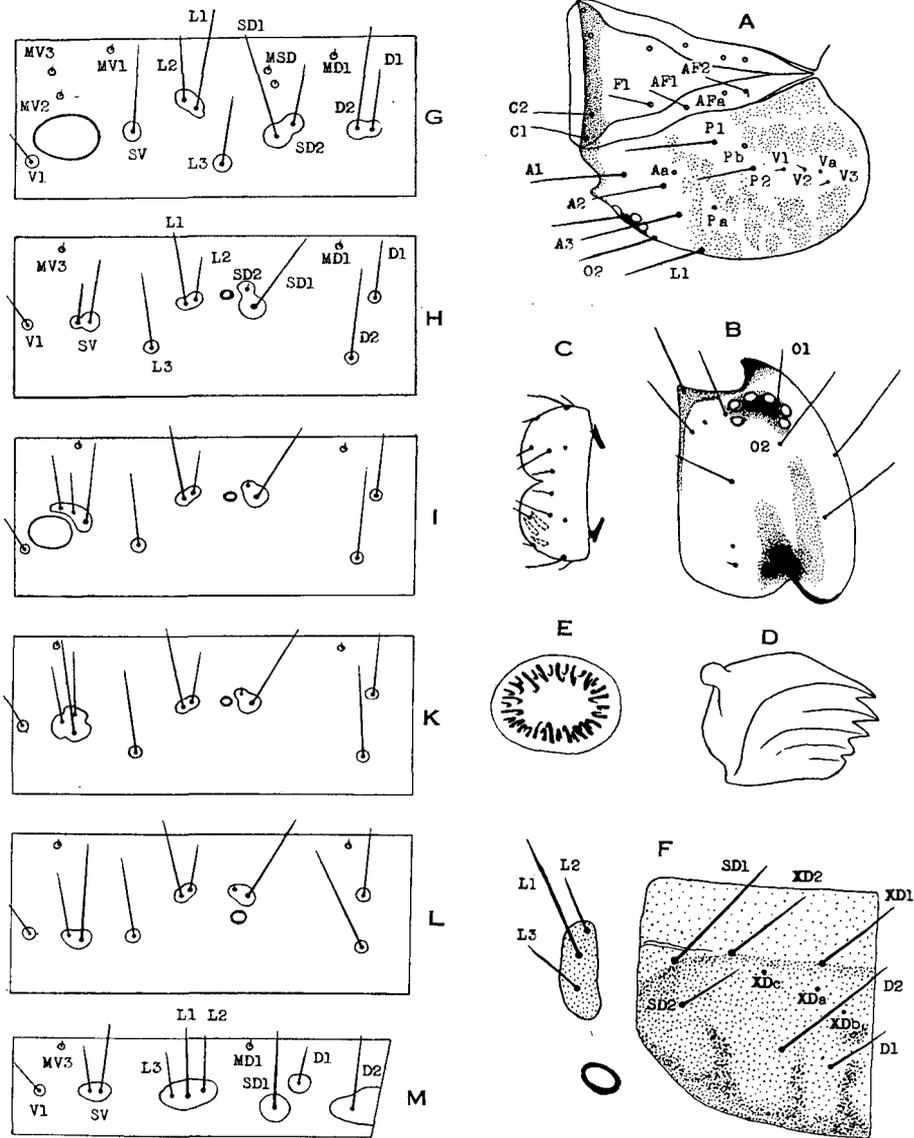


Fig. 2. Larva of *Alloendothenia menthivora*, sp. nov.

A: Head capsule in dorsal view, B: Ibid. in lateral view, C: Labrum, D: Mandible in ventral view, E: Crochets of abdominal leg, F: Dorsal and lateral setae of prothorax, G-M: Setal arrangement (G: mesothorax, H: 1st, I: 3rd, K: 7th, L: 8th, and M: 9th abdominal segments).

- (2) Veins R_s and M_1 of hind wing closely approximated, but not stalked.
- (3) Male genitalia with broader valva and with cornuti setting on a chitinized plate.
- (4) Female genitalia with much broader and longer antrum.