



A new species and two new combinations in the genus *Fibuloides* Kuznetsov (Lepidoptera: Tortricidae: Eucosmini) from Thailand

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Abstract

A new species of *Fibuloides* Kuznetsov (Lepidoptera: Tortricidae: Eucosmini), *Fibuloides khaonanensis* Pinkaew, is described and illustrated based on male specimens collected from evergreen forest in Khao Nan National Park, Nakhon Si Thammarat Province, Thailand. *Eucoenogenes bicucullus* Pinkaew and *Eucoenogenes vaneae* Pinkaew, described from male and female specimens collected from Thong Pha Phum National Park, Thailand, are transferred to *Fibuloides* (n. comb).

Key words: new species, new combination, Eucosmini, *Fibuloides*, *Eucoenogenes*

Fibuloides was described as monobasic by Kuznetsov (1997) to include *Fibuloides modificana* Kuznetsov from South Vietnam. Kuznetsov (1997) characterized the genus by the following features: costal fold narrow in male, forewing veins R_4 and R_5 stalked, R_3 base close to this stem, CuA_1 strongly curved and originating near M_3 base, hindwing with M_3 and CuA_1 stalked, and the valve extremely modified, with an unusually long, sclerotized processes originating from the apex of the sacculus. Horak (2006) noted that males in this genus usually have a notch at the base of the flagellum, modified fringe scales along anal margin or long hair pencils from base of anal margin, modified scaling dorsally as a transverse band on the abdomen, and weak lateral arms of the gnathos from below the middle of the tegumen with two sclerotized bands arising medially. Brown (2005) included one species, *F. modificana*, in the genus in the world catalogue of Tortricidae. Subsequently, Horak (2006) described *F. phycitipalpia* and *F. minuta* and transferred 17 species to the genus: *Acroclita corinthia* Meyrick, *A. macrosaris* Meyrick, *A. neaera* Meyrick, *A. nigrovenana* Kuznetsov, *A. thysanota* Meyrick, *Eucoenogenes aestuosa* Meyrick, *E. cyanopsis* Meyrick, *E. deltostoma* Diakonoff, *E. euphlebica* Kawabe, *E. japonica* Kawabe, *E. levatana* Kuznetsov, *E. pythonias* Meyrick, *E. segregana* Kuznetsov, *Epinotia munda* Diakonoff, *Hermenias metaspra* Diakonoff, *Peridaedala biuncana* Kuznetsov, and *P. crocoptila* Diakonoff. *Epinotia munda* previously was transferred to *Eucoenogenes* by Pinkaew *et al.* (2005) before it was transferred to *Fibuloides*. The purpose of this paper is to describe one new species of *Fibuloides* and transfer two species from *Eucoenogenes* to *Fibuloides*.

Materials and methods

Tortricidae were sampled in Khao Nan National Park at elevations from 90 m to 375 m in evergreen forest. All specimens were collected with a 20-watt blacklight operated with a car battery and suspended in front of a sheet. Latitude and longitude were recorded with a Magellen GPS 315. All specimens were pinned and spread

in the field. An Olympus SZ30 stereomicroscope with an ocular micrometer was used to examine and measure specimens. Forewing length was measured from the outer edge of the tegula at the wing base to the outermost edge of the fringe scales at the apex. A compound microscope was used for examining microtrichia, cornuti, and other characters of genitalia. The "Methuen Handbook of Colour" (Kornerup and Wanscher, 1983) was used as a standard for describing color of adults. Methods of genitalia preparation were adapted from Common (1990). Genitalia were illustrated on acetate drafting film with the use of a drawing tube. Terminology for wing venation and genitalic structures follows Horak (1984, 1991). Terminology for forewing patterns follows Brown and Powell (1991) as modified by Baixeras (2002). The following abbreviations are used for depositories: ANIC, Australian National Insect Collection, Canberra, Australia; and KKIC, Insect Collection, Kasetsart University, Kamphaeng Saen Campus, Nakhon Pathom, Thailand.

***Fibuloides bicucullus* (Pinkaw), new combination**

Eucoenogenes bicucullus Pinkaw, 2005: 873 figs. 2, 5, 9, 13

Diagnosis. The male has a wide, flat hindtibia with dense, setiform scales closely appressed to the medial and lateral surfaces. The anal margin of the hindwing bears a dark brown hairpencil basally and a row of long, yellowish-white hairs beyond the wing base. The male genitalia have the cucullus divided into dorsal and ventral lobes. In the female the seventh sternum is quadrate with microtrichia restricted to its posterolateral corners.

Specimens examined. Thailand: Kanchanaburi Province: Thong Pha Phum N.P., 14°41'35"N 98°24'19"E, 23 Dec 2001, (1♂, genitalia slide NP41), 14°41'17"N 98°24'02"E, 9 Jan 2002 (1♀ genitalia slide NP141), 14°41'34"N 98°24'06"E, 12 Jan 2002 (1♂, genitalia slide NP105), 14°41'40"N 98°24'15"E, 5 Feb 2002 (1♂, genitalia slide NP231), 14°41'41"N 98°24'12"E, 6 Feb 2002 (1♀, genitalia slide NP180), all collected by N. Pinkaw and deposited in KKIC.

Distribution. Thailand (Kanchanaburi Province).

***Fibuloides vaneae* (Pinkaw), new combination**

Eucoenogenes vaneae Pinkaw, 2005: 876 figs. 3, 10, 11, 14

Diagnosis. The sternum VIII in the male has long hair pencils arising from anterolateral pockets. The sacculus bears spiniform setae with distal scales having bifid apices and basal scales having trifid apices, and the valva is rotated at the neck to produce a ventrally facing cucullus. The uncus is narrowed medially.

Specimens examined. Thailand: Kanchanaburi Province: Thong Pha Phum N.P., 14°41'31"N 98°24'27"E, 13 May 2002, (1♂, genitalia slide NP452, 2♀), 14°41'43"N 98°24'34"E, 15 May 2002 (1♂, genitalia slide NP519, 3♀, genitalia slide NP463), 14°41'36"N 98°24'21"E, 6 Nov 2002 (1♂, genitalia slide NP393), all collected by N. Pinkaw and deposited in KKIC.

Distribution. Thailand (Kanchanaburi Province).

***Fibuloides khaonanensis* Pinkaw, new species**

(Figs. 1–3)

Diagnosis. This species is most similar to *F. cyanopsis* (Meyrick) in forewing pattern; the presence of a short, rounded cucullus; and the presence of transverse bands of modified scales on the abdomen. It differs from *F. cyanopsis* in forewing pattern, with the basal half of the wing with a patch formed from confluent basal, sub-

basal, and median fasciae, extending from the costa to the inner margin; the cucullus having a subtriangular lobe basoventrally; and abdominal tergites IV, V, VI, and VII with transverse bands of modified scales on their anterior margins.



FIGURE 1. *Fibuloides khaonanensis*, adult male.

Description. *Head:* Upper frons brownish orange to light brown, lower frons orange white; labial palpus with first segment yellowish white; second segment yellowish white to orange white with brown spots basally and dorsomedially, brown to dark brown spots ventroapically at 2/3 length and apically, apical segment brownish orange; vertex light brown to brown mixed with dark brown laterally; antenna with notch at basal subsegment of flagellum.

Thorax: Pronotal collar light brown to brown; tegula brown mixed with dark brown on basal 1/3; mesonotum pale orange, anterior half mixed with scattered light brown scales, posterior half brown to dark brown, posterior scale-tufts absent. Forewing (Fig. 1) length 6.6–6.7 mm in males (n=4); male costal fold absent; R_4 and R_5 stalked 1/5 length of R_3 ; termen slightly concave below apex; ground color light brown; costal strigulae 2–9 paired, pale yellow, and separated by dark brown, strigula 1 indistinct, termen with strigula forming pale yellow spot between R_5 and M_1 ; basal, subbasal, and median fascia indistinct, confluent, forming large patch extending from wing base to middle of wing, from costa at strigula 6 to inner margin, brown mixed with dark brown scales, metallic grayish blue when angled to light, distal margin of patch extending obliquely outward from costa to base of R_4 , angled, and extending inward to middle of inner margin; postmedian fascia extending obliquely outward from costa between strigulae 6 and 7 to R_5 near outer margin, dark brown mixed with brownish orange, preterminal fascia extending obliquely outward from costa between strigulae 8 and 9 to R_5 near outer margin, strigulae 5 and 6 with silvery striae becoming confluent and bordering postmedian fascia to R_5 , strigula 7 with silvery striae extending obliquely to R_5 , strigulae 8 and 9 with silvery striae reduced to small spots, pretornal subtriangular spot extending from inner margin to CuA_1 (M_3 in some specimens), dark brown, ocellar region with dark brown irregular patch extending from R_5 to CuA_1 . Underside light brown, strigulae on costa and termen yellowish gray. Hindwing brown dorsally, light brown ventrally, anal margin with long scale-tufts, light brown.

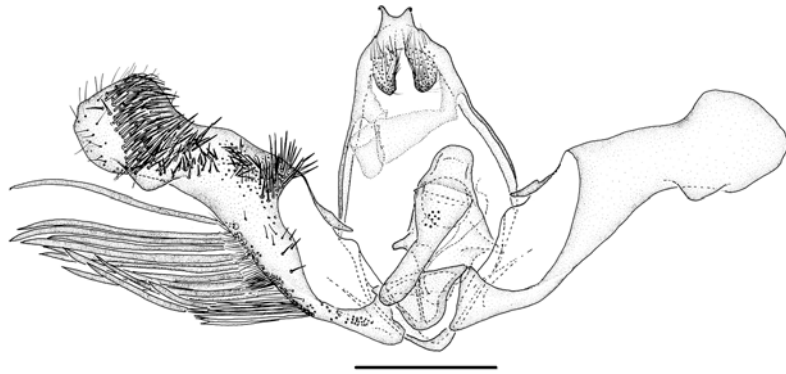


FIGURE 2. *Fibuloides khaonanensis*, male genitalia. Scale bar: 0.5 mm.

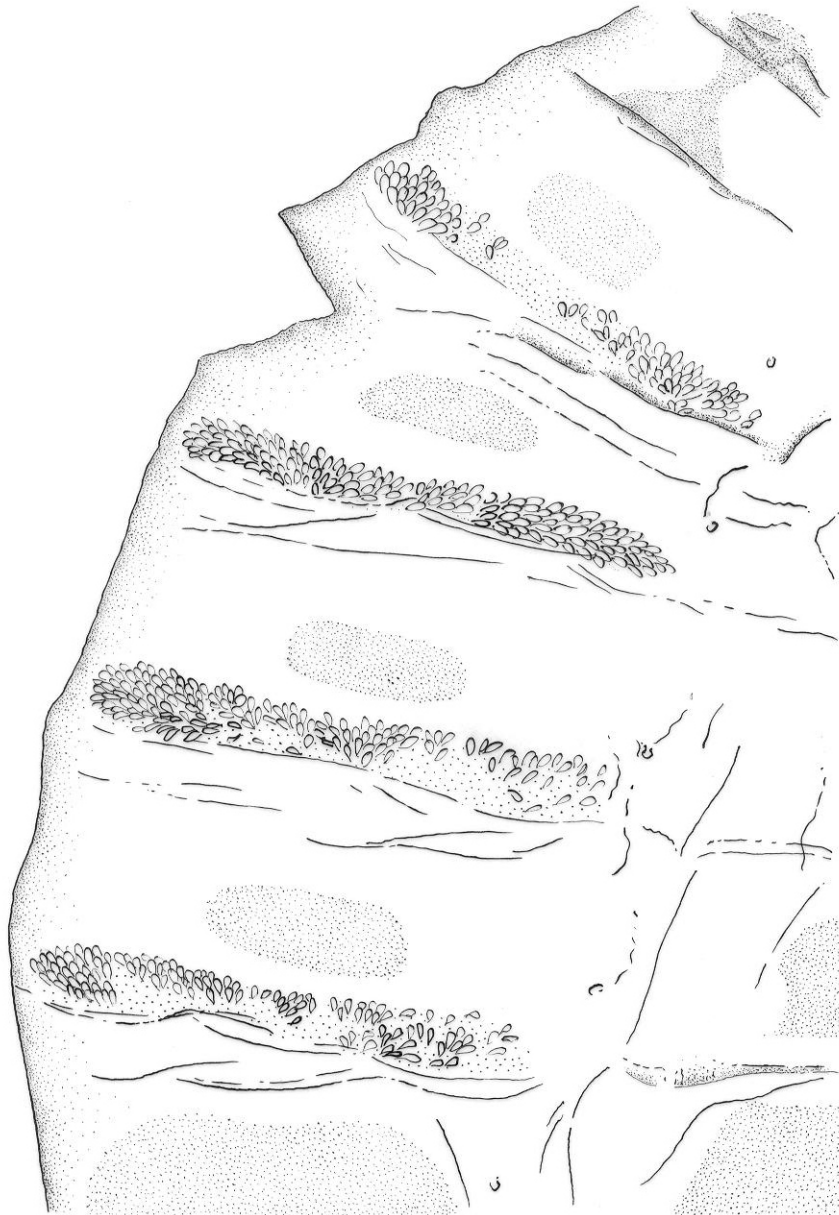


FIGURE 3. *Fibuloides khaonanensis*, dorsal view of male abdominal segment with scale patches. Scale bar: 0.5 mm.

Abdomen: Tergum IV, V, VI, and VII anteriorly with transverse patches of specialized scales (Fig. 3). Male genitalia (Fig. 2) with tegumen narrow basally, swollen dorsally, with group of dense setae posteriorly, moderately setose along ventral 2/3; uncus small and short, bifid, apices pointed; socii large, triangular, apically rounded, arising from base of uncus, pendant to 1/4 of tegumen length, moderately setose; gnathos arising from near tegumen ca. at half length, forming a ribbonlike band, with two sclerotized bands arising medially; anellus closely surrounding basal 1/3 of aedeagus, cuplike dorsally; aedeagus moderately long, basal half enlarged, with 9 deciduous cornuti; juxta triangular, truncate ventrally; valva with large basal excavation, moderately setose from base to middle of sacculus, medially with strip of dense, large, flat setae, apically pointed, with strip of larger, flat setae, apically pointed, mixed with strip of dense, short setae along outer ventral margin; dorsally with dense spines from basal opening to cucullus, neck slightly excavated ventrally; cucullus short, rather round, densely setose except apicoventral 1/3, basoventrally with moderate subtriangular lobe protruding ventrally close to neck (n = 4).

Holotype. Male. Thailand: Nakhon Si Thammarat Province: Khao Nan N.P., 08°46'19"N 99°48'12"E, 23 Jun 2006, N. Pinkaew [specimens no.] np1625; male [genitalia slide] NP861. Deposited in ANIC.

Paratypes. Thailand: Nakhon Si Thammarat Province: Khao Nan N.P., 08°46'19"N 99°48'12"E, 13 May 2006 (1♂, genitalia slide NP891), 23 Jun 2006, (1♂, genitalia slide NP892), 08°46'14"N 99°48'10"E, 23 Jun 2006, (1♂, genitalia slide NP756), all collected by N. Pinkaew. Deposited in KKIC.

Etymology. The specific epithet refers to Khao Nan National Park.

Distribution. Thailand (Nakhon Si Thammarat Prov.).

Remarks. This species was collected during the dry summer season in evergreen forest at 375 m.

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