NINE NEW SPECIES AND TWO NEW RECORDS OF THE GENUS PERIACMA MEYRICK FROM CHINA*
(LEPIDOPTERA: OECOPHORIDAE)

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Abstract  This paper deals with eleven species and subspecies of the genus Periacma Meyrick from China. Among them, nine species, i.e. P. quijingensis sp. nov., P. abscacula sp. nov., P. novella sp. nov., P. sacculidens sp. nov., P. tridentata sp. nov., P. acrucenta sp. nov., P. equitovalvata sp. nov., P. acutignathia sp. nov. and P. sinica sp. nov. are described as new to science. One subspecies, P. iodema vietnamica Lvoovsky and one species, P. isanensis Moriuti, Saito et Lewvanich are first reported from the country. The genital structures are illustrated.

Key words  Lepidoptera, Oecophoridae, Periacma, new species, new record, China.

The species of the genus Periacma Meyrick are mainly distributed in the Oriental and Palearctic Regions, with 60 species known worldwide. Among them, twenty-four species from India, four from Burma and five from Taiwan of China were reported by Meyrick from 1894 to 1939, fourteen were recorded from Thailand by Moriuti, Saito & Lewvanich (1985, 1987, 1989), one from Vietnam and one from Korea were identified by Lvoovsky (1988, 1990), three were recognized from Nepal by Ueda & Moriuti (1996) and eight were reported from China by Wang & Zheng (1995, 1996). Up to now, seventeen species of the genus Periacma Meyrick have been recorded in China. The present paper describes nine new species of the genus. In addition, one subspecies and one species are newly recorded from this country. The type specimens are deposited in the Department of Biology, Nankai University, Tianjin except the indicated specimens that are deposited in the Institute of Zoology, Chinese Academy of Sciences (IZAS), Beijing.

1 Periacma quijingensis sp. nov.  (Figs. 1-2)

Wing expanse 15.0-16.5 mm. Body pale yellow. In male, labial palpus with second segment black on outer side of half and inner side of distal 1/6, apex pointed; in female, second segment about three times as long as third, outer side of distal half gradually brown, third segment thin and acute, with dense brown scales. Antenna with flagellum ringed brown. Thorax, tegula and forewing with scattered brown scales. Maculations on forewing brown: long arched blotch extending from base of posterior margin along fold reaching near apical end of fold, cell with a spot at 2/3, broad fascia extending from 2/3 of costa to 2/3 of posterior margin, joined with apical fascia at tornus; cilia pale yellow. Hindwing and cilia greyish. Tibiae of legs with brown scales, tarsi with brown spots.

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Male genitalia (Fig. 1). Uncus with basal half narrow, somewhat parallel laterally, distal half expanded, caudal margin blunt, with two small teeth medially. Gnathos narrow basally, widened toward apex, anterior margin arched, with minute teeth; lateral arm shorter, about 1/3 as long as gnathos. Valva narrow basally, wider distally, densely setose, apex rounded; costa arched at middle; dorso-proximal process claviform, 1/3 as long as valva, with long setae. Sacculus large triangular in shape, distal process small and rounded apically, with a small process near apex; a sclerotized subtriangular plate edged with small teeth at middle of ventral margin. Aedeagus short, slowly thickened from base to middle portion, then suddenly thinned to apex, distal 1/4 toothed laterally, with large spiniform process at middle.

Figs. 1-2 *Periacma qujingensis* sp. nov.
1. male genitalia 2. female genitalia

Female genitalia (Fig. 2). Apophyses posterior about three times as long as apophyses anterior. Lamella postvaginalis sclerotized, with dense spines and warts, posterior margin blunt, sparsely with long setae, anterior margin heavily sclerotized. Lamella antevaginalis somewhat trapezoid, sclerotized. Ductus bursae, membranous except for basal 1/4 sclerotized. Corpus bursae elliptical, membranous, nearly as long as ductus bursae. Signum one, basal portion rounded with small teeth and distal portion strong spiniform.

Holotype ♂, Qujing County (25.5°N, 103.8°E), Yunnan Province, 9 Jul. 1982, genitalia slide No. W98384. Paratypes: 1 ♂, 1 ♀, same data as holotype; 1 ♂, 1 ♀, Jinping County (22.7°N, 103.2°E), Yunnan Province, 22 May 1956, leg. HUANG Ke-Ren (deposited in IZAS).

Diagnosis. This new species is related to *P. ziyangensis* Wang et Zheng, but differs from the latter in the following characters: in male genitalia, sacculus with a sclerotized plate at middle
of ventral margin and a small process near distal process, distal 1/4 of aedeagus with teeth at lateral margins; in female genitalia, signum present.

2 Periacma absaculla sp. nov. (Figs. 3-4)

Wing expanse 20-25 mm. Head yellow, posterior portion with tufted scales. Labial palpus yellow, tinged brown, male second segment pointed distally, female third segment about 1/2 as long as second, acute distally. Antenna with scape pale yellow on ventral surface, brown on dorsal surface, flagellum yellowish brown. Thorax yellow, with brown spot posteriory. Tegula and forewing yellow, with scattered brown scales. Forewing with costa brown at base, posterior margin basally with a large brown blotch; brown spot at middle of cell and 2/3 of fold respectively, the former larger; broad brown fascia extending from about costal 2/3 to tornus, where joined with brown apical fascia; cilia yellowish, greyish brown at tornus. Hindwing and cilia greyish brown. Legs yellowish white, fore tibia and tarsus with brown spots, mid tibia grey, tarsus with brown spots; hind tibia covered with long hairs, tarsus yellowish brown. Abdomen greyish white, somewhat yellowish at apex.

Male genitalia (Fig. 3). Uncus wide at base, greatly contracted at middle, distal half expanded, somewhat rhomboid, apex rounded. Gnathos gradually widened from base to apex, anterior margin blunt, densely with short strong spines. Valva narrower in basal 1/3, distal 2/3 nearly the same in width, apically rounded; costa gentle; dorso-proximal process short, dilated distally. Sacculus irregularly rectangular, wider than valva and distinctly separated from valva, ventral margin with small teeth in distal 1/3, apex truncated. Aedeagus simple, basal 1/3 narrow, with a small tooth at one side distally; cornutus absent.

Female genitalia (Fig. 4). Apophyses posterior 2.5 times of anterior apophyses in length. Lamella postvaginalis more sclerotized, posterior margin deeply concave at middle, with long se-
tae. Lamella antevaginalis sclerotized, laterally forming two large plates, with rounded apex. Ductus bursae membranous, long and thin. Corpus bursae membranous, elliptical in shape, about same length as ductus bursae. Signum rounded, edged with teeth, somewhat gear-like.


Diagnosis. The new species is closely allied to P. thamthanlotensis Moriuti, Saito et Lewvanich, but can be separated from the latter by uncus somewhat rhomboid distally, sacculus truncated at apex and without distal process, valva apically rounded in male genitalia; signum somewhat gear-like in female genitalia.

3 Periacma novella sp. nov. (Figs. 5-6)

Wing expanse 18.0 mm. Body light yellow. Second segment of labial palpus densely with brown scales on ventral surface, distally pointed. Antenna with scape brown dorsally, flagellum ringed brown. Thorax, tegula and forewing with scattered brown scales. Costa of forewing with a brown spot at base, brown fascia from costal 2/3 reaching tornus and joined with irregular apical fascia at tornus, brown spot at middle of cell and near end of fold respectively, brown blotch from base of posterior margin obliquely upward and crossing fold at basal 1/4, then extending along fold to 1/2 of fold; apex pointed; cilia dark grey at tornus. Hindwing and cilia pale greyish brown. Legs greyish white, somewhat yellowish, tarsi with black spots.

Figs. 5-6 Periacma novella sp. nov.
5. male genitalia  6. female genitalia
Male genitalia (Fig. 5). Uncus narrow at base, expanded distally, caudal margin with two small teeth at middle. Gnathos narrow basally, widened toward apex, anterior margin somewhat sinuated, slightly concaved at middle, with sparse spines; lateral arm shorter than 1/2 length of gnathos. Valva with basal 2/5 narrow, distal 3/5 expanded, with long hairs; costa with a small tooth-like process at basal 1/5; dorso-proximal process dilated distally, setose. Sacculus sclerotized, with two distal processes: dorsal process longer, ventral process shorter and rounded. Aedeagus short, expanded medially, with teeth at one distal side.

Female genitalia (Fig. 6). Papilla analis large and broad. Lamella postvaginalis sclerotized, granular, somewhat concaved at middle. Lamella antevaginalis heavily sclerotized, cestiform. Ductus bursae short and thin, membranous. Corpus bursae membranous, irregularly shaped, longer than ductus bursae. Signum small, large spine-like, with small teeth.


Diagnosis. This species is related to P. siamensis Moriuti, Saito et Lewvanich, but can be differentiated from the latter by forewing with distinct apical fascia; uncus with paired teeth at posterior margin, gnathos with sparse spines and sacculus with distal processes in male genitalia; lamella antevaginalis and signum different in shape from those of the latter in female genitalia.

4 Periacma sacculidens sp. nov. (Figs. 7-8)

Wing expanse 15. 5-16. 0 mm. Body yellow. Labial palpus with second segment tinged brown scales and pointed distally in male; in female second segment thick and with brown scales near distal, third segment about 1/2 length of second, thin and pointed. Antenna with scape light yellow on ventral surface, brown on dorsal surface, flagellum with brown rings. Thorax, tegula and forewing densely scattered with brown scales. Costa of forewing brown at base, brown fascia from 2/3 of costa stretching to tornus, longitudinally irregular brown band near upper margin of cell, curved band arising from base of posterior margin along fold extending to near posterior margin at 1/2, dense brown scales in middle portion of posterior margin forming obscure maculation; apex with a large brown blotch; cilia pale yellow, mixed with brown. Hindwing and cilia dark grey. Legs pale yellow, with brown spots. Abdomen yellowish white, brown at apex.

Male genitalia (Fig. 7). Uncus narrow at base, roundly expanded in distal portion, caudal margin with two teeth at middle. Gnathos with basal half narrowed, distal half greatly expanded, protruded at both sides, anterior margin gently arched, sparsely with minute teeth; lateral arm short. Valva narrow, apex rounded; costa curved near middle, with small tooth at basal 1/3; dorso-proximal process long, capitate, setose. Sacculus somewhat subtriangular, distal process greatly curved and pointed upward, ventral margin irregularly dentated dorsally. Saccus short and broad, with anterior margin bluntly rounded. Aedeagus long, expanded and with minute spines at middle, with two pointed processes at apex, one long and one short.

Female genitalia (Fig. 8). Papilla analis nearly triangular. Lamella postvaginalis sclerotized, with warts, posterior margin concaved at middle, with long setae and minute spines. Lamella antevaginalis heavily sclerotized, caudally produced into a pair of large triangular processes, anterior margin deeply concaved. Ductus bursae short and thick, membranous, with warts. Corpus bursae membranous, elliptical, granular, nearly as long as ductus bursae. Signum small, basal portion somewhat circular, edged with teeth, distal portion large spiniform, heavily sclerotized.
Figs. 7-8  *Periacma sacculidens* sp. nov.

7. male genitalia  8. female genitalia

Holotype♂, Daguan County (27.7°N, 103.9°E), Yunnan Province, alt. 1250 m, 5 Jul. 1982, leg. LUO Zheng-Jun, genitalia slide No. W98399. Paratypes: 8 ♂♀, 14 ♀♀, same data as holotype (2 ♂♂, 2 ♀♀ deposited in IZAS).

Diagnosis. The new species is related to *P. binchuanensis* Wang et Zheng, but differs from the latter in male genitalia: uncus with two teeth at caudal margin, process at 1/3 of costa short, tooth-like, sacculus dentated dorsally and aedeagus with two spine-form processes.

5  *Periacma tridentata* sp. nov.  (Figs. 9-10)

Wing expanse 15-18 mm. Head yellow. Labial palpus pale yellow, male second segment mixed with brown scales, with brown spot near distal end; female second segment brown at end, third segment thin and pointed. Antenna with scape greyish white on ventral surface, brown on dorsal surface, flagellum alternately yellow and brown. Thorax, tegula and forewing yellow, mixed with brown scales. Forewing lanceolate, apex roundly pointed; costa arched, with a brown spot at base; brown fascia from distal 1/3 of costa reaching posterior margin, brown band from base of posterior margin upward to fold, then along fold bending to near posterior margin at 2/5, brown apical fascia stretching along termen; cilia yellow, brown at tornus. Hindwing and cilia greyish brown. Legs pale yellow, tinged brown scales. Abdomen light yellow.

Male genitalia (Fig. 9). Uncus greatly elongate, narrow, somewhat clavated, apex rounded. Gnathos with ventral plate narrow, anterior margin slightly arched inward, posterior margin with a series of strong spines; lateral arm broad, about 2/3 as long as uncus. Valva narrow near base, distal 2/5 broadened, apex rounded; costa gently arched; dorso-proximal process short and small, dilated distally. Sacculus short and quite broad, rectangular, distal process sclerotized, with tooth-like processes, apex of ventral margin with round process. Aedeagus thin in basal 2/5, thickened from middle to 3/5, with three pointed apical processes heavily sclerotized.

Female genitalia (Fig. 10). Apophyses anterior about 1/4 as long as posterior apophyses.
Lamella postvaginalis slightly concaved at posterior margin, lateral angle rounded. Lamella antevaginalis heavily sclerotized, both sides forming subtriangular processes. Ductus bursae membraneous, wide and short, not obviously separated from corpus bursae. Corpus bursae membranous, long elliptical, longer than ductus bursae. Signum small, rounded at base, greatly pointed at distal.

Holotype ♂, Mt. Qingcheng(30.9°N, 103.5°E), Sichuan-Province, 29 May 1979, genitalia slide No. W98363. Paratypes: 4 ♂ ♂, 2 ♀ ♀, 22 May-3 Jun. 1979, same locality as holotype (1 ♂ , 1 ♀ deposited in IZAS).

Diagnosis. This new species resembles *P. zhoushiensis* in appearance, but can be easily separated from the latter by male genitalia: uncus elongate, gnathos with anterior margin of ventral plate slightly arched inward, sacculus somewhat rectangular and saccus having three pointed apical processes.

6 *Periacma acruncata* sp. nov. (Fig. 11)

Male with wing expanse 19.0 mm. Body pale yellow. Labial palpus mixed with brown scales, distally pointed. Antenna with scape brown on dorsal surface, flagellum with brown rings. Thorax, tegula and forewing with scattered brown scales. Forewing with costa gently arched, apex protruded; small brown spot at middle of cell, irregular brown blotch from end of cell extending to before tornus; cilia mixed with brown. Hindwing and cilia grey. Fore and mid legs with brown scales and spots. Hind leg greyish white, tinged brown.

Male genitalia (Fig. 11). Uncus narrow at base, expanded distally, with pointed process at apex. Gnathos large and broad, somewhat squarely shaped. Valva long, base slightly wider than distal portion, apex roundly pointed; dorso-proximal process long clavate, with long setae. Sacculus large and broad, nearly as long as 3/4 of valva, without distal process, distal 2/3 of dorsal margin somewhat sinuated, ventral margin straight, apex rounded. Juxta semicircular, weakly sclerotized, caudal margin laterally protruded, forming heavily sclerotized processes. Saccus sub-
triangular. Aedeagus somewhat thin at base, widened toward middle, distal portion separated into two branches: right branch short and broad, left branch slender and strongly curved, both edged with teeth, distally pointed.

Female. Unknown.

Holotype  ♂, Mt. Qingcheng (30.9°N, 103.5°E), Sichuan Province, 11 Jul. 1980, genitalia slide No. W98370.

Diagnosis. This new species is similar to *P. wongsiirii* Moriuti, Saito et Lewvanich superficially, but can be differentiated from the latter by the characters of male genitalia: uncus with a small pointed caudal process, gnathos somewhat squarely shaped, valva narrowed toward distal, aedeagus distally divided into two branches and edged with teeth.

![Fig. 11-12 Male genitalia](image)

11. *Periacma acrionota* sp. nov. 12. *Periacma equivalvia* sp. nov.

7 *Periacma equivalvia* sp. nov. (Fig. 12)

Male with wing expanse 15.0 mm. Body light yellow. Labial palpus dotted with brown scales on outer surface. Antenna with scape brown dorsally, flagellum alternately yellow and brown. Thorax, tegula and forewing scattered with brown scales, large brown blotch set at middle of thorax. Forewing with a brown spot at basal costa, curved brown band from base of posterior margin along fold reaching near posterior margin at 2/5; cell with a brown spot medially; broad, distally widened brown fascia from costal 2/3 reaching posterior margin, irregular brown blotch from apex along termen to tornus; cilia yellow, dark grey at tornus. Hindwing and cilia greyish brown. Legs yellowish white, tibiae and tarsi with brown spots.

Male genitalia (Fig. 12). Uncus wide at base, narrowed at middle, distal portion expanded, somewhat long elliptical, apex rounded. Gnathos nearly annular, with small teeth in anterior portion. Valva narrow, nearly same width from base to apex, distally haired. Sacculus large and broad, with thin process at base of ventral margin, distal process long, with slightly dilated apex. Aedeagus thin basally, gradually thickened to middle, distal portion produced into two processes, densely with strong spines.

Female. Unknown.

Holotype ♂, Mt. Jiulian (24.6°N, 114.5°E), Jiangxi Province, 24 May 1977, genitalia slide No. 91125.

Diagnosis. The new species is similar to *P. anghangensis* Moriuti, Saito et Lewvanich, but
can be differentiated from the latter by male genitalia: uncus not bulbously dilated distally, gnathos anteriorly with small teeth but without short spines, distal process of sacculus slightly dilated apically.

8 *Periacma sinica* sp. nov. (Figs. 13-14)

Wing expance 16.0-19.5 mm. Head yellow. Labial palpus yellow, with brown scales, male basal segment relatively long, about 1/2 length of second segment; female third segment thin and pointed, half as long as second. Antenna pale yellow on ventral surface, brown on dorsal surface. Thorax, tegula and forewing yellow. Forewing with scattered brown scales, costa and posterior margin with a brown blotch at base respectively, cell with a brown spot medially; oblique brown band from basal 1/3 of fold reaching end of fold; broad brown fascia from distal 1/3 of costa extending to tornus, arched brown band from apex along termen to tornus; cilia yellow, brown at tornus. Hindwing and cilia grey. Legs greyish white, tarsi with brown spots.

Male genitalia (Fig. 13). Basal 2/3 of uncus narrow, nearly parallel laterally, distal 1/3 expanded and rounded. Gnathos narrow basally, distal gradually widened, anterior margin medially protruded forward, with dense spines. Basal 1/3 of valva narrower than distal portion, distal 2/3 gradually widened and haired, apex rounded; dorso-proximal process thin, long clavate, about 2/3 as long as uncus. Sacculus with broad base, almost square, distal process rather long, apex blunt, ventral margin with apex-rounded process. Aedeagus short, expanded medi ally, with or without teeth in distal portion; apex pointed and spiniform.

Female genitalia (Fig. 14). Apophyses posterior 2.5 times as long as apophyses anterior. Lamella postvaginalis sclerotized, densely with minute spines, posterior margin concaved at middle. Lamella antevaginalis sclerotized, both sides protruded. Ductus bursae broad and short,
membranous. Corpus bursae longer than ductus bursae, membranous. Signum with small teeth, distal portion strong spiniform.


Diagnosis. This new species is similar to P. iodesma Meyrick superficially, but can be separated from the latter by male genitalia; distal sucular process without dorsal process near base, aedeagus laterally lacking process and distally without teeth at one side.

9 Periacma acutignatha sp. nov. (Figs. 15-16)

Wing expanse 12.5-14.5 mm. Head orange yellow, somewhat ochreous. Labial palpus orange yellow; male basal segment slightly whitish, second segment extremely long, longitudinally with a line of black scales on outer surface, distally pointed; female second segment two times as long as third segment, third segment pointed at distal end. Antenna dark brown on dorsal surface, whitish yellow on ventral surface. Thorax, tegula and forewing orange yellow, slightly ochreous, densely covered with black scales. Costa of forewing gently arched; apex roundly pointed, with large black blotch; longitudinal black band from base of costa extending to middle of cell, then divided into two narrow parallel bands reaching near apical end of cell, broad black band from basal 1/6 of fold stretching to near end of fold, posterior margin with a large irregular black blotch at base and an indistinct elongate black spot at middle; cilia same colour as forewing. Hindwing and cilia greyish brown. Legs greyish white, fore tarsus ochreous yellow, distal black. Mid tibia with black spot at base and near distal, tarsus black, with orange yellow spots. Dorsal surface of hind tibia and tarsus mixed with greyish brown scales or hairs.

Male genitalia (Fig. 15). Uncus large, nearly parallel laterally, apex bluntly rounded. Gnathos long triangular in shape, as long as uncus, distally contracted and pointed. Valva long and narrow, with narrow, strongly haired, sclerotized band near base; costa gently arched, mediately protruded; dorso-proximal process small, claviform, setose. Sacculus broad, about half length of valva, distal half gradually narrowed, apex blunt, lacking distal process. Saccus large and broad, anteriorly rounded, nearly as long as uncus. Aedeagus developed, distal 1/3 divided into two branches: one branch longer, greatly curved, with processes at base and near distal; another branch shorter, with two pointed processes at one side and several tooth-like processes in inner side.

Female genitalia (Fig. 16). Apophyses posterior three times as long as apophyses anterior. Lamella postvaginalis and lamella antevaginalis heavily sclerotized, with minute spines and warts. Lamella antevaginalis with posterior margin strongly sclerotized marginally, concaved at middle. Ostium bursae much developed. Ductus bursae thick, basal 1/3 contracted and sclerotized, with short spines, anteriorly membranous. Corpus bursae membranous, somewhat rounded, with warts. Signum one, irregularly elliptical in shape, with two large spines and several short teeth.

Holotype ♂, Neixiang County (33.0°N, 111.8°E), Henan Province, alt. 650 m, 12 Jul. 1998, leg. LI Hou-Hun, genitalia slide No. W98236. Paratypes: 4 ♂, 3 ♀, 10-12 Jul.
Figs. 15-16  *Periacma acutignatha* sp. nov.
15. male genitalia  16. female genitalia

1998, other same data as holotype (1♂, 1♀ deposited in IZAS).

Diagnosis. This new species is closely allied to *P. erawanensis* Moriuti, Saito et Lewvanich, but its maculations on the upper surface of forewing and sacculus in male genitalia are different in shape from those of the latter. Aedeagus has several sclerotized teeth distally.

10 *Periacma iodesma vietnamica* Lvovsky, 1988

New record to China.
Material examined. 1♂, Mengla County (21.4°N, 101.5°E), Yunnan Province, 20 Apr. 1982.
Distribution. China; Yunnan; Vietnam.

11 *Periacma isanensis* Moriuti, Saito et Lewvanich, 1989

New record to China.
Material examined. 3♀♀, Mengla County (21.4°N, 101.5°E), Yunnan Province, 22 May 1962.
Distribution. China; Yunnan; Thailand.

REFERENCES

中国带织蛾属九新种和二新纪录种
（鳞翅目：织蛾科）

王淑霞 李后健

记述了中国带织蛾属 Periacma Meyrick 9 新种，即曲翅带织蛾 P. quyigensis sp. nov., 离腹带织蛾 P. absaccula sp. nov., 新带织蛾 P. novella sp. nov., 尖腹带织蛾 P. caclicidens sp. nov., 三带带织蛾 P. tridentata sp. nov., 尖爪带织蛾 P. acriniata sp. nov., 等新带织蛾 P. equavisuata sp. nov., 等新带织蛾 P. acritignatha sp. nov., 中华带织蛾 P. sinica sp. nov.。报告了中国 1 新纪录亚种，越南带织蛾 P. iseamsa vietnamica Lvoysky, 1988 和 1 新纪录种伊带织蛾 P. isanensis Moriuti, Saito et Lewphanich, 1989。提供了新种的雌雄外生殖器特征图。模式标本（除指明外）保存在南开大学生物系。

关键词 鳞翅目，织蛾科，带织蛾属，新种，新纪录种，中国。

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