

## Six Species of the Family Noctuidae (Lepidoptera) New to China

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### ABSTRACT

From the result of this study for the materials collected in Mt. Changbai-shan, six species of the family Noctuidae, *Pangrapta marmorata* Staudinger, *P. griseola* Staudinger, *Ctenostola sparganoides* (Bang-Haas), *Cucullia amota* Alphéraky, *Xestia albonigra* (Kononenko), and *X. speciosa* (Hübner), are reported for the first time from China.

**Key words:** new record, Noctuidae, systematics, Mt. Changbai-shan, China

### INTRODUCTION

In China, more than 2,300 species of the family Noctuidae have been known to date (Chen, 1999; Chou and Lu, 1974, 1978, 1979a, b; Han et al., 2003, 2005a, b; Hua, 2005; Wu, 1938). From the result of the expedition of moths in Mt. Changbai-shan during 2000-2006, we found that six species of the family Noctuidae are new to the Chinese fauna: *Pangrapta marmorata* Staudinger, 1888, *P. griseola* Staudinger, 1892, *Ctenostola sparganoides* (Bang-Haas, 1927), *Cucullia amota* Alphéraky, 1887, *Xestia albonigra* (Kononenko, 1981) and *X. speciosa* (Hübner, 1813). All available information for synonymies and distributional data of the newly known species are provided.

Material examined in this study are deposited in the collection of the Center for Insect Systematics, Kangwon National University, Korea, on an indefinite loan from China.

### SYSTEMATIC ACCOUNTS

#### *Pangrapta marmorata* Staudinger, 1888 (Figs. 1A, 2A, 3A)

*Pangrapta marmorata* Staudinger, 1888, Stettin. ent. Ztg. 49: 277 (TL: RFE, [MNHU, Berlin]); Kononenko et al., 1998: 103; Kononenko, 2003: 118; Kononenko, 2005: 65.

*Material examined.* 2♂, Helong, Jiashan, 680 m, 13 VII 2001 (K.T. Park and H.L. Han) 1♀, Helong, Chongshan,

600 m, 14 VII 2001 (K.T. Park and H.L. Han) 1♀, Changbai county, Malugou, 730 m, 17 VII 2001 (K.T. Park and H.L. Han).

*Diagnosis* (Fig. 1A). Wingspan 26-27 mm. This species is superficially similar to *P. disruptalis* (Walker), but it can be distinguished by the paler forewing with three white reniform spots and the hindwing with well developed, four small white discal spots.

Male genitalia (Fig. 2A). Uncus hook-shaped, bent at basal 1/3, expanded beyond half, pointed apically. Valva narrowed beyond 3/5 with round corona; process of costa heavily sclerotized, with sharply pointed apex; sacculus weakly sclerotized, extending to half of ventral margin. Aedeagus narrowed at carina part; vesica swollen basally; cornuti forming band ventrally, consisting 5-7 small spines at base; with two diverticula, one short and curved; the other longer and straight with a small process medially.

Female genitalia (Fig. 3A). Apophysis posterioris broad, 1/3 length of apophysis anterioris. Ductus bursae narrower at distal 1/3, with a sclerotized lump beyond 2/3. Corpus bursae ovate, with a long sclerotized band, extended from ductus bursae, with a triangular signum.

*Distribution.* China (new record), Korea (North, Central), Russia (RFE).

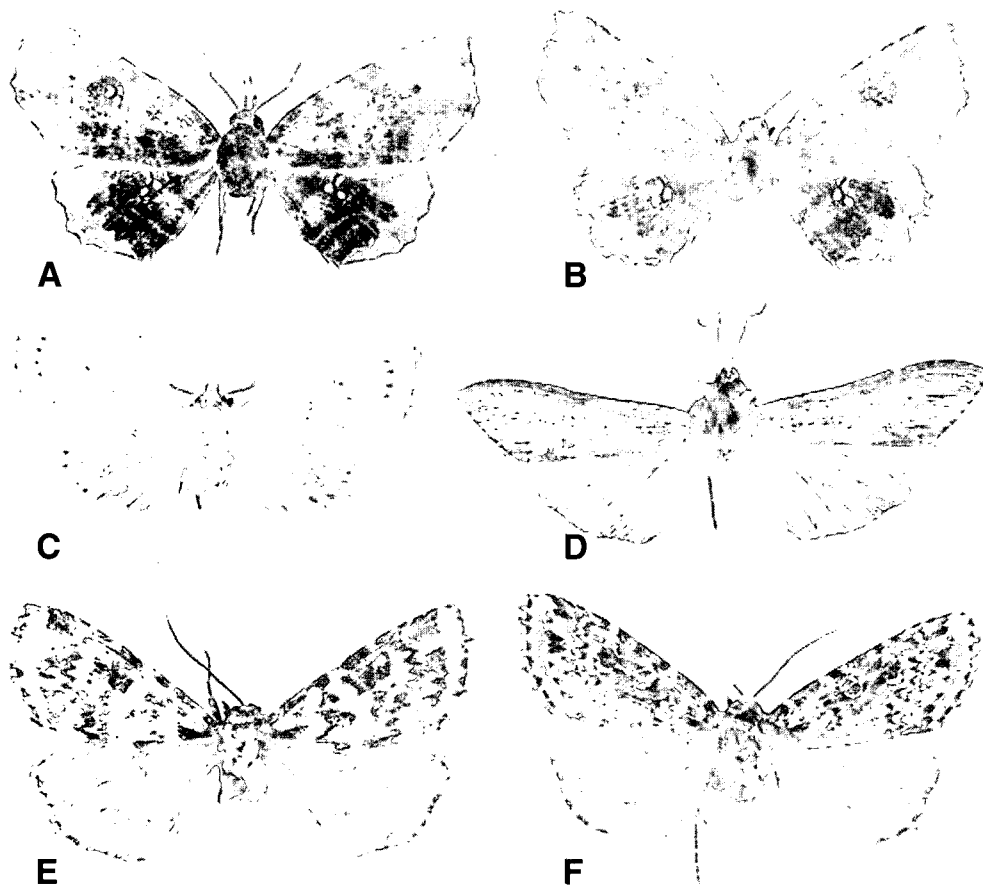
*Pangrapta griseola* Staudinger, 1892 (Figs. 1B, 2B, 3B)  
*Pangrapta griseola* Staudinger, 1892. In Romanoff, Mem. Lepid. 6: 620, pl.14: 11 (TL: RFE, [MNHU, Berlin]); Kononenko et al., 1998: 103-104; Kononenko, 2003: 118; Kononenko, 2005: 65.

*Material examined.* 1♀, Helong, Jiashan, 600 m, 1 VIII

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**Fig. 1.** Adult. A, *Pangrapta marmorata* Staudinger; B, *P. griseola* Staudinger; C, *Ctenostola sparganoides* (Bang-Haas); D, *Cucullia amota* Alphéraky; E, *Xestia albonigra* (Kononenko); F, *X. speciosa* (Hübner).

2000 (K.T. Park and H.L. Han) 1♂, Fusong, Weidong, 1,255 m, 16 VII 2001 (K.T. Park and H.L. Han) 1♂, 2♀, Longjing, Renchuan, ca. 370 m, 15 VIII 2003 (H.L. Han and D.Y. Jin).

**Diagnosis** (Fig. 1B). Wingspan 25-26 mm. This species is similar to the preceding species, but it can be distinguished by the reniform spots of the forewing not whitish, indistinct and the serrate outer margin of both wings.

**Male genitalia** (Fig. 2B). Uncus slightly swollen. Valva simple; process of sacculus long, with pointed apex; harpe weakly sclerotized, pointed terminally. Aedeagus short, curved; carina weakly sclerotized. Vesica membranous, with two cornuti: one larger near apex of basal diverticulum, the other smaller at the apical diverticulum.

**Female genitalia** (Fig. 3B). Apophysis posterioris short, somewhat triangular. Ductus bursae slender, contracted and weakly sclerotized. Corpus bursae ovate, with weakly sclerotized.

**Distribution.** China (new record), Korea (South), Russia (RFE).

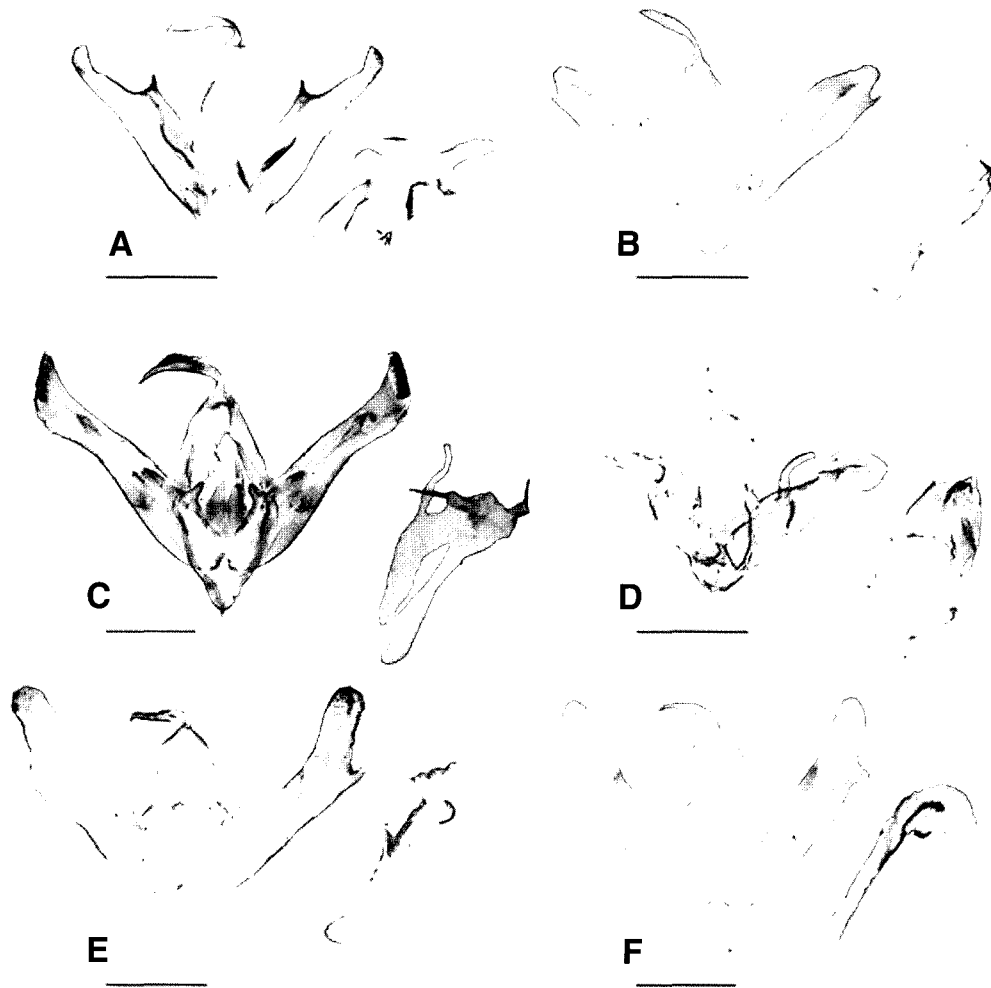
***Ctenostola sparganoides* (Bang-Haas, 1927)  
(Figs. 1C, 2D)**

*Archanara sparganoides* Bang-Haas, 1927. Horae Macrolepid. Reg. Palaearct. 1: 87, pl. 10: 38. (TL: RFE, Primorye, Partizansk [MNHU, Berlin]); Kononenko et al., 1998: 221 Kononenko, 2003: 352; Kononenko, 2005: 93.

**Material examined.** 1♂, Antu, Erdaobaihe, ca. 760 m, 11 VIII 2003 (H.L. Han and D.Y. Jin); 2♂, Fusong, Weidong, ca. 970 m, 12 VIII 2003 (H.L. Han and D.Y. Jin).

**Diagnosis** (Fig. 1C). Wingspan 29-30 mm. This species is similar to *Coenobia orientalis* Sugi, but it is easily distinguished by the forewing, with acute apex and postmedial line represented by small round spots rather than short streaks.

**Male genitalia** (Fig. 2D). Uncus broad, with pointed apex. Valva slightly narrowed at middle; harpe curved, hook-shaped; process of costa thick with a pointed apex. Aedeagus nearly straight; vesica membranous, incurvate; cornuti band-like, at terminal of basal diverticulum.



**Fig. 2.** Male genitalia. A, *Pangrapta marmorata* Staudinger; B, *P. griseola* Staudinger; C, *Cucullia amota* Alphéraky; D, *Ctenostola sparganoides* (Bang-Haas); E, *Xestia albonigra* (Kononenko); F, *X. speciosa* (Hübner). Scale bars=2 mm (A-F).

*Distribution.* China (New record), Korea (Central), Russia (Primorye), Japan (Hokkaido, Honshu, Kyushu).

***Cucullia amota* Alphéraky, 1887 (Figs. 1D, 2C, 3C)**

*Cucullia amota* Alphéraky, 1887. Stettin. Ent. Ztg. 48: 171; Boursin, 1941: 71, pl. 8. figs. 27, 28, pl. 12, figs. 22-24 (TL: Turkestan, [ZI, Leningrad]); Kononenko, 2003: 413 Kononenko, 2005: 139.

*Material examined.* 1 ♀, Tonghua, Prov. Jilin, 16 VII 1974 (L.C. Yuan); 1 ♂, Longjing, Prov. Jilin, 3 VIII 1999 (H.L. Han); 1 ♂, Huangdian, Beijing, 27 VII 2004 (F. Yuan).

*Diagnosis* (Fig. 1D). Wingspan 44-46 mm. This species is superficially similar to *C. kurilullia* Bryk, but can be distinguished by the forewing with ochreous narrow band below costa.

Male genitalia (Fig. 2C). Uncus short, heavily sclerotized,

with a hook shaped apex. Tegumen broad. Valva wide, thick, with strong hairs at corona; harpe short, strong, pointed apically; transtilla large, thick. Saccus inverted, bell shaped. Aedeagus long, gently curved; vesica with a large diverticulum and two strong cornuti.

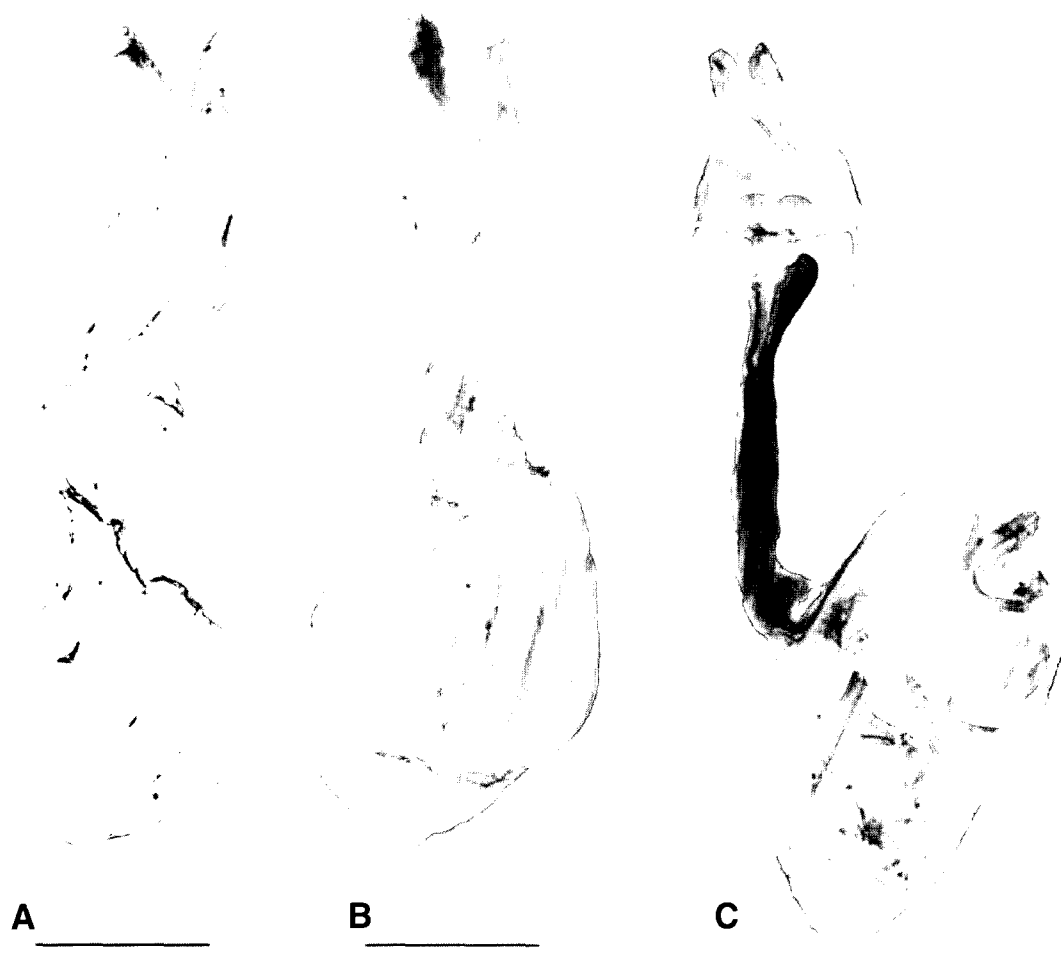
Female genitalia (Fig. 3C). Apophysis anterioris and posterioris strong; ostium bursae well sclerotized. Ductus bursae short, broad, heavily sclerotized, conjunction with corpus wider, membranous. Corpus bursae long, round, with thin crests.

*Distribution.* China (New record), Europe, S. Caucasus (Sumbar) to Tibetan plateau and W. Manchuria.

*Remark.* It is known that larvae of the species feed on *Aster* sp. and *Artemisia* sp. (Ronkay et al., 1994).

***Xestia albonigra* (Kononenko, 1981) (Figs. 1E, 2E)**

*Amathes albonigra* Kononenko, 1981, Trudy zool. Inst. 92,



**Fig. 3.** Female genitalia. A, *Pangrapta marmorata* Staudinger; B, *P. griseola* Staudinger; C, *Cucullia amota* Alpheraky. Scale bars=2 mm (A-C).

figs. 1, 4 (TL: RFE, [ZI, St. Petersburg]).

*Amathes albonigra* ssp. *distincta* Kononenko, 1981: 93.

figs. 2, 5 (TL: RFE. S Sakhalin, [ZI, St. Petersburg]).

*Xestia albonigra*: Kononenko et al., 1998: 351; Kononenko, 2003: 552; Kononenko, 2005: 189.

**Material examined.** 1 ♂, Antu, Dixiasenlin, ca. 1,700 m, 29 VII 2000 (K.T. Park and H.L. Han); 1 ♂, Weidong, Fusong ca. 1,400 m, 5 VIII 2003 (H.L. Han and D.Y. Jin); 1 ♂, Antu, Anbei, ca. 740 m, 21 VII 2004 (H.L. Han and Z. Jin) 1 ♂, Antu, Erdaobaihe, Power station, ca. 800 m, 20 VII 2004 (H.L. Han and Z. Jin).

**Diagnosis** (Fig. 1E). Wingspan 35 mm. This species is similar to the following species, *speciosa* (Hübner) in the forewing pattern, but it is distinguished from the latter by the darker markings of the forewing with reniform stigmata divided by black spot medially and with thicker and more distinct lines, and hindwing with thicker postmedian line.

**Male genitalia** (Fig. 2E). Uncus stout, beak shaped. Valva gently concave beyond 2/3; process of costa thick, with weakly pointed apex; process of sacculus long, pointed apically. Aedeagus broad, slightly curved; carina strongly sclerotized, long; vesica membranous, curved, with a slender cornutus.

**Distribution.** China (New record), Korea (North), Russia (E. Siberia, RFE: Primorye, S. and C. Sikhote-Alin Range, S. Sakhalin).

***Xestia speciosa* (Hübner, [1813]) (Figs. 1F, 2F)**

*Noctua speciosa* Hübner, [1813], Samml. eur. Schmett. 2, pl. 104: 491 (TL: N Lappland, Sweden/Finland. [NHRM, Stockholm]).

*Haena arctica* Zetterstedt, [1839]: 9.

*Aplecta schoenherri* Guenée, 1852: 79, pl. 7: 7.

*Anomogyna aklavicensis* Benjamin, 1933: 56.

*Material examined.* 1♂, Antu, Dixiasenlin, ca. 1,700 m, 29 VII 2000 (K.T. Park and H.L. Han); 1♂, Longjing, ca. 290 m, 12 VIII 2001 (K.T. Park and H.L. Han); 1♂, Longjing, ca. 290 m, 23 VII 2004 (H.L. Han and Z. Jin) 1♂, Antu, Guangming Forestry centre, ca. 870 m, 18-19 VII 2004 (H.L. Han and Z. Jin).

*Diagnosis* (Fig. 1F). Wingspan 42 mm. This species is similar to the preceding species, but it is distinguished by the forewing with brownish markings rather than blackish and the hindwing with thinner postmedian line.

Male genitalia (Fig. 2F). Uncus slender, hook-shaped. Costa of valva slightly concave; process of sacculus stout, with triangular apex; process of costa thick, with sclerotized tip. Saccus large, cup-shaped. Aedeagus slender, nearly straight; carina weakly sclerotized; cornuti form a band with numerous slender spines, and the other numerous small spines; vesica curved.

*Distribution.* China (New record), Korea (North), Japan (Hokkaido, Honshu), N. Mongolia, Russia (Siberia, RFE, European part), NC Europe.

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