

A Revision of the Eubrianacinae (Coleoptera, Psephenidae)

V. *Jaechanax* gen. nov.

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Abstract Larva, pupa and adult of *Jaechanax* gen. nov. are described from the Oriental Region. Two species are described as new to science: *J. elongatus* sp. nov. [Philippines] and *J. dentatus* sp. nov. [Indonesia: Sulawesi]. *Eubrianax illiesi* M. SATÔ, *E. insignis* FAIRMAIRE and *E. major* PIC are transferred to *Jaechanax*. *Eubrianax limbatithorax* PIC, 1923 is regarded as a junior synonym of *E. major* PIC, 1913. A key to the species of *Jaechanax* is provided.

Introduction

Most species of the subfamily Eubrianacinae are hitherto known as belonging to the genus *Eubrianax*. Through our recent study on the subfamily, we have recognized that the genus is a composite group. Above all, *Eubrianax insignis* (FAIRMAIRE) and its allied species are apparently different from *Eubrianax* in old sense in having the long and slightly curved claws and the narrowly rounded apices of parameres of the male genitalia. Their immature stages also show some peculiarities and are similar to those of the genera *Mubrianax* and *Odontanax*. Thus, we are going to establish a new genus for this group of eubrianacines in the present paper.

As the result, three species of *Eubrianax* described by FAIRMAIRE and PIC in old times should be transferred to the new genus and also two new species should be described in addition.

Acronyms:

MHNP	Muséum national d'Histoire naturelle, Paris
BPBM	Bernice P. Bishop Museum, Honolulu
FMC	Field Museum of Natural History, Chicago
NHMW	Naturhistorisches Museum, Wien
NTUC	National Taiwan University, Taipei
NWU	Nagoya Women's University, Nagoya

Jaechanax gen. nov.

Type species: *Eubrianax insignis* FAIRMAIRE, 1904.

Description. Adult. Body form oblong, moderately depressed; surface densely pubescent but more sparsely so on pronotum which is provided with latero-apical translucent areas.

Head completely concealed under pronotum; frons apically dilated; labrum transverse, medially emarginate; antenna 11-segmented, segments 3–10 serrate in female, pectinate in male with all rami originating basally. Maxillary palpus 4-segmented, segment 1 very short and weakly sclerotized; labial palpus 3-segmented, segment 1 short and weakly sclerotized. Pronotum transverse, widest usually near basal 1/3, slightly constricted towards base, more distinctly constricted towards apex; margins arcuate and smooth; posterior angles rectangular; disc medially convex. Scutellum subtriangular. Elytra obovate or subparallel; disc with stripes consisting of more impressed punctures; lateral margins smooth. Prosternum produced anteriorly; prosternal process short, not reaching mesosternum, apically tapering, with acute apex; mesosternum flat, without groove for reception of prosternal process; metasternum with deeply impressed median longitudinal suture. Mesocoxal cavities separated.

Legs moderately long, apical spines of tibia 2–1–1; tarsi 5-segmented, segment 1 subequal to segment 2, progressively shortened from segment 2 to 4, segment 5 subequal to segment 2; claws simple, slightly curved; pulvilli membranous and translucent.

Male genitalia trilobed; fibula reduced into very slender sclerite; median lobe slender, baso-lateral apophyses short; parameres long, reaching apex of median lobe, apices narrowly rounded, longer than basal piece; ventral apophyses well developed; basal piece gradually narrowed towards base.

Secondary sexual dimorphism:— Female has a larger body and serrate antennae.

Mature larva (Fig. 1; based upon an exuvia of *J. dentatus*). Body form oblong. Periocellar sulci conjoined with mid-dorsal line near apex, lacking mid-dorsal pronotal plate. Posterior plates present in all thoracic segments (including pleurites) and main plates of abdominal segments 1–3. Costal lines present on meso- and metathoraces and all abdominal segments, abbreviated near lateral margins of meso- and metathoraces and pleurites of abdominal segments 7–8. Slender crevices present between posterior margin of abdominal tergite 6 and anterior margin of tergite 7 (absent in younger larvae).

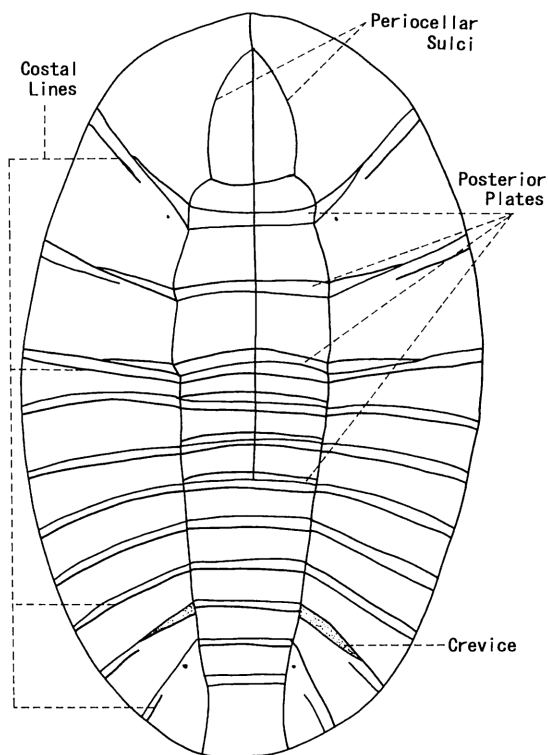


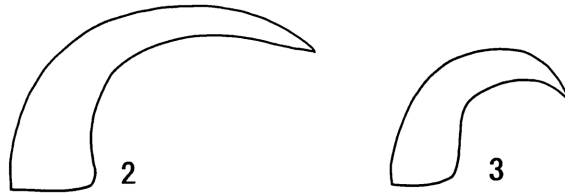
Fig. 1. Larva of *Jaechanax dentatus* sp. nov.; dotted areas indicate crevices.

Pleurite ornamentation:— Anterior and lateral margins with lanceolate setae; posterior margins with comb-shaped setae. Two or three marginal peg setae present at antero-lateral angles and becoming progressively shortened posteriad; the setae with teeth only on anterior margins of basal pieces; three or four marginal peg setae present at postero-lateral angles and progressively lengthened.

Marginal peg setae (Fig. 4) provided with 4 or 5 teeth on each side of apical portion; teeth on both sides of basal piece reduced; basal setae lanceolate; apical setae paired and elongately lanceolate; apical piece filament-shaped.

Diagnosis. Adult. This new genus is very close to *Eubrianax*, but can be distinguished from the latter by a combination of the following characters: long and slightly curved claws (Fig. 2), membranous and translucent pulvilli, and the narrowly rounded apices of parameres. In *Eubrianax*, the claws are short and strongly curved (Fig. 3), the pulvilli are pigmented and well developed, and the hook-like apices of parameres are covered with small rounded sclerites.

Larva. Very similar to that of *Mubrianax*, but different from the latter in the absence of posterior plates on pleurites of abdominal segments 1–4, and the presence of a crevice between abdominal terga 6 and 7.



Figs. 2-3. Tarsal claw; 2, *Jaechanax insignis* (FAIRMAIRE); 3, *Eubrianax manakikikuse* M. SATÔ.

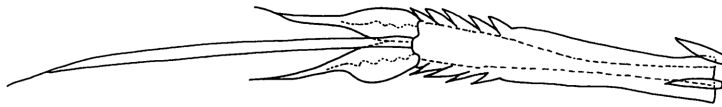


Fig. 4. Marginal peg setae of *Jaechanax dentatus* sp. nov.

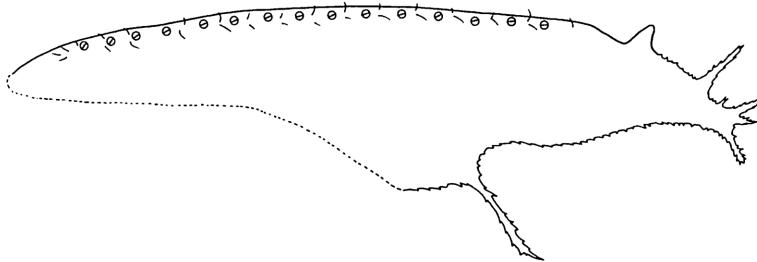


Fig. 5. Spiracles of the pupa of *Jaechanax dentatus* sp. nov.

Pupa (Fig. 5; based upon an exuvia of *J. dentatus*). Very similar to that of *Odontanax*, but the spiracles are different in having fewer openings (about 15), all of which are in a marginal row, and in bearing setae between openings and a process near the apex of each spiracle.

Etymology. Named after Dr. Manfred A. JÄCH. He has greatly contributed to the study of the Psephenidae in general, and reared a larva of *Jaechanax dentatus* to the adult.

Included species. *Jaechanax. dentatus* sp. nov., *J. elongatus* sp. nov., *J. illiesi* (M. SATÔ), comb. nov., *J. insignis* (FAIRMAIRE), comb. nov., and *J. major* (PIC), comb. nov.

Distributional range. Philippines, Indonesia, Malaysia, Thailand, Laos, Vietnam, Myanmar.

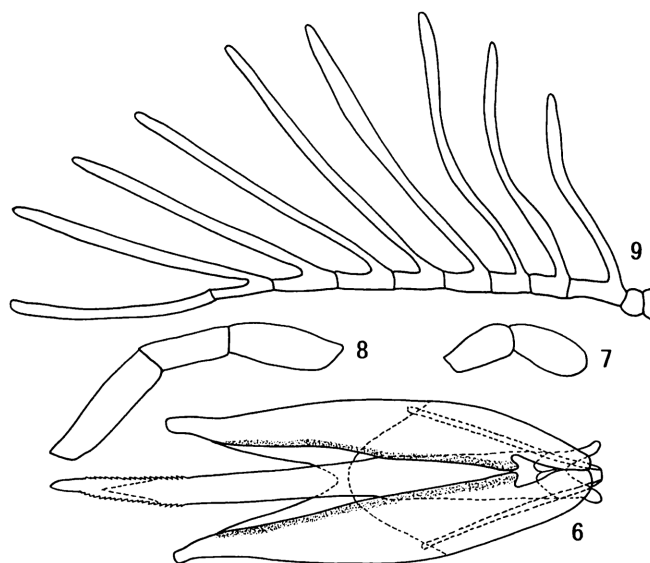
Jaechanax dentatus sp. nov.

(Figs. 1, 4–9)

Type series. Holotype: ♂ (NHMW), “N–SULAWESI 1992 Dua Saudara NP W Batuputih (8) leg. Jäch 15. IV, reared from larva.” The exuviae were used for the descriptions of larva and pupa. Paratypes: 1 ♀ (NHMW), “INDON. C–Sulawesi 45 km SE Palu 01°11’S 120°08’E leg. Haft (5) 1994”; 1 ♂ (NTUC), “Rantepao Sulawesi 15. II. 1985 M. Tao leg.”; 1 ♂ (NWU), “Pedamaran, 900–1200 m Nr. Rantepao, Sul. Sel. INDONESIA 8th V. 1985 N. Kobayashi leg.”

Male. 4.2 mm long, 2.6 mm wide. Coloration dark brown; sides of pronotum and legs brown. Antenna (Fig. 9) pectinate from segment 3 to 10; relative lengths of ramus vs antennomere from segment 3 to 10 about 3.4:6.2:6.6:6.4:5.8:5.0:4.2:4.1. Maxillary palpus (Fig. 8) slender; apex rounded; relative lengths of segments 2–4 about 1.5:1:1.2. Labial palpus (Fig. 7) short, about 0.5× length of maxillary palpus; apex rounded; relative lengths of segments 2–3 about 1:1.1. WP/LP=2.0. LE/WE=1.3. WP/WE=0.6.

Male genitalia (Fig. 6):—Elongate, 3.4× as long as wide. Penis the longest, slender, gradually widened towards base; apex rounded; toothed near apex. Parameres elongate, subequal to length of tegmen, widest at about middle; apices rounded, directed outwards; mesal margins gradually closed towards base; ventral apophyses connected with each other, connection very narrow, about 0.03× length of parameres. Basal piece 0.5× length of tegmen, mostly covered by parameres, base rounded.



Figs. 6–9. *Jaechanax dentatus* sp. nov.; 6, male genitalia; 7, labial palpus; 8, maxillary palpus; 9, male antenna.

Diagnosis. *Jaechanax dentatus* can be distinguished from other members of the genus in having shorter parameres and basal piece.

Etymology. From Latin *dens* (tooth) plus *-atus* (provided with), indicating its toothed penis.

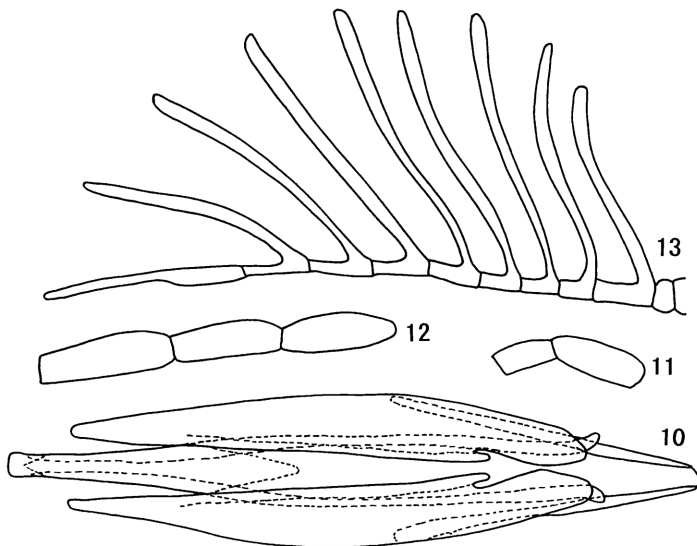
Distribution. Indonesia (Sulawesi).

***Jaechanax elongatus* sp. nov.**

(Figs. 10–13)

Type series. Holotype: ♂ (BPBM), "PHILIPPINES Mt. Montalban, Rizal Wa-wa Dam, 150–200 m 1. III. 1965/L. M. Torrevillas Collector BISHOP Museum." Paratypes: 1 ♂ (BPBM), same data as the preceding, but "6. III. 1965"; 1 ♂ (BPBM), same data, but "11. III. 1965"; 2 ♂♂ (BPBM), same data, but "16. III. 1965"; 1 ♂ (BPBM), same data, but "18. III. 1965"; 1 ♂ (BPBM), same data, but "26. III. 1965"; 2 ♂♂ (BPBM): "P. I., CAMARINES SUR, Mt. Iriga 500 m, 24. III. 1962/H. M. Torrevillas Collector BISHOP"; 1 ♂ (BPBM): "PHILIPPINES MINDANAO Mt. View Colleges 15 km NW Valencia Bukidon, 22–23. IV. '68/D. E. Hardy Collector"; 1 ♂ (NTUC): "(PHILIPPINES) Matalangao, 50 m N. Palawan Is. 30. VIII. 1985 M. Tomokuni."

Male. 4.1–5.4 mm long, 2.4–2.8 mm wide. Coloration blackish brown; coxae, trochanter and femora sometimes paler. Antenna (Fig. 13) pectinate from segment 3 to 10; relative lengths of ramus vs antennomere from segment 3 to 10 about 3.5 : 7.0 : 7.0 : 6.6 : 5.4 : 4.6 : 4.2 : 3.7; terminal segment narrowed at middle. Maxillary palpus (Fig.



Figs. 10–13. *Jaechanax elongatus* sp. nov.; 10, male genitalia; 11, labial palpus; 12, maxillary palpus; 13, male antenna.

12) slender; apex rounded; relative lengths of segments 2–4 about 1.3 : 1 : 1.1. Labial palpus (Fig. 11) short, about 0.4× length of maxillary palpus; apex rounded; relative lengths of segments 2–3 about 1 : 1.7. WP/LP=2.0. LE/WE=1.5. WP/WE=0.7.

Male genitalia (Fig. 10):—Elongate, 4.6× as long as wide. Penis 0.9× length of genitalia, slender, gradually widened towards base; apex rounded. Parameres elongate, 0.8× length of tegmen, widest at basal 1/3; apices rounded; mesal margins gradually narrowed from apex to basal 1/5, emarginate at basal 1/5; ventral apophyses connected with each other, connecting area 0.05× length of parameres. Basal piece 0.5× length of tegmen, base rounded.

Variation. One specimen from Palawan has yellowish brown pronotum.

Diagnosis. *Jaechanax elongatus* is similar to *J. dentatus* in its long antennae, but differs from the latter in the long aedeagus.

Etymology. From Latin *elongatus* (elongate), indicating its long aedeagus.

Distribution. Philippines (Luzon, Mindanao, Palawan).

***Jaechanax illiesi* (M. SATÔ), comb. nov.**

(Figs. 14–17)

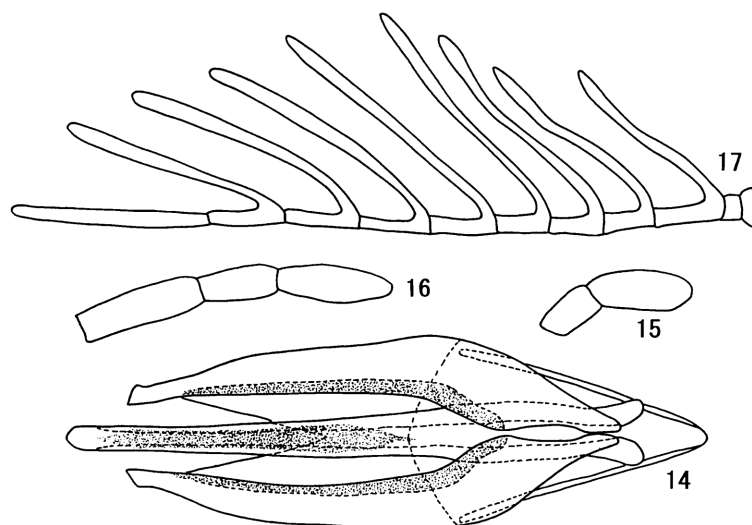
Eubrianax illiesi M. SATÔ, 1983, 65.

Type materials. Three paratypes (2♂♂, 1♀, in NWU) were examined, “PHILIPPINES Mt. Puguis, 2000 m Bontoc Prov., Luzon June, 5, 6, 1977 M. Satô leg.”

Additional materials examined. 1♂ (NHMW), “PHILIPPINES Sayangan, 2260 m Benguet Prov., Luzon 10–11. VI. 1977, leg. M. Satô”; 1♂ (BPBM), “PHILIPPINES Ifugao Province Jacmal Bunhian. 24 km E. Mayoyao, 800–1000 m, 25–27. IV. 1967, leg. L. M. Torrevillas”; 1♂ (NTUC), “(PHILIPPINES) Mt. Pugis 1300–1600 m Mountain Prov. N. Luzon Is. 20. VII. 1985, leg. Y. Nishikawa”; 1♂ (NWU), “Mt. Osdung 2,250 m Gold Star Benguet Prov., Luzon, P. I. 28–V–1977 Leg. S. Uéno & M. Satô.”

Male. 4.7–5.2 mm long, 2.7–3.0 mm wide. Coloration dark brown except for two basal antennal segments, sides of pronotum, pro- and mesosterna, trochanters, coxae and femora which are yellowish brown. Antenna (Fig. 17) pectinate from segment 3 to 10; relative lengths of ramus vs antennomere from segment 3 to 10 about 2.7 : 3.9 : 4.4 : 4.4 : 4.0 : 3.6 : 3.4 : 2.8. Maxillary palpus (Fig. 16) slender; apex rounded; relative lengths of segments 2–4 about 1.8 : 1 : 1.5. Labial palpus (Fig. 15) small, 0.5× length of maxillary palpus; apex obliquely truncate; relative lengths of segments 2–3 about 1 : 1.8. WP/LP=1.6. LE/WE=1.4. WP/WE=0.6.

Male genitalia (Fig. 14):—Elongate, 3.3× as long as wide. Penis 0.9× length of genitalia, very slender, gradually widened towards base; apex rounded. Parameres elongate, 0.8× length of tegmen, widest at basal 1/3; apices angulate; mesal margins parallel from apex to basal 3/8; slightly emarginate at basal 1/8; ventral apophyses connected with each other, connecting area 0.15× length of parameres. Basal piece 0.5× length of tegmen, base rounded.



Figs. 14–17. *Jaechanax illiesi* (M. SATO); 14, male genitalia; 15, labial palpus; 16, maxillary palpus; 17, male antenna.

Female. 6.1 mm long, 5.2 mm wide. Similar to male in color. WP/LP=1.8. LE/WE=1.5. WP/WE=0.6.

Variation. Some individuals have apically pale elytra.

Diagnosis. *Jaechanax illiesi* is characterized by the angulate apices of the parameres.

Distribution. Philippines (Luzon).

Jaechanax insignis (FAIRMAIRE), comb. nov.

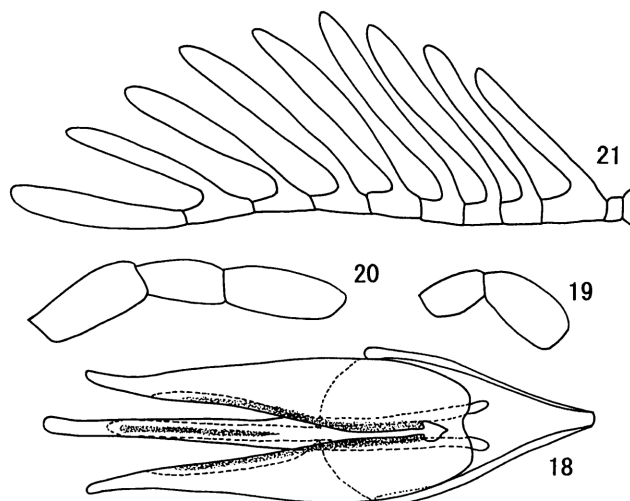
(Figs. 2, 18–21)

Eubrianax insignis FAIRMAIRE, 1904, 87.

Type specimen. Lectotype: ♂ (herewith designated, MHNP), “179, H. Tonkin Lamay, *Eubrianax insignis* Fairm. H. Tonkin.” (Number of syntypes unknown.)

Additional materials examined. 2♂♂ (BPBM), “VIETNAM. M’Drak E of Ban Me Thuot 4–600 m, 8–19. XII. 60/C. M. Yoshimoto Collector”; 2♂♂ (BPBM), “VIETNAM: Dalat 6 km S., 1400–1500 m 9. VI–7. VII. 1961/N. R. Spencer Collector BIHSOP”; 1♂ (BPBM), “VIETNAM: Fyan 900–1000 m, 11. VII–9. VIII. ’61”; 1♂ (NHMW), “N LAOS, Luang Namtha env., 800–1200 m, May 1997”; 2♂♂ (NHMW, NTUC), “MYANMAR Mandalay Division 8 km E Pyin Oo Lwin Gelaung river Pwe Kauk Waterfall, ca. 1070 m, 5. 6. 1999 22°03.52’N 96°31.95’E leg. Schuh & Schilhammer (63).”

Male. 3.8–5.2 mm long, 2.5–3.0 mm wide. Coloration dark brown or blackish brown except for paler pro- and mesofemora. Antenna (Fig. 21) pectinate from seg-



Figs. 18–21. *Jaechanax insignis* (FAIRMAIRE); 18, male genitalia; 19, labial palpus; 20, maxillary palpus; 21, male antenna.

ment 3 to 10; relative lengths of ramus vs antennomere from segment 3 to 10 about 2.5:4.5:5.3:5.0:4.0:3.6:3.0:2.5. Maxillary palpus (Fig. 20) slender; apex rounded; relative lengths of segments 2–4 about 1.4:1:1.5. Labial palpus (Fig. 19) short, about 0.5× length of maxillary palpus; apex rounded; relative lengths of segments 2–3 about 1:1.5. WP/LP=1.8. LE/WE=1.4. WP/WE=0.7.

Male genitalia (Fig. 18):—Elongate, 4.0× as long as wide. Penis 0.8× length of genitalia, slender, gradually widened towards base; apex rounded. Parameres elongate, 0.8× length of tegmen, widest at basal 1/5; apices rounded; mesal margins gradually narrowed from apex to basal 1/8, connected together near base; ventral apophyses separated. Basal piece 0.5× length of tegmen, base rounded.

Diagnosis. This species can be distinguished from the other species of the genus by the separate ventral apophyses of the parameres.

Distribution. Vietnam, Laos, Myanmar.

Jaechanax major (PIC), comb. nov.

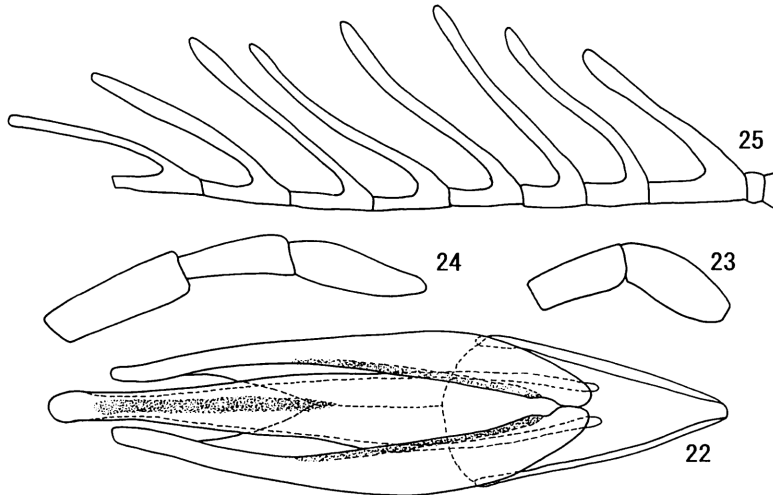
(Figs. 22–25)

Eubrianax major PIC, 1913, 172.

Eubrianax limbatithorax PIC, 1923, 9. *Syn. nov.*

Type material. Lectotype: ♂ (herewith designated, MHNP), “Java Rouges, n sp, Type, TYPE, *Eubrianax major* PIC.” (Number of syntypes unknown.)

Synonym. Lectotype: ♂ (herewith designated, MHNP), “J. B. CORPORAAL. Sumatra’s O. K. Medan 1917 20M, Type, TYPE, *limbatithorax* n. sp.” (Number of syntypes unknown.)



Figs. 22–25. *Jaechanax major* (Pic); 22, male genitalia; 23, labial palpus; 24, maxillary palpus; 25, male antenna.

Additional materials examined. 1♂ (BPBM), “MALAYA: Kuala Lumpur, Klang gates 31. XII. 1958/L. W. Quate Collector”; 1♂ (BPBM), “THAILAND Bana 5–10. IV. 1958/T. C. Maa Collector BISHOP MUS.”; 1♂ (NHMW), “S-THAIL., Betong 1993 Gunung Cang dun vill. Yala dist., 25.3–22.4. leg. Horak & Strnad”; 1♂ (NHMW), “SUMATRA 4. 4. 1997 2°49′N 99°18′E Kebun Sei Kopas, 200 m leg. Malicky”; 4♂♂ (NHMW, NTUC), “INDONESIA: W Java Pangandaran Nat. P. 50 km SE Ciamis lg. Schuh 13–15. 8. 1994”; 1♂ (FMC), “CHICAGO NAT. HIST. MUSEUM Gurungkot up., Cetabuto, Mindanao, P. I. F. Wernes leg. Jan 1–9. 1947. 1500 ft. elev. at light.”

Male. 4.9–5.2 mm long, 2.8–3.1 mm wide. General coloration yellowish brown; eyes black; antennal segments 3–11, tibia and tarsi blackish brown; last four abdominal sterna dark brown. Antenna (Fig. 25) pectinate from segment 3 to 10; relative lengths of ramus vs antennomere from segment 3 to 10 about 1.9:3.1:3.4:3.1:3.0:2.6:2.4:2.2; terminal segment narrowed at middle. Maxillary palpus (Fig. 24) slender; terminal segment apically tapering, apex rounded; relative lengths of segments 2–4 about 1.3:1:1.3. Labial palpus (Fig. 23) short, about 0.5× length of maxillary palpus; apex rounded; relative lengths of segments 2–3 about 1:1.2. WP/LP=2.0–2.4. LE/WE=1.3–1.4. WP/WE=0.7.

Male genitalia (Fig. 22):—Elongate, 4.2× as long as wide. Penis 0.8× length of genitalia, slender, gradually widened towards base; apex rounded. Parameres elongate, 0.8× length of tegmen, widest at basal 1/3; apices rounded, directed mesally; mesal margins gradually narrowed towards basal 5/32; ventral apophyses connected with each other, connecting area 0.27× length of parameres. Basal piece 0.5× length of tegmen, base rounded.

Variation. One specimen from Thailand and four from West Java have blackish brown body.

Distribution. Thailand, Malaysia, Indonesia (Sumatra, Java), Philippines (Mindanao).

Key to the Males of the Species of *Jaechanax*

1. Penis much longer than tegmen, base reaching base of basal pieces, sides toothed near apex; whole basal piece covered by parameres. *J. dentatus* sp. nov.
— Penis subequal to or shorter than tegmen; sides smooth; only parts of basal piece covered by parameres. 2.
2. Ventral apophyses of parameres separated. *J. insignis* (FAIRMAIRE).
— Ventral apophyses of parameres connected 3.
3. Apices of parameres angulate. *J. illiesi* (M. SATÔ).
— Apices of parameres rounded 4.
4. Apices of parameres directed mesally, connecting areas of ventral apophyses longer ($0.27 \times$ length of parameres); antennal rami relatively short. *J. major* (PIC).
— Apices of parameres directed upwards, connecting areas of ventral apophyses shorter ($0.05 \times$ length of parameres); antennal rami relatively long
. *J. elongatus* sp. nov.

Acknowledgments

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要 約

李 奇峰・佐藤正孝・楊 平世：マルヒラタドROMシ亜科の再検討。V. *Jaechanax* 属。——*Eubrianax* 属に近縁の新属 *Jaechanax* を記載し、それに含まれる2新種を記載した。また、従来 *Eubrianax* 属に含まれていた3種を新属に移し、1種をシノニムとした。あわせて新属に含まれる全5種の検索表を作成した。

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