Short communication

Korean J. Syst. Zool. Vol. 26, No. 3: 325-327, November 2010

Discovery of a Multi-Plumed Moth, *Alucita japonica* (Matsumura), (Lepidoptera: Alucitidae) from China

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ABSTRACT

In the present paper, *Alucita japonica* (Matsumura), is reported for the first time from China. The external and genitalic characteristics of both sexes are described and illustrated.

Keywords: Lepidoptera, Alucitidae, *Alucita*, new record, China

INTRODUCTION

The genus *Alucita* Linnaeus, 1758 belongs to the family Alucitidae, which is well known as the many- or multi-plumed moths. More than 180 species of the genus have been described in the world (Gielis, 2003). The larvae of the family Alucitidae feed as borers in buds, flowers, fruits, and shoots, or make galls on at least eight families of dicotyledonous plants, including Caprifoliaceae, Bignoniaceae, and Rubiaceae (Dugdale et al., 1999).

In East Asia, the genus *Alucita* L. has been investigated by various researchers to date: 5 species from Japan (Hashimoto, 1984); 3 species from Russian Far East (Ustjuzhanin, 1999). Recently Byun (2006) reviewed the Korean Alucitidae with a new species and two new records. However, it has been poorly known from China, including only one species, *Alucita niveodactyla* Pagenstechen from Guangdong, southern part of China (Hua, 2005).

In the present study, we found a newly recorded species of the genus *Alucita* L. from the middle part of China. The purpose of this study is to report the newly recorded species of the genus *Alucita* L.

MATERIALS AND METHODS

Material examined for the present study is based on collection of Northeast Forestry University (NEFU), Harbin. The materials were collected by sweeping net and light trap (mercury vapour lamp, 220 V/220 W). Moths were caught alive with the vial-tubes individually, treated with ethyl acetate, and then spread with the micro-insect pins. All available genitalia were made on slide glass with Euparal, and the illustrations for each species were taken by digital camera, AxioCam MRc 5 attached on the microscope, Carl Zeiss Axio Imager A1.

The colour standard for the description of adults was based on Methuen Handbook of Colour (Kornerup and Wanscher, 1978).

SYSTEMATIC ACCOUNTS

Order Lepidoptera Linnaeus, 1758
Family Alucitidae Leach, 1815
Genus *Alucita* Linnaeus

Phalaena *Alucita* Linnaeus, 1758: 542. Type species: *Phalaena Alucita hexadactyla* Linnaeus, 1758.
=*Orneodes* Latreille, 1796: 148. Type species: *Orneodes hexadactyla* Linnaeus, 1758.
=*Euchiradia* Hübner, [1826]: 431. Type species: *Orneodes hexadactyla* Linnaeus, 1758.

External morphology of *Alucita* are as follows: antenna filiform; labial palpus slightly curved upwardly, with thin and short 3rd segment; maxillary palpus fairly short, externally obscure; vein Sc in forewing free or fused with R1 at base or in basal 1/3; hindwing with veins Sc+R1 and Rs fused before beginning of 1st cleft, and 2nd cleft reaching near base (Hashimoto, 1984). *Alucita* can be distinguished from other genera with six segments (or lobes) in both the fore- and hindwing by the deep constriction of the second cleft (Hashimoto, 1984). Zagulayeav (1997) indicated that the more detail characteristics for distinguishing from the allied genus are as follows: 3rd segment of labial palpus long, not less than 2/3 as long as 2nd segment; 4 R-veins developed on forewing; uncus usually divided into lobes.

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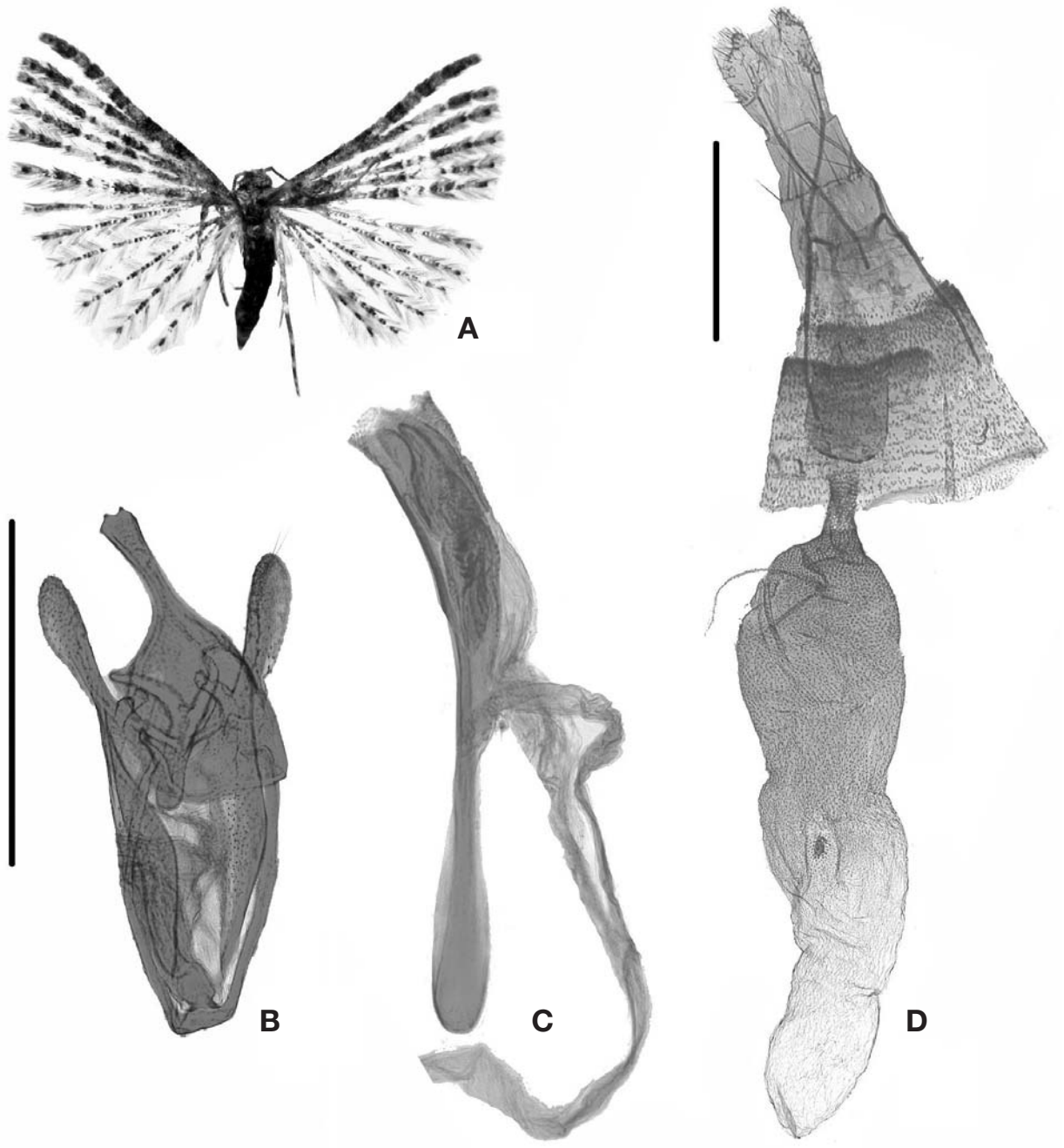

Fig. 1. *Alucita japonica* (Matsumura): A, Adult; B, C. male genitalia; D, female genitalia. Scale bars: 0.5 mm.

***Alucita japonica* (Matsumura) (Figs. 1, 2)**

Orneodes japonica Matsumura, 1931: 1059.

Alucita japonica: Inoue, 1982: 288 (vol. 1), 216 (vol. 2), pl. 31: 1.

Adult (Fig. 1A). Head: Densely scaled, whitish ash-gray. Labial palpus brownish gray, whitish dorsally, densely scaled, ca. 1.5 times as long as horizontal diameter of compound eye; 2nd segment with dense scales, ca. 1.5 times as long as horizontal diameter of compound eye; 3rd segment short and slender, dull terminally, nearly as long as horizontal diameter of compound eye. Thorax: Whitish dorsally.

Wingspan 11.7-13 mm. Forewing grayish brown, divided into six fuscous brown lobes, deeply emarginated between the first cleft at 3/5; 1st lobe with 7 small distinct trapezoidal spots, width of middle area ca. 0.33 mm; spots I-III weak

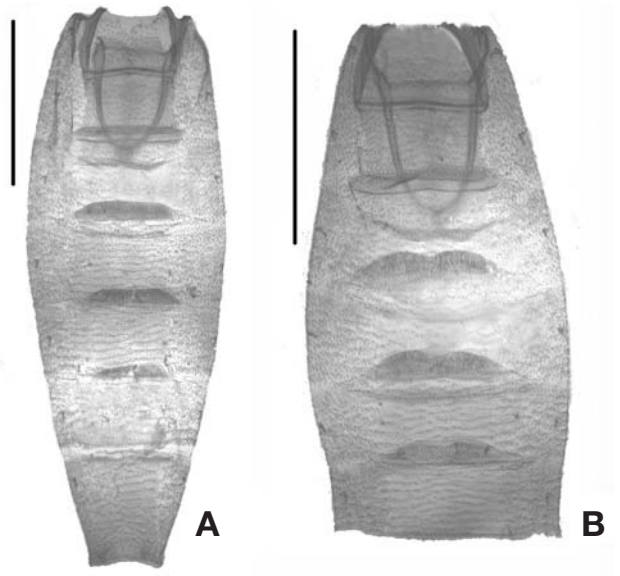

Fig. 2. Abdomen of *Alucita japonica* (Matsumura): A, male; B, female. Scale bars: 1 mm.

reaching to 1/3 of each lobe; spot III small, just before the place of lobe fusion, closed to spot II; spots IV-VI somewhat wide, reaching to the middle of each lobe; spot IV slender but distinct; apical spot very small at apex; medial fascia on 3rd-6th lobes located at the level of costal spot IV, more than twice length that of costal spot IV; subterminal spots on 3rd-6th lobes at the level of costal spot V nearly same length of medial spots. Hindwing color and pattern similar to that of forewing, but rather narrow with several small spots along each lobe.

Male genitalia (Fig. 1B, C): Tegumen narrow, small, longer than wide. Uncus short, ca. 1/5 length of aedeagus, gradually broadening terminally, slightly rolled laterally, apically with 4 downward directed points. Gnathos short, attenuate terminally, but not acute. Valva fairly short, rounded terminally; valvula slender, clavate; sacculus long, membranous; cucullus slender, clavate. Aedeagus very long with strongly sclerotized area ventrally, five times as long as uncus, gently arched, broadened in distal half, a bundle of minute cornuti in vesica; coecum thickened, 1/2 length of aedeagus.

Female genitalia (Fig. 1D). Papilla analis narrowly rounded terminally. Corpus bursae very long, sack-shaped, membranous, with somewhat rounded signum comprising of a group of minute dull spinules at middle. Ductus bursae very short, nearly same as the antrum, spiculated from ca. 1/3 to coprpus bursae; covered with numerous spinules, rather densely distributed around middle part to the entrance of corpus bursae. Ductus seminalis originating from the upperside of corpus bursae.

Male and female abdomen (Fig. 2A, B) with an upper lip-like sclerotized part on each segment from 2nd to 5th.

Material examined. 5♂, 6♀, Mt. Baihua, Beijing, China (39° 57′57.88″N 115° 26′26.08″E, Alt. 1,300 m), 16-18 July 2008 (H.L. Han)-genitalia slide number KNAE-805 (♂), 806 (♀); 1♀, Mt. Jiufeng, Beijing, China (40° 02′19.75″N 116° 05′04.80″E), 16 July 2008 (H.L. Han).

Distribution. China (new record), Korea, Japan.

Host. Unknown.

Remarks. Byun (2006) noted that the species has two or three generations a year, with adults collected from late spring to fall in Korea. According to Inoue (1982), this species overwinters in the adult stage as do many Alucitidae.

ACKNOWLEDGEMENTS

This paper has been supported by 2010 Hannam University Research Fund.

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Received September 16, 2010
Accepted November 12, 2010