

危害云杉的卷蛾三新种

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摘要 青海云杉是甘肃省祁连山林区的主要树种,曾遭受多种害虫侵害,经作者研究发现其中有卷蛾三新种,本文对它们进行比较详尽的新种记述。

关键词 青海云杉;青海云杉黄卷蛾;云杉褐卷蛾;云杉副弧翅卷蛾

甘肃省祁连山林区主要由我国西北特有树种——青海云杉 (*Picea crassifolia*) 组成纯林 and 混交林。多年来不断遭受卷蛾、螟蛾等的危害,严重时引起林木整株或成片枯死。武威地区林木病虫害防治站余吉河、何长年等同志对它们进行了多年的调查研究。寄我一些标本,经鉴定发现有卷蛾三新种。模式标本存放在中国科学院动物研究所昆虫标本馆。

(一) 青海云杉黄卷蛾 *Archips crassifolianus* Liu, 新种(图1、2)

翅长♂ 9~10 mm、♀ 8~11 mm, 翅宽 3~4 mm, 下唇须长度是复眼直径的1.5倍。头、胸部背面黄褐色,腹部背面淡黄褐色。前翅淡黄褐色;雄蛾有棕褐色斑,有较明显的基斑、中带和端纹;雌蛾有红褐色条状斑,基斑、中带和端纹都不明显。雄蛾有狭窄的前缘褶。后翅:雄蛾呈灰褐色,雌蛾呈淡黄色。雄性外生殖器(图5):爪形突细长,末端不膨大;颚形突两臂细长,汇合后粗大,末端尖;抱器背基突呈扭带状;抱器瓣宽,抱器腹宽厚,近端部有一瘤状突;阳茎细长,略呈弧形,末端尖钩状,阳茎针两枚。雌性外生殖器(图10):产卵瓣肥大,略呈长直角三角形;交配孔宽大与导管端片构成长漏斗状,几丁质化强,管带不发达,近交配囊较明显;囊突一枚,呈镰刀状。

正模(♂):甘肃(武威、祁连山, 1987·Ⅶ·16, 余吉河)。配模(♀):甘肃(武威、祁连山, 1986·Ⅶ·24, 何长年)。副模(2♂♂、2♀♀):甘肃(武威、祁连山, 1987·Ⅶ, 余吉河、何长年)。

本种与云杉黄卷蛾(*A. oporanus*)、松黄卷蛾(*A. similis*)相近似,都有明显雌雄异形,但本种前翅色泽斑纹偏褐色,后两种偏红、紫色。本种雄性外生殖器抱器腹宽厚,近端部有一瘤状突,而云杉黄卷蛾和松黄卷蛾抱器腹狭窄,端部尖细。本种雌性外生殖器的交配孔与导管端片构成长漏斗状,而后两种构成杯状。

(二) 云杉褐卷蛾 *Pandemis piceacola* Liu, 新种(图3)

翅长♂ 8 mm、♀ 10 mm, 翅宽♂ 3 mm、♀ 4 mm, 下唇须长度是眼宽的2倍。触角和头部灰褐色,触角柄节无凹陷,鞭节有褐色环。前翅呈长方形,端部稍膨大,前缘基部有强烈弯曲,无前缘褶。前胸和前翅桔黄褐色,翅上无基斑、中带和端纹。后翅深灰褐色,缘毛

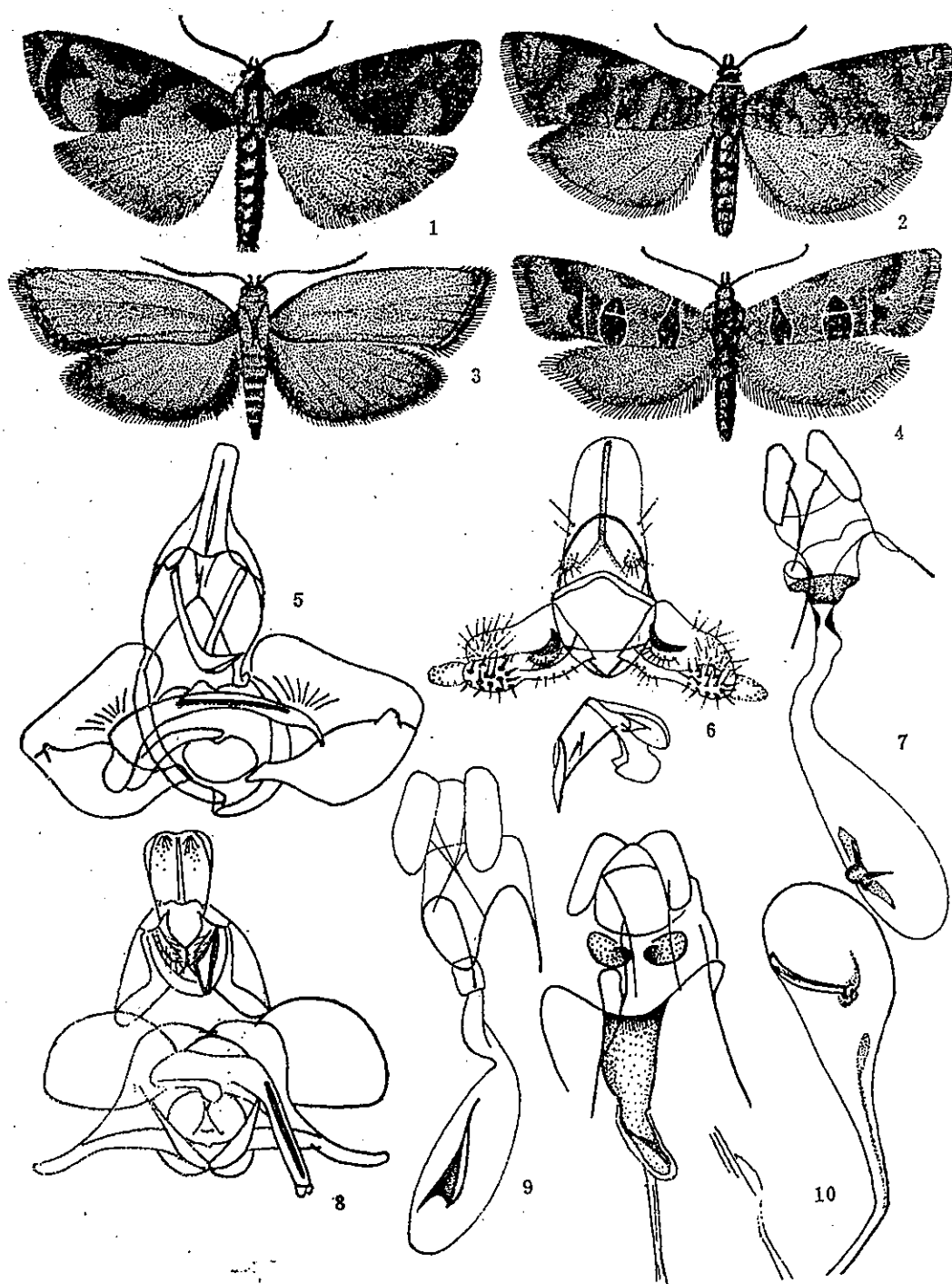


图1~10. 云杉三卷蛾新种形态图。1. 青海云杉黄卷蛾, 雄虫; 2. 青海云杉黄卷蛾, 雌虫; 3. 云杉褐卷蛾, 雄虫; 4. 云杉副弧翅卷蛾, 雄虫; 5. 青海云杉黄卷蛾雄性外生殖器; 6. 云杉副弧翅卷蛾雄性外生殖器; 7. 云杉褐卷蛾雌性外生殖器; 8. 云杉褐卷蛾雄性外生殖器; 9. 云杉副弧翅卷蛾雌性外生殖器; 10. 青海云杉黄卷蛾雌性外生殖器。

色淡。腹部黄褐色。雄性外生殖器(图 8)的爪形突宽，呈四方形；尾突长而下垂；颚形突两臂汇合后呈锥形；抱器背基突两侧宽；抱器瓣圆；抱器腹呈三角形，端部延长；阳茎有直角弯曲，阳茎针两枚。雌性外生殖器(图 7)的产卵瓣长；前、后表皮突接近等长；前、后阴片发达，呈漏斗状；导管端片明显；囊突一枚，呈短锥状，有发达球端和结疤。

正模(♀)：甘肃(古浪、昌岭山，1981·Ⅶ·5，余吉河)。配模(♂)：甘肃(武威、祁连山，1987·Ⅶ·20，何长年)。副模(♀)：地点、日期、采集人同配模。

本种与褐卷蛾属其它种类的明显区别表现在：前翅上无任何花纹，触角柄节上无凹陷，雄蛾前翅无前缘褶，雄性外生殖器抱器腹基部呈三角形。

(三) 云杉副弧翅卷蛾 *Paracroesia picevora* Liu, 新种(图 4)

翅长 6.5 mm，翅宽 2.0 mm，复眼黑色。下唇须长度是眼宽的 1.6 倍。头部和触角灰褐色，前胸节黄褐色。前翅淡黄褐色，有深黄褐黑色斑，各斑外围由白色鳞片镶嵌窄边。后翅灰褐色，缘毛浅灰褐色。雄性外生殖器(图 6)：背兜宽；尾突发达；肛管特别粗大，膜质；抱器背基突细长。抱器瓣短，基部宽，中间有月牙形瓣，端部圆钝；抱器腹几丁质化，端部略膨大、多刺；抱器端延长呈舌状，膜质。阳茎短粗，端部斜尖，阳茎针 2 枚。雌性外生殖器(图 9)：产卵瓣宽大；前、后表皮突接近等长；囊导管略几丁质化；囊突一枚，呈长条状纵褶。

正模(♂)：甘肃(天祝，1988·Ⅶ·28，余吉河)。配模(♀)：甘肃(天祝，1988·Ⅶ·30，何长年)。副模(3 ♂♂)：甘肃(天祝，1987·Ⅶ·19，1988·Ⅶ·30，1989·Ⅶ·13，余吉河、何长年)。

本种与冷杉副弧翅卷蛾(*P. abievora*)相近似，但两者在前翅花纹上和雄性外生殖器抱器瓣上以及雌性外生殖器囊突上都有明显区别。

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THREE NEW SPECIES OF TORTRICIDS ON *PICEA*

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Abstract In Mt. Qilian District, Gansu Province, pure and mixed forests are made up by the peculiar tree, *Picea crassifolia*, which are mainly distributed in the north-west of China. There are many unknown serious pests on

this tree, among which, three new species of tortricids have been described in this paper.

All the specimens, including the types of new species are kept in the Institute of Zoology, Academia Sinica.

1. *Archips crassifolianus* Liu, sp. nov.

Forewing: Male 9~10 mm, female 8~11 mm long; 3~4 mm wide. Labial palpus 1.5 times longer than diameter of the eye. Dorsal of head, thorax yellowish brown, abdomen lighter. Ground color of forewing pale yellowish brown; basal patch, median fascia and subapical blotch of male dark ochreous brown; female with reddish brown reticulation or strigulation. Costal fold of male narrow. Hindwing: male greyish brown; female pale yellow. Male genitalia: uncus and arm of gnathos long and slender; transtilla like a twisted transverse band; sacculus broad, near the end provided with a tumour-like protuberance. Aedeagus slender and long, slightly curved, hooked terminally; with 2 lancet-shaped cornuti. Female genitalia: Papilla analis stout, right angle shaped; ostium and antrum make up funnelshaped; only half portion of ductus bursae near bursae copulatrix with cestum; single signum large.

Holotype(♂): Gansu Province (Wuwei, Mt. Qilian, 16.V.1987, Yu Jihe). Allotype(♀): Gansu Province (Wuwei, Mt. Qilian, 24.V.1986, He Changnian). Paratypes (2♂♂, 2♀♀): Gansu Province (Wuwei, Mt. Qilian, V.1987, Yu Jihe & He Changnian).

This species is closely allied to *A. oporanus*, *A. similis* with antigeny, but differs from the latter in forewing pattern with brown color; sacculus of male genitalia broad and near the end with a tumour-like protuberance; ostium and antrum make up a funnel-shaped part in female genitalia.

2. *Pandemis piceacola* Liu, sp. nov.

Forewing: Male 8 mm, female 10 mm long; male 3 mm, female 4 mm wide. Labial palpus 2 times longer than diameter of the eye. Antenna and head greyish brown, without incisure of pedicellus. Forewing rectangular, costa strongly curved basally. Thorax and forewing orange brown, without basal patch, median fascia and subapical blotch. Hindwing dark greyish brown, with paler fringes. Male genitalia: Uncus broad, rectangular; socii elongate, drooping; transtilla with broad, lateral process; valve round; base of sacculus triangular, elongated terminally; aedeagus extremely straight in apical 2/3, with 2 cornuti. Female genitalia: Papilla analis long, anterior and posterior apophysis equal in length; funnel-shaped part of sterigma narrow; antrum distinct; single signum short, capitulum and sclerite well

developed.

Holotype(♀): Gansu Province (Gulang, Mt. Changling, 5·Ⅶ·1981, Yu Jihe). Allotype(♂): Gansu Province (Wuwei, Mt. Qilian, 20·Ⅶ·1987, He Changnian). Paratype(♀): locality, date and collector same as allotype.

Differences between this species and the other species of this genus are: forewing without any pattern, costal fold absent; antenna without incisure of pedicellus; base of sacculus triangular in male genitalia.

3. *Paracroesia picevora* Liu, sp. nov.

Forewing: 6.5 mm long, 2.0 mm wide. Eyes black. Labial pulpus 1.6 times longer than diameter of the eye. Head and antenna greyish brown, thorax yellowish brown. Forewing pale yellowish brown, with dark yellow, brown, black and white blotch. Hindwing greyish brown with paler fringes. Male genitalia: Tegumen broad; socii well developed; tuba analis very broad, membranous, except thin median stripe; transtilla long and slender; valve short, base broad, with crescent shaped ampulla; sacculus sclerotized, expanded terminally with numerous spines; cucullus prolonged, tongue-like, membranous. Aedeagus short, stout, pointed terminally, with 2 cornuti. Female genitalia: Papilla analis stout; anterior and posterior apophysis equal in length; ductus bursae slightly sclerotized; single signum plate-shaped, folded longitudinally.

Holotype(♂): Gansu Province (Tianzhu, 28·Ⅶ·1988, Yu Jihe). Allotype (♀): Gansu Province (Tianzhu, 30·Ⅶ·1988, He Changnian). Paratypes (3♂♂): Gansu Province (Tianzhu, 19·Ⅶ·1987, 30·Ⅶ·1988, 13·Ⅶ·1989, Yu Jihe & He Changnian).

This species is closely allied to *P. abievora*, but they are differed in pattern on forewing, valve on male genitalia and signum on female bursa copulatrix.

Key words *Picea crassifolia*; *Archips crassifolianus*; *Pandemis piceacola*; *Paracroesia picevora*