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The genus *Nyctiophylax* Brauer in China (Trichoptera, Polycentropodidae)

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Abstract

Currently, 8 species of the genus *Nyctiophylax* Brauer are known from China. Examination of material collected from Guangdong, Guangxi, Jiangxi and Sichuan Provinces during 2004–2005 has revealed 4 new species and 2 new records of this genus, bringing the number of Chinese *Nyctiophylax* species to 14. Newly described species include: *Nyctiophylax* (*Paranyctiophylax*) *crinalis* **n. sp.**, *N.* (*P.*) *dactylatus* **n. sp.**, *N.* (*P.*) *orbicularis* **n. sp.**, and *N.* (*P.*) *macrorrhinus* **n. sp.** *Nyctiophylax* (*Paranyctiophylax*) *sagax* Mey and *N.* (*N.*) *amphonion* Malicky & Chantaramongkol are newly recorded for the Chinese fauna, which are re-illustrated and re-described for clear comparisons. The additional collection sites for the previously described species are provided.

Key words: new species, new records, *Paranyctiophylax*, Oriental Biogeographic Region, Palearctic Biogeographic Region

Introduction

The genus *Nyctiophylax* was established by Brauer (1865) based on the species *Nyctiophylax sinensis* from China (Shang-hai, type species by monotypy). This genus includes 108 extant species and 23 fossil species worldwide, with extant species occurring in the Oriental (59 spp.), Australasian (14 spp.), Afrotropical (12 spp.), Nearctic (10 spp.), East Palearctic (8 spp.), and Neotropical (5 spp.) Biogeographic Regions (Morse 2014). Currently, the Chinese species of the genus *Nyctiophylax* includes only 8 species (Brauer 1865; Hsu & Chen 1996; Yang *et al.* 1997; Morse *et. al.* 2012; Malicky 2012). Examination of *Nyctiophylax* specimens from expeditions in Guangdong, Guang-xi, Jiang-xi and Si-chuan during 2004–2005, revealed 4 new species and 2 new records from China, bringing the total to 14 Chinese species of *Nyctiophylax*. Of these, 12 species are endemic to the Oriental Biogeographic Region or the Oriental–Palearctic Boundary Region of China, 2 species are more widely distributed in the Oriental Region of China and outside of China.

Material and methods

Adults were collected with a 15-watt ultraviolet light unless otherwise indicated, powered by a sealed rechargeable 12-volt battery. Traps were placed near the edges of streams for 2–3 hours beginning at dusk. The caddisfly material so collected was killed in 80% ethyl alcohol. The abdomens of males were cleared with a heated KOH solution to reveal internal and other hidden structures. Each dissected abdomen was preserved in 80% glycerin for preparing illustrations. Pencil templates were drawn on white paper through use of an ocular grid in a Nikon SMZ645 dissecting microscope. These pencil templates were re-drawn on transparent paper in Black Archival Ink with various sizes of pens.

In the descriptions, colors are those observed for the specimens in alcohol. The morphological terms for male genitalia follow Morse *et al.* (2012).

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All the specimens are preserved in 80% alcohol and, except as noted, have been deposited in the Nanjing Agricultural University Insect Collection (NAU).

***Nyctiophylax* (*Paranyctiophylax*) *crinalis* n. sp.**
(Fig. 1)

Diagnosis. This new species is very similar to *N. suthepensis* Malicky & Chantaramongkol 1993 from Thailand. It differs in that *Nyctiophylax* (*Paranyctiophylax*) *crinalis* **n. sp.** has the inferior appendages with their inner margins each bearing a row of long strong setae in ventral view, its basomesal setose lobe is semicircular in both lateral and ventral views and in ventral view this lobe is strongly sclerotized and broader than its main body. On the other hand, *N. suthepensis* has the inner margin of each inferior appendage without a row of long strong setae and the basomesal setose lobe is oval in ventral view and narrower than its main body. Another difference between the two species is that the phallus of the new species has a pair of long, needle-like parameres, at least as long as the phallus, and the phallicata is without any short spines, while *N. suthepensis* has thick parameres only half as long as the phallus and the phallicata has some additional short spines.

Male. Length of each forewing 4.2–4.8 mm (N=16). Head light brown with dark yellowish antennae, pronotum light brown, meso- and metanota brown with warts light brown, forewings brown.

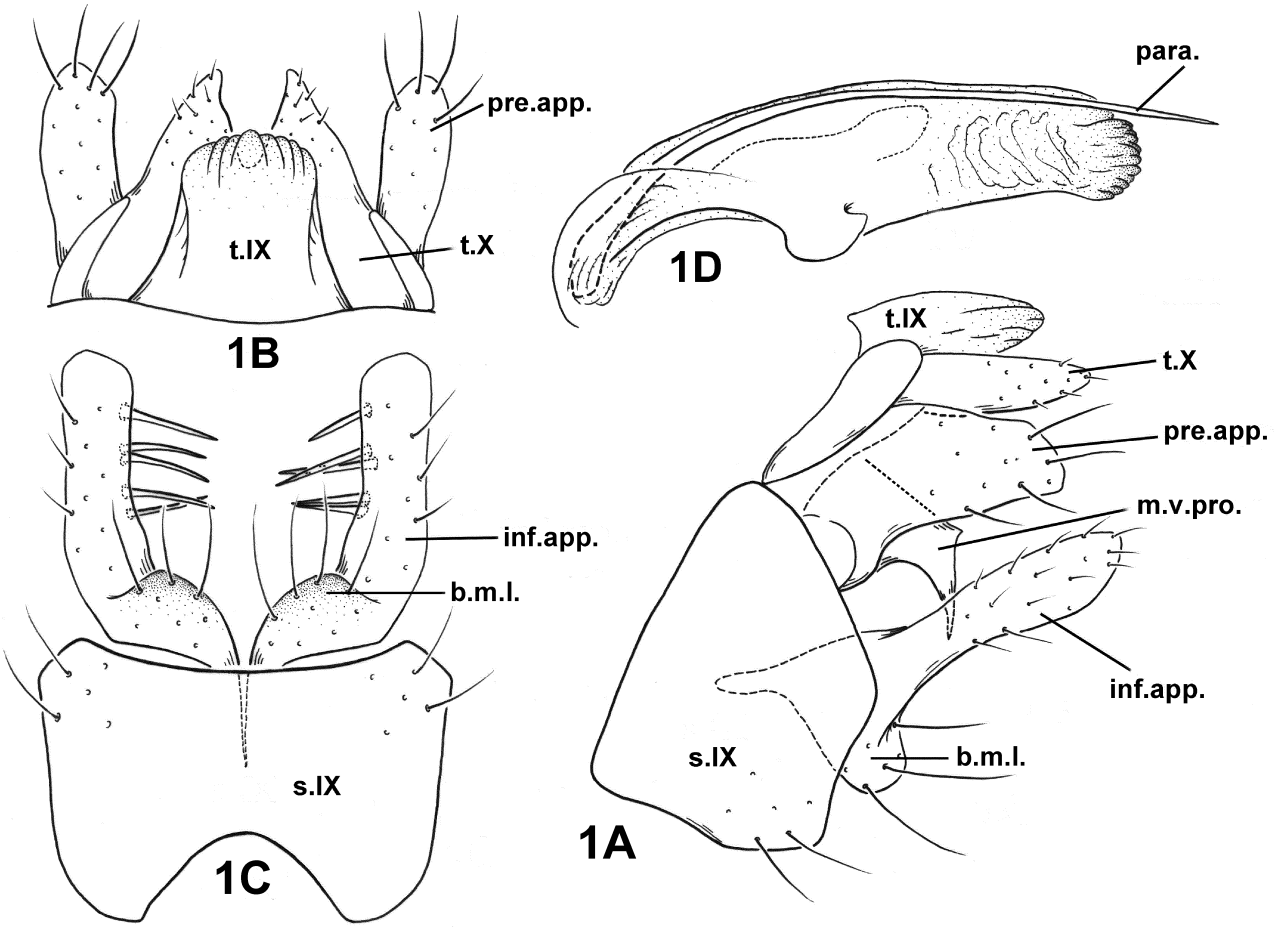

FIGURE 1. *Nyctiophylax (Paranyctiophylax) crinalis* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, phallus, left lateral. b.m.l. = basomesal setose lobe of an inferior appendage; inf.app. = inferior appendage; m.v.pro. = mesoventral process of a preanal appendage; para. = paramere; pre.app. = preanal appendage; s.IX = sternum IX; t.IX = tergum IX; t.X = tergum X.

Male genitalia. Sternum IX in lateral view nearly quadrangular, posterior margin protruding at middle and forming 135° angle (Fig. 1A); in ventral view anterior margin excised in U-shape with depth of 1/3 length of sternum, posterior margin with broad and very shallow concavity (Fig. 1C); dorsal region of tergum IX membranous, trapezoidal (Fig. 1B). Preanal appendages broad at base in lateral view, each approximately 2 times

its middle width, apex obliquely truncate; basal half of mesoventral process broad, distal half acute and horn-like, directed downward. Tergum X long and tongue-like in lateral view; transparent, semi-sclerotized, with V-shaped incision apicomesally in dorsal view (Fig. 1B). Inferior appendages each about 7 times as long as its mid width in lateral view, slightly clavate, narrowed at middle, with basomesal setose lobe semicircular in lateral view (Fig. 1A); in ventral view each inferior appendage nearly parallel-sided, with inner margin bearing row of long thick setae, basomesal setose lobe strongly sclerotized, semicircular, broader than main body, with rounded apex (Fig. 1C). Phallus tubular, with pair of compressed oval protrusions laterally near middle; pair of parameres long, needle-like; phallicata without spines.

Holotype male. Guang-xi Province: Shang-si County, Mt. Shi-wan-da-shan National Forest Park, Shi-tou River, tributary of Ming-jiang River, 1.35 km SW of main entrance to Park, N 21.9022°, E 107.9046°, alt. 300 m, 05 Jun 2004, Coll. Yang L-f. and C.J. Geraci.

Paratypes: Guang-xi Province: same data as holotype, 89 males. Shang-si County: Mt. Shi-wan-da-shan National Forest Park, fourth trib of Shi-tou River, 3.8 km SW of main entrance to Park, N 21.8914°, E 107.9047°, alt. 420 m, 06 Jun 2004, Coll. J.C. Morse and Sun C-h., 6 males; Na-lin River, tributary of Ming-jiang River, 2.0 km NW of main entrance to Mt. Shi-wan-da-shan National Forest Park, N 21.9070°, E 107.8966°, alt. 281 m, 05 Jun 2004, Coll. J.C. Morse and Sun C-h., 15 males; Mt. Shi-wan-da-shan National Forest Park, Shi-tou River at second tributary, 3.4 km SW of main entrance to Park, N 21.8920°, E 107.9073°, alt. 392 m, 06 Jun 2004, Coll. Yang L-f. and C.J. Geraci, 3 males. Long-lin County: Mt. Jin-zhong shan, Provincial Forest Preserve, Duo-gui Gou, 1.5 km N of Xi-she Village, N 24.5824°, E 104.9141°, alt. 1145 m, 11 Jun 2004, Coll. J.C. Morse and Sun C-h., 2 males.

Etymology. Greek, *crinalis* = of hair, with reference to the inner margins of the inferior appendages each bearing a row of long thick setae in ventral view.

Distribution. Oriental Biogeographic Region of China: Guang-xi.

Nyctiophylax (*Paranyctiophylax*) *dactylatus* n. sp.

(Fig. 2)

Diagnosis. This new species is very similar to *Nyctiophylax* (*Paranyctiophylax*) *sagax* (Mey 1995) from Vietnam. It differs in that the preanal appendages are shorter than tergum X and the phallus lacks any spines. In contrast, the preanal appendages of *N*. (*P.*) *sagax* are longer than tergum X and the phallus of that species has a complicated, serrate, longitudinal, subapicoventral "cornutus" of tiny spines.

Male. Length of each forewing 5.6 mm (N=1). Head yellowish brown with dark yellowish antennae, pronotum light brown, meso- and metanota brown, forewings brown.

Male genitalia. Segment IX triangular anteriorly and nearly straight posteriorly in lateral view (Fig. 2A); in ventral view segment IX narrowed anteriorly with semicircular excision 1/4 as deep as length of sternum, posterior margin with broad and shallow concavity (Fig. 2C); dorsal region of segment IX semi-membranous, rectangular (Fig. 2B). Preanal appendages each forming laterally compressed and horizontal lobe, in lateral view (Fig. 2A) two times as long as its middle width, broad at base with remainder nearly parallel-sided, tip obliquely truncate; mesoventral process long and stout, broad at base, with apex tapered and curved ventrad, bases of opposing processes meeting each other under phallus (Fig. 2D). Tergum X in lateral view long and tall, length 1.3 times height with apicoventral ends triangularly protruded (Fig. 2A); in dorsal view transparent, semi-sclerotized, deeply divided apicomesally (Fig. 2B). Inferior appendages erect, dorsocaudally olbique in lateral view, each narrowing in distal 1/4 to acute tip; in ventral view, its dorsal edge strongly extended mesad as broad lobe with tip obliquely truncate and with finger-shaped process on inner margin near middle (Fig. 2C); basomesal setose lobe small, bluntly triangular, concealed in lateral view by base of appendage, concealed or barely visible ventrally (Fig. 2C). Phallus tubular, with pair of laterally compressed and oval protrusions laterally near base and pair of long, needle-like parameres, phallicata without tiny spines (Fig. 2A).

Holotype male. Guang-dong Province: Xin-yi County, Da-cheng Town, Da-wu-ling Nature Reserve, upstream of the stream at the entrance of Reserve, N 22°16'08", E 111°11'48", alt. 1110 m, 26 May 2004, Coll. Sun C-h.

Etymology. Greek, *dactylatus* = digitate or finger-like, with reference to the finger-shaped process on the inner margin of each inferior appendage in ventral view.

Distribution. Oriental Biogeographic Region of China: Guang-dong.

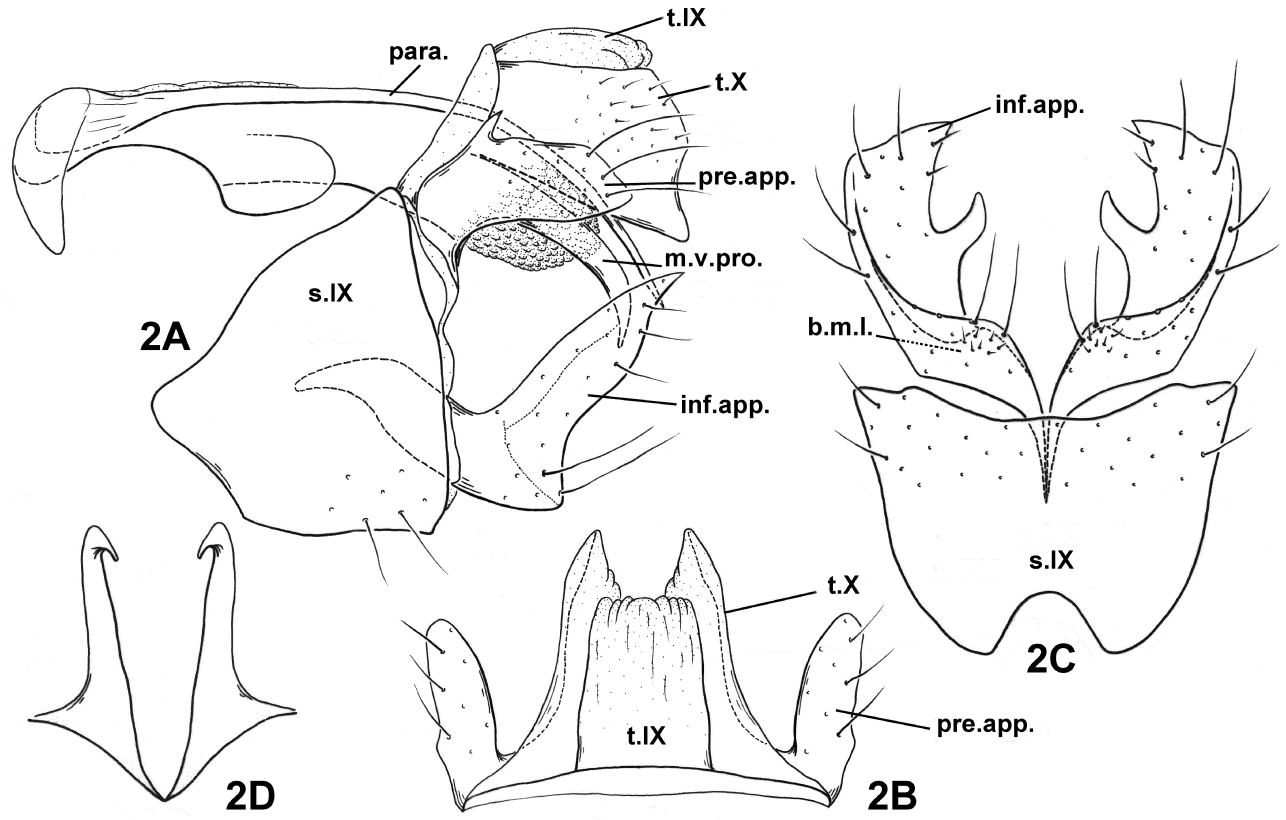

FIGURE 2. *Nyctiophylax (Paranyctiophylax) dactylatus* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, mesoventral processes of preanal appendages, ventral. b.m.l. = basomesal setose lobe of an inferior appendage; inf.app. = inferior appendage; m.v.pro. = mesoventral process of a preanal appendage; para. = paramere; pre.app. = preanal appendage; s.IX = sternum IX; t.IX = tergum IX; t.X = tergum X.

***Nyctiophylax* (*Paranyctiophylax*) *orbicularis* n. sp.**
(Fig. 3)

Diagnosis. This new species is very similar to *N. cascadensis* Malicky 1995 from Vietnam. However, it differs in that 1) sternum IX has anterior and posterior margins both deeply excised such that the mid-length of sternum IX is only 1/2 as long as the lateral margins in ventral view; 2) its preanal appendages in lateral view are short and sub-triangular, each having its ventral region 1/2 as long as its basal height; 3) each preanal appendage has a mesoventral process that is stout, roundly curved ventrad to an acute apex, and with half its length clearly visible in lateral view; and 4) tergum X has each upper lobe semi-sclerotized, its ventrolateral margins are highly sclerotized and has a long, spinous apex curved ventrad which extends well past its lower lobe tip in lateral view; each of its lower lobes is large, rounded, semi-transparent, as tall as long, and with its lower edge reaching the ventral margins of the preanal appendages. In *N. cascadensis*, 1) the anterior and posterior margins of sternum IX are shallowly excised, such that the mid-length of sternum IX is at least 3/4 as long as the lateral margins; 2) the preanal appendages are triangular in lateral view, each with its mid-length as long as its basal height; 3) the mesoventral process of each preanal appendage is hook-like, its basal 2/3 is tilted upward, and its tip is barely visible in lateral view; and 4) the upper lobes of tergum X are short, hook-like, and not extending beyond the preanal appendages; the lower lobes are small and tongue-like, with the two together positioned above the preanal appendages in lateral view.

Male. Length of each forewing 4.6–5.8 mm (N = 9). Head brown with dark yellowish antennae, pronotum yellowish brown, meso- and metanota and fore wings brown.

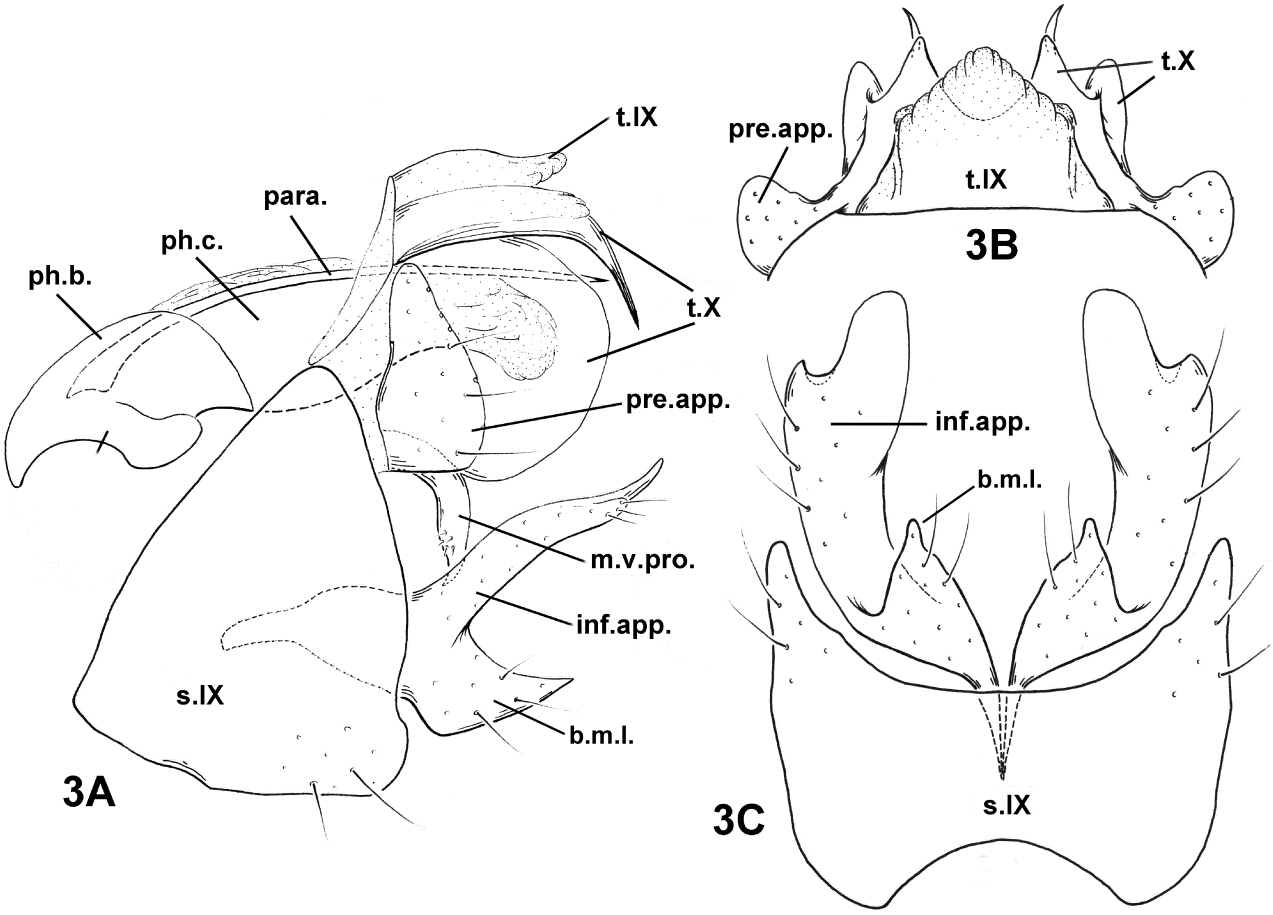

FIGURE 3. *Nyctiophylax (Paranyctiophylax) orbicularis* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral. b.m.l. = basomesal setose lobe of an inferior appendage; inf.app. = inferior appendage; m.v.pro. = mesoventral process of a preanal appendage; para. = paramere; ph.b. = phallobase; ph.c. = phallicata; pre.app. = preanal appendage; s.IX = sternum IX; t.IX = tergum IX; t.X = tergum X.

Male genitalia. Segment IX nearly triangular, with posterior margin almost straight in lateral view (Fig. 3A); in ventral view anterior margin with rounded concavity 1/3 as deep as length of sternum and posterior margin broadly and deeply excised (Fig. 3C); dorsal region of tergum IX pentagonal, semi-membranous in dorsal view, with basal width greater than its mid length (Fig. 3B). Preanal appendages in lateral view short, sub-triangular, ventral region 1/2 as long as basal height; each with mesoventral process stout, roundly curved ventrad to acute apex, with half its length clearly visible in lateral view. Tergum X in lateral view with each half divided into two lobes: upper lobe transparent, semi-sclerotized, its ventrolateral margin highly sclerotized and each with long, spinous apex curved ventrad; lower lobe large, rounded, semi-transparent, as tall as long (Fig. 3A); with U-shaped incision apicomesally in dorsal view (Fig. 3B). Inferior appendages dorsoventrally depressed, each with its main body narrow and long, tilting dorsad in lateral view, its basomesal lobe triangular with its base about 1.5 times as broad as base of main body (Fig. 3A); in ventral view inferior appendages broad and apically blunt, each about 3 times as long as its maximum width, with distal 1/3 of its outer margin excised; basomesal setose lobe triangular and at least 1/3 as long as main body (Fig. 3C). Phallus tubular, with pair of laterally compressed oval protrusions basolaterally and pair of long, needle-like parameres; lacking other spines (Fig. 3A).

Holotype male. Guang-dong Province: Ru-yuan County, Nan-ling National Nature Preserve, Lao-peng-keng Field Station, Lao-peng-keng, Route X327, marker 21.5 km, N 24.9291°, E 113.0158°, alt. 1010 m, 18 May 2004, Coll. J.C. Morse, Yang L-f., Tong X-l.

Paratypes: Guang-dong Province: Zhao-qing City: Ding-hu District, Mt. Ding-hu Forest Ecosystem Research Station, Academia Sinica, Dong-gou, N 23.1607°, E 112.5323°, alt. 132 m, 24 May 2004, Coll. Yang L-f., Zhou X., C.J. Geraci, 1 male; same data except at Shui-lian-dong-tian Waterfall, N 23.1604°, E 112.5250°, alt. 170 m, 24 May 2004, Coll. J.C. Morse and SUN C-h., 4 males. Bo-luo County, Mt. Luo-fu, unnamed stream, 400 m on trail to

Shan-bei-shui, trailhead 3.2 km W of ridge of Mt. Cha-shan, N 23.3190°, E 114.0115°, alt. 290 m, 1 June 2004, Coll. J.C. Morse, Zhou X., C.J. Geraci, 3 males. Jiang-xi Province: Mt. Jiu-lian Shan: National Nature Preserve Da-Qiu-Tian, N 24°35'09'', E 114°26'53'', alt. 400 m, 10 June 2005, Coll. Sun C-h., 1 male; Mt. Wu-Yi Shan: National Nature Preserve, unnamed tributary of Tong-Mu River, N 27.8397°, E 117.7224°, alt. 943 m, 3 June 2005, Coll. Zhou C-f., 1 male.

Etymology. Greek, *orbicularis* = circular, with reference to the lower lobes of tergum X expanded to round sclerites in lateral view.

Distribution. Oriental Biogeographic Region of China: Guang-dong, Jiang-xi.

Nyctiophylax (*Paranyctiophylax*) *macrorrhinus* n. sp.

(Fig. 4)

Diagnosis. This new species is very similar to *N. zadok* Malicky & Chantaramongkol 1993 from Thailand. It differs in that 1) the apical 1/3 of each inferior appendage is acute, horn-like and curved mesad in ventral view; 2) the preanal appendages are shorter than tergum X and the mesoventral process of each preanal appendage is slender and arched in a semicircle in lateral view, with a dorsoventrally depressed apex (Figs. 4A, 4D); and 3) the pair of phallic sclerites are slender, generally straight and only slightly sclerotized. In *N. zadok*, 1) each inferior appendage is straight, with a blunt apex; 2) the preanal appendages are much larger and longer than tergum X, each having its mesoventral process triangular with an apex acute in lateral view; and 3) the phallic sclerites are stout, horn-like, and strongly sclerotized.

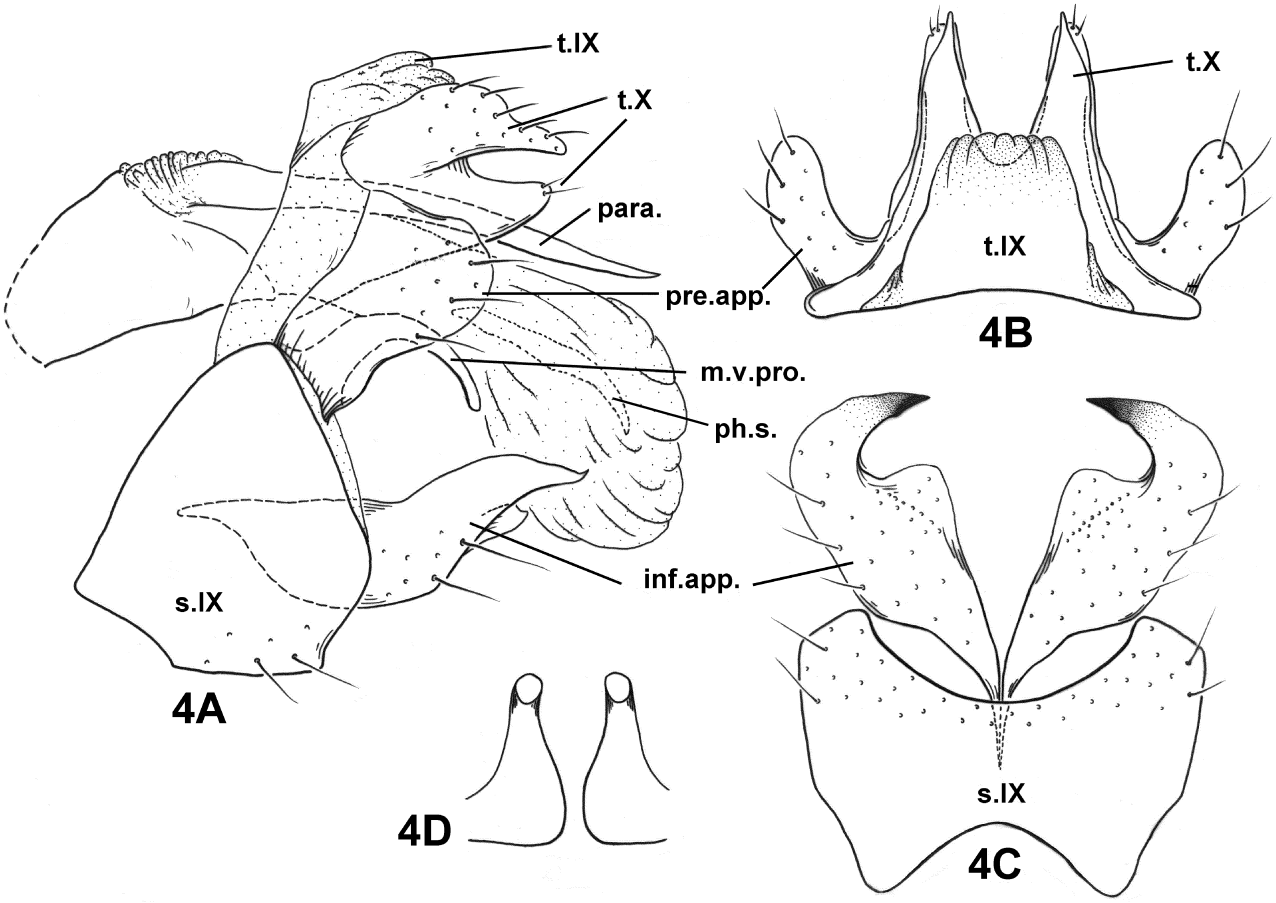

FIGURE 4. *Nyctiophylax (Paranyctiophylax) macrorrhinus* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, mesoventral processes of preanal appendages, ventral. inf.app. = inferior appendage; m.v.pro. = mesoventral process of a preanal appendage; para. = paramere; ph.s. = phallic sclerites; pre.app. = preanal appendage; s.IX = sternum IX; t.IX = tergum IX; t.X = tergum X.

Male. Length of forewing 4.0–5.4 mm (N = 10). Head brown with yellowish antennae, pronotum light brown, meso- and metanota brown, fore wings light brown.

Male genitalia. Segment IX in lateral view with triangular protrusion anteriorly in ventral half but with round production posteriorly (Fig. 4A); in ventral view both anterior and posterior margins each with deep concavities such that midline of venter IX only 1/2 as long as segment (Fig. 4C); dorsal region of segment IX nearly membranous, sub-quadrate in dorsal view. Preanal appendages in lateral view (Fig. 4A) each broad at base with rounded apex not passing beyond apex of tergum X; mesoventral processes slender and arched in semicircle; in ventral view (Fig. 4D) much broader basally, nearly meeting on midline to support phallus, but not fused with each other, depressed apically. Tergum X in lateral view with each half divided into two lobes: upper lobe setose and apically beak-like, lower lobe smooth with blunt apex bearing 2 setae (Fig. 4A); in dorsal view (Fig. 4B) transparent, semi-sclerotized, with deep U-shaped incision apicomesally. Inferior appendages broad in lateral view (Fig. 4A), each broad at base, gradually narrowing to acute apex; in ventral view (Fig. 4C) apical 1/3 curved mesad with acute horn-like apex and with thin, translucent, triangular mesal edge. Phallus tube-like, with pair of long, stout and straight paramere spines; phallic sclerites slender, narrow both anteriorly and posteriorly, generally straight and lightly sclerotized; lacking other spines (Fig. 4A).

Holotype male. An-hui Province:, Qi-men County, N 29.8°, E 117.7°, Peng-long-xiang, Xiang-dong-cun, 27 Sep. 2003, Coll. Shan L-n. and Sun C-h.

Paratypes. An-hui Province: Qi-men County, N 29.8°, E 117.7°, Li-xi River: Shuang-he-kou, Tao-yuan-li Tributary, 26 Aug. 2003, Coll. Sun C-h. and Shan L-n., 2 males; same data except 26 Jun. 2003, Coll. Shan L-n. and Lu S., 6 males; same data except at 50 m upstream of Shuang-he-kou, Tang-yun-li Tributary, 30 May 2002, Shan L-n. and Hu B-j., 1 male.

Etymology. Greek, *macrorrhinus* = big-beaked, with reference to the beak-like apices of the upper lobes of tergum X in lateral view.

Distribution. Oriental Biogeographic Region of China: An-hui.

Nyctiophylax (*Paranyctiophylax*) *adaequatus* Wang & Yang 1997

(Fig. 5)

Nyctiophylax (*Paranyctiophylax*) *adaequatus* Wang & Yang 1997 (in Yang *et al.* 1997): 284–285, 287–288, fig. 6 (male). Type locality: Henan (Song-xian Co., Mt. Bai-yun-shan N34.08°, E112.05°).

Remarks. Additional field collections and laboratory identifications have brought us more specimens of this species. These specimens from other parts of China show interesting variations, possibly with a geographical cline, especially in the shape of the inferior appendages. The holotype also is redrawn here for comparison.

In each inferior appendage of the holotype, the basomesal lobe is only slightly shorter than the dorsal branch of the main body in lateral view (Fig. 5E), with a narrow apex and an obviously angled mesal protrusion in ventral view (Fig. 5F). Material from Gui-zhou shows a similar pattern. However, in a specimen from Guang-dong (southern China) the basomesal lobe is obviously shorter than the dorsal branch of the main body of each inferior appendage in lateral view (5A), with a blunt tip and the mesal projection not so distinctively angled (Fig. 5B). These characters are also variable individually in the same collection (Fig. 5C). In specimens from Qin-ling (northern China), the basomesal lobe is slightly shorter than the dorsal branch of the main body of each inferior appendage as for the holotype, but with a more acute apex and the mesal projection is not so distinctively angled in ventral view (Fig. 5H).

Specimens examined. Guang-dong Province: Bo-luo County: Mt. Luo-fu, unnamed stream, 400 m on trail to Shan-bei-shui, trailhead 3.2 km W of ridge of Cha-shan, N 23.3190°, E 114.0115°, alt. 290 m, 01 Jun 2004, Coll. Zhou X. and C.J. Geraci, 105 males. Gui-zhou Province: Chi-shui City, Hu-shi Town, N 28.34°, E 105.42°, Nan-zhu Forest Station, Jin-sha Creek, 9 June 1995, Coll. Wang B-x. and Sun C-h., 2 males. Shaan-xi Province: Mt. Qin-ling, Tian-tai Mountain, N 33.53°, E 107.38°, National Forest Preserve, headstream of Jia-ling River, black light, alt. 1700 m, 9 June 1998, Coll. Du Y-z. and Wang M., 1 male.

Distribution. Oriental China (Guang-dong, Gui-zhou) and Oriental–Palearctic Boundary Region of China: He-nan (N34.08°, E112.05°, 1400 m), Shaan-xi (Qin-ling N33.53°, E 107.38°, 1700 m).

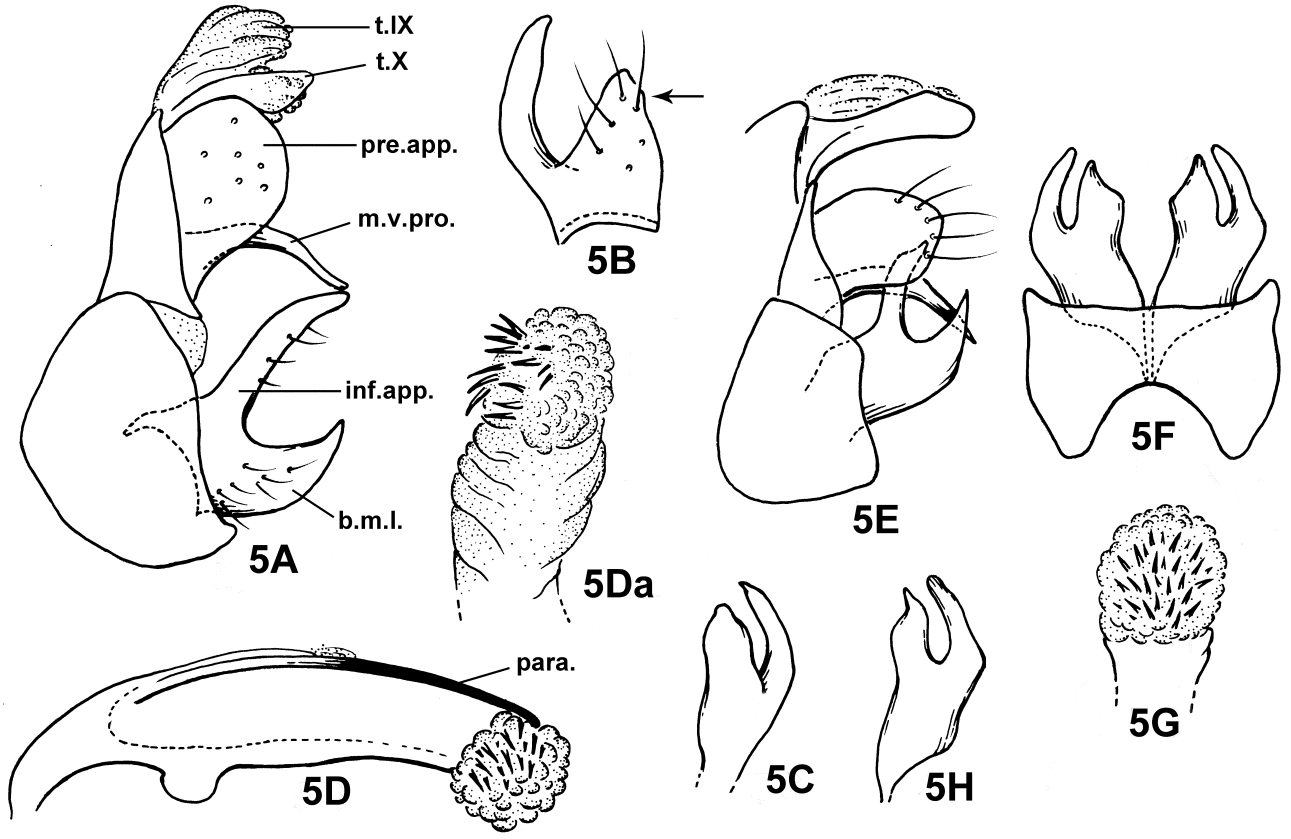

FIGURE 5. *Nyctiophylax (Paranyctiophylax) adaequatus* Wang & Yang 1997, male genitalia. A–D, specimen from Guang-dong, Luo-fu Mountain: A, left lateral; B, left inferior appendage, ventral; C, left inferior appendage, ventral. D, phallus, left lateral; Da, apex of phallus, ventral. b.m.l. = basomesal setose lobe of an inferior appendage; inf.app. = inferior appendage; m.v.pro. = mesoventral process of a preanal appendage; para. = paramere; pre.app. = preanal appendage; t.IX = tergum IX; t.X = tergum X. E–F, specimen from He-nan (holotype): E, left lateral; F, ventral; G, apex of phallus, ventral. H, specimen from Qin-ling, left inferior appendage, ventral.

Nyctiophylax (*Paranyctiophylax*) *auriculatus* Morse, Zhong & Yang 2012

Nyctiophylax (*Paranyctiophylax*) *auriculatus* Morse, Zhong & Yang 2012: 55–57, fig. 8 (male); type locality: China (Jiang-xi Province: Wu-yuan).

Distribution. Oriental Biogeographic Region of China: Jiang-xi, Guang-dong (Morse *et al.* 2012: 55).

Nyctiophylax (*Paranyctiophylax*) *aliel* Malicky 2012

Nyctiophylax (*Paranyctiophylax*) *aliel* Malicky 2012: 1274, fig. 8 (male); type locality: China (He-nan Province, Luo-shan County, Ling-shan).

Remarks. We have not seen specimens of this species.

Distribution. Oriental–Palearctic Boundary Region of China: He-nan.

Nyctiophylax (*Paranyctiophylax*) *gracilis* Morse, Zhong & Yang 2012

Nyctiophylax (*Paranyctiophylax*) *gracilis* Morse, Zhong & Yang 2012: 51–53, fig. 6 (male); type locality: China (Jiang-xi Province: W. of Con-gan).

Distribution. Oriental Biogeographic Region of China: Jiang-xi, Zhe-jiang, An-hui, Si-chuan, Guang-xi (Morse *et al.* 2012: 51).

Nyctiophylax (*Paranyctiophylax*) *pungens* Morse, Zhong & Yang 2012

Nyctiophylax (*Paranyctiophylax*) *pungens* Morse, Zhong & Yang 2012: 53–55, fig. 7 (male); type locality: China (An-hui Province: Jin County).

Distribution. Oriental Biogeographic Region of China: An-hui, Jiang-xi (Morse *et al.* 2012:53).

Nyctiophylax (*Paranyctiophylax*) *sagax* Mey 1995, new record
(Fig. 6)

Nyctiophylax (*Paranyctiophylax*) *sagax* Mey 1995: 212, figs. 7–9 (male). Type locality: Vietnam.

Male genitalia. The Chinese specimen is quite congruent with the drawings of *N*. (*Paranyctiophylax*) *sagax* Mey 1995 from Vietnam, the slight difference is the apicodorsal end of each preanal appendage obviously protruded in a short finger-like process and its mesoventral process with the apex more acute and curved downward in lateral view (Fig. 6A); a drawing of these character variation details, together with drawings of the phallus and a ventral view of the male genitalia are provided for further comparison (Figs. 6B, 6C).

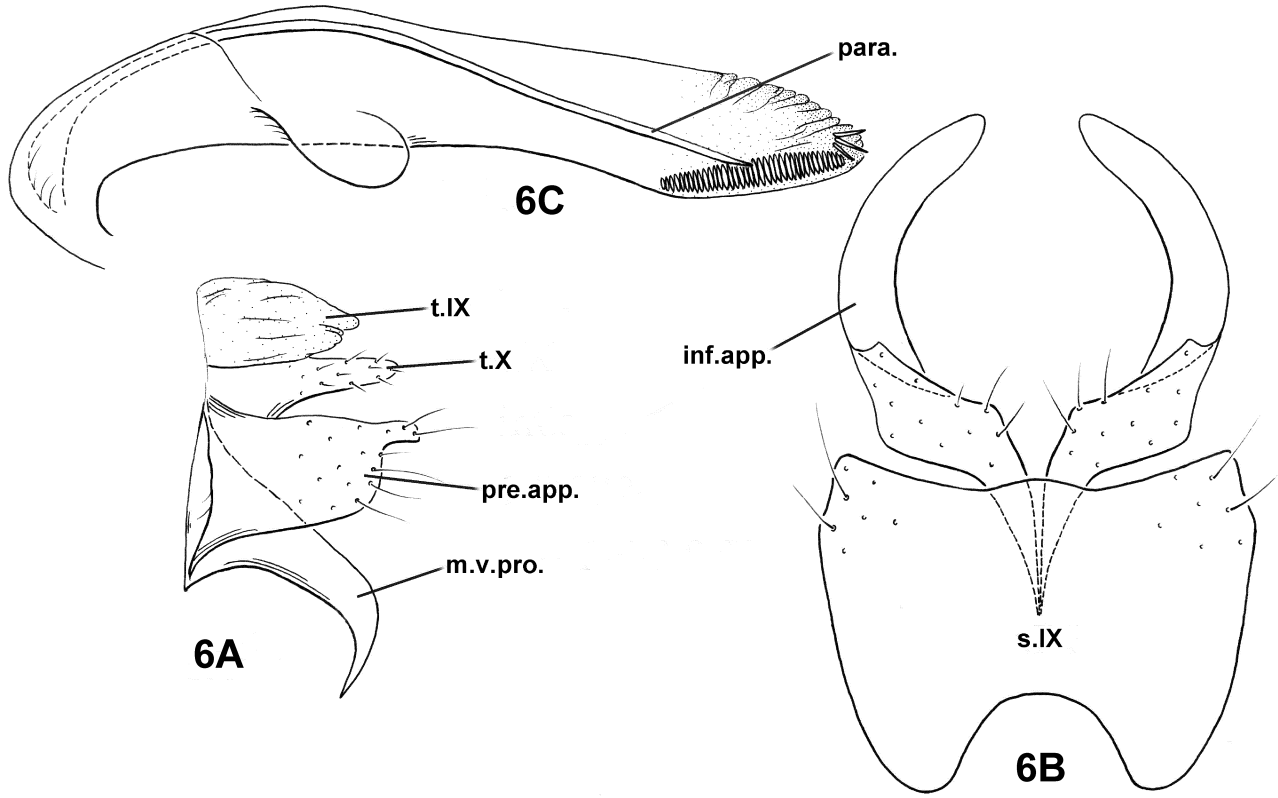

FIGURE 6. *Nyctiophylax (Paranyctiophylax) sagax* Mey 1995, male genitalia. A, tergum IX +X and preanal appendage, left lateral; B, ventral; C, phallus, left lateral. inf.app. = inferior appendage; m.v.pro. = mesoventral process of a preanal appendage; para. = paramere; pre.app. = preanal appendage; s.IX = sternum IX; t.IX = tergum IX; t.X = tergum X.

Specimens examined. Guang-xi Province: Tian-lin County, Mt. Cen-wang-lao-shan Forest Preserve, unnamed tributary of headwaters of Bu-liu River, waterfall at County Road 794 marker 37.9 km, N 24.4127°, E 106.3820°, alt. 1422 m, 08 Jun 2004, Coll. Yang L-f. and C.J. Geraci, 1 male; same data except at Yao-shan-gou Stream,

tributary of Bu-liu River, County Road 794 marker 52.7 km, N 24.4708°, E 106.3578°, alt. 1223 m, 09 Jun 2004, Coll. Yang L-f. and C.J. Geraci, 4 males; Long-lin County, Mt. Jin-zhong Provincial Forest Preserve, Nong-heng-gou Stream, 1.3 km N of Xi-she village, N 24.5786°, E 104.9139°, alt. 1140 m, 11 Jun 2004, Coll. Zhou X., C.J. Geraci and K.M. Kjer, 1 male; Xing-an County, Mt. Mao-er Nature Preserve, unnamed tributary of Zi-jiang River, 200 m E of Jiu-niu-tang Gate, upstream 300 m above fish hatchery, N 25.8850°, E 110.4888°, alt. 1112 m, 17 Jun 2004, Coll. Zhou X. and C.J. Geraci, 1 male. Si-chuan Province: Mian-ning County, Da-jia-cun Village, Yang-jia Creek, 100 m downstream of S215 at 409.6 km stone marker, N 28.3601°, E 101.9915°, alt. 2420 m, 3 Jul 2005, Coll. C.J. Geraci and J.C. Morse, 3 males; Shi-mian County, Li-zi-ping Nature Preserve, Ca-luo Town, Hai-zi Creek, 3rd-level Hydropower Station, 4.3 km S of G108 from 2600.8 km stone marker, N 29.1394°, E 102.3694°, alt. 1390 m, 30 Jun 2005, Coll. Zhou X. and J.C. Morse, 1 male. Jiang-xi Province: Mt. Jiu-lian National Nature Reserve, unnamed tributary 1 of Xia-gong-tang Stream, N 24°32'05'', E 114°28'08'', alt. 630 m, 7 June 2005, Coll. Zhou X. and Sun C-h., 11 males; Mt. Wu-Yi National Nature Preserve, Li-tou-jian Stream, 500–900 m upstream of protected area marker, N 27°58'49'', E 117°51'43'', alt. 375–404 m, 5 June 2005, Coll. Sun C-h., Zhou C-f., 2 males.

Distribution. Oriental Biogeographic Region of China: Guang-xi, Si-chuan, Jiang-xi; Vietnam.

Nyctiophylax (*Paranyctiophylax*) *taiwanensis* Hsu & Chen 1996

Nyctiophylax (*Paranyctiophylax*) *taiwanensis* Hsu & Chen 1996: 117–118, figs. 1–4 (male). Type locality: Tai-wan (Tai-chung).

Remarks. We have not seen specimens of this species.

Distribution. Tai-wan.

Nyctiophylax (*Nyctiophylax*) *amphonion* Malicky & Chantaramongkol 1997, new record

(Fig. 7)

Nyctiophylax (*Nyctiophylax*) *amphonion* Malicky & Chantaramongkol 1997: 206, pl. 2 (male). Type locality: Thailand (Nam Nao).

Remarks. Male genitalia of the Chinese specimens appear almost identical with the drawings of *N*. (*N*.) *amphonion* Malicky & Chantaramongkol 1997 from Thailand. Because the original drawing is quite simple, detailed drawings for the male genitalia of our Chinese specimens are provided for further comparison (Fig. 7A-D).

Specimens examined. Guang-dong Province: Long-men County, Mt. Nan-kun, Xia-ping-she River, light trap on bridge to village, N 23.6457°, E 113.8834°, alt. 392 m, 16 May 2004, Coll. Zhou X. and C.J. Geraci, 1 male. Guang-xi Province: Shang-si County, Na-lin River, tributary of Ming-jiang River, 2.0 km NW of main entrance to Mt. Shi-wan-da-shan National Forest Park, N 21.9070°, E 107.8966°, alt. 281 m, 05 Jun 2004, Coll. J.C. Morse and Sun C-h., 5 males; Shang-si County, Mt. Shi-wan-da-shan National Forest Park, Shi-tou-he River, tributary of Ming -jiang River, 1.35 km SW of main entrance to Park, N 21.9022°, E 107.9046°, alt. 300 m, 05 Jun 2004, Coll. Yang L-f. and C.J. Geraci, 2 males; same data except at second tributary, 3.4 km SW of main entrance to Park, N 21.8920°, E 107.9073°, alt. 392 m, 06 Jun 2004, Coll. Yang L-f. and C.J. Geraci, 1 male.

Distribution. Oriental Biogeographic Region of China: Guang-dong, Guang-xi; Thailand.

Nyctiophylax (*Nyctiophylax*) *senticosus* Morse, Zhong & Yang 2012

Nyctiophylax (*Nyctiophylax*) *senticosus* Morse, Zhong & Yang 2012: 49–51, fig. 5 (male); type locality: China (An-hui Province: Jin County).

Distribution. Oriental Biogeograpic Region of China: An-hui, Guang-xi (Morse *et al.* 2012: 49).

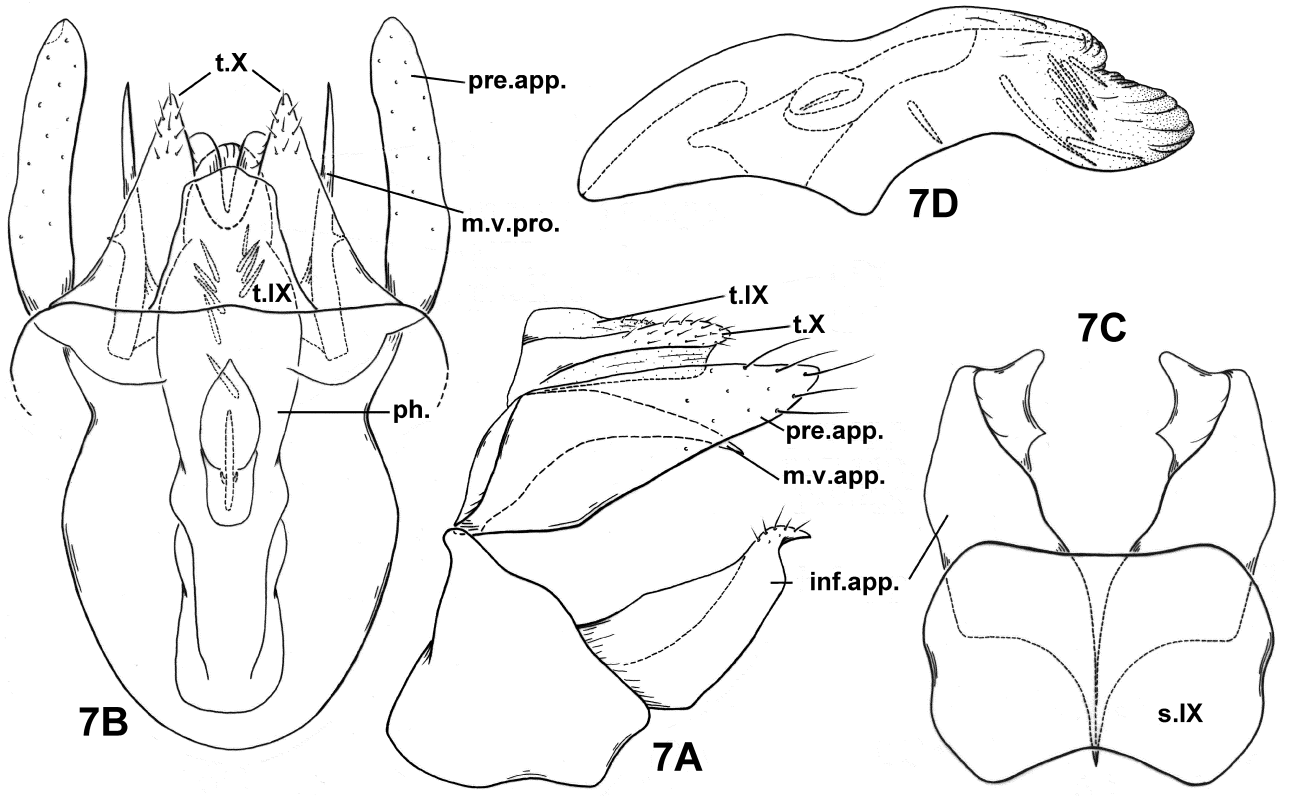

FIGURE 7. *Nyctiophylax (Nyctiophylax) amphonion* Malicky & Chantaramongkol 1997, male genitalia. A, left lateral; B, dorsal; C, ventral; D, phallus, left lateral. inf.app. = inferior appendage; m.v.pro. = mesoventral process of a preanal appendage; ph. = phallus; pre.app. = preanal appendage; s.IX = sternum IX; t.IX = tergum IX; t.X = tergum X.

Nyctiophylax (*Nyctiophylax*) *sinensis* Brauer 1865

Nyctiophylax (*Nyctiophylax*) *sinensis* Brauer 1865: 419 (female). Type locality: Shang-hai. Neboiss 1993: 110, figs. 3, 4 (male).

Specimens examined. Jiang-su Province: Hong-ze County, N 33.15°, E 118.36°, Su-bei-qu Channel, 24 Sep. 1988, Coll. Sun C-h., 19 males. Jiang-xi Province: Bo-yang County, N 29.0°, E 116.6°, Mo-dao-shi Village, Chang River, alt. 30 m, 6 Jun. 1990, J.C. Morse, Yang L-f. and Sun C-h., 3 males.

Distribution. Oriental Biogeographic Region of China: Shang-hai, Jiang-su, Jiang-xi.

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