

# Description of a new genus, *Minterpnosia* n. gen., and a new species of cicada (Hemiptera, Cicadidae, Cicadini, Leptopsaltriina) from Laos

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Lee Y. J. 2013. — Description of a new genus, *Minterpnosia* n. gen., and a new species of cicada (Hemiptera, Cicadidae, Cicadini, Leptopsaltriina) from Laos. *Zoosystema* 35 (1): 5-10.  
<http://dx.doi.org/10.5252/z2013n1a1>

## ABSTRACT

### KEY WORDS

Cicadidae,  
*Yezoterpnosia*,  
*Euterpnosia*,  
*Terpnosia*,  
new genus,  
new species,  
new combination.

A new cicada genus and a new species, *Minterpnosia chorus* n. gen., n. sp., is described from Laos. *Minterpnosia* n. gen. is closely related to *Yezoterpnosia* Matsumura, 1917 and *Euterpnosia* Matsumura, 1917, and therefore it is placed in the subtribe Leptopsaltriina Moulton, 1923 of the tribe Cicadini Latreille, 1802. A species of *Terpnosia* Distant, 1892 is transferred to *Minterpnosia* n. gen. to become *Minterpnosia mega* (Chou & Lei, 1997) n. comb.

## RÉSUMÉ

*Description d'un nouveau genre, Minterpnosia n. gen., et d'une nouvelle espèce de cigale (Hemiptera, Cicadidae, Cicadini, Leptopsaltriina) originaire du Laos.*

**MOTS CLÉS**  
Cicadidae,  
*Yezoterpnosia*,  
*Euterpnosia*,  
*Terpnosia*,  
genre nouveau,  
espèce nouvelle,  
combinaison nouvelle.

Un nouveau genre et une nouvelle espèce de cigale, *Minterpnosia chorus* n. gen., n. sp., sont décrits du Laos. *Minterpnosia* n. gen. est étroitement apparenté à *Yezoterpnosia* Matsumura, 1917 et à *Euterpnosia* Matsumura, 1917, il est donc placé dans la sous-tribu des Leptopsaltriina Moulton, 1923 de la tribu des Cicadini Latreille, 1802. Une espèce de *Terpnosia* Distant, 1892 est transférée dans *Minterpnosia* n. gen. : *Minterpnosia mega* (Chou & Lei, 1997) n. comb.

## INTRODUCTION

A new cicada species is described below from Xamneua, Houaphanh (Hua Phan) Province, Laos, which was found in the private collection of Dr M. S. Moulds. This new species appears closely allied to the species of the genera *Yezoterpnosia* Matsumura, 1917 (resurrected by Lee [2012a]; type species: *Cicada nigricosta* De Motschulsky, 1866 from Japan) and *Euterpnosia* Matsumura, 1917 (type species: *Euterpnosia chibensis* Matsumura, 1917 from Japan). However, the new species cannot be placed in *Yezoterpnosia* or *Euterpnosia* because of its unique morphology as discussed below. A new genus is described here to include this new species. As the new genus is closely allied to *Yezoterpnosia* and *Euterpnosia*, it is placed in the subtribe *Lep topsaltriina* Moulton, 1923 of the tribe *Cicadini* Latreille, 1802, following the classification of Lee & Hill (2010) and Lee (2010, 2012a).

This paper will serve as the third taxonomic study attempting to resolve the problem of polyphyly in *Terpnosia* Distant, 1892 after Lee (2012a, 2012b).

Terminology for morphological features follows that of Moulds (2005). Morphological measurements were made with a Mitutoyo vernier caliper in mm.

## SYSTEMATICS

Family CICADIDAE Latreille, 1802

Tribe CICADINI Latreille, 1802

Subtribe LEPTOPSALTRIINA Moulton, 1923

Genus *Miniterpnosia* n. gen.

TYPE SPECIES. — *Miniterpnosia chorus* n. sp., by present designation.

SPECIES INCLUDED. — This genus also includes *Terpnosia mega* Chou & Lei, 1997. This species is morphologically very similar to *Miniterpnosia chorus* n. gen., n. sp. and agrees well to the above description of *Miniterpnosia* n. gen. Here, this species is transferred from *Terpnosia* to *Miniterpnosia* n. gen. to become *Miniterpnosia mega*

(Chou & Lei, 1997) n. comb. *Miniterpnosia* n. gen. has been found from southern China and Indo-China.

ETYMOLOGY. — The generic name means “small *Terpnosia*”, having the prefix of mini-.

DIAGNOSIS. — Wings hyaline, with no infuscations, with marginal areas extremely narrow. Length between bifurcation point into median (M) vein and median 1+2 ( $M_{1+2}$ ) vein and bifurcation point into M vein and median 3+4 ( $M_{3+4}$ ) vein of forewing about twice the length between bifurcation point into M vein and  $M_{3+4}$  vein and base of M vein. Male opercula slightly longer than broad; widely separated. Fourth segment of male abdomen with no molar-like projections laterally. Timbal cover minute, rudimentary. Male abdominal sternites without tubercle-like projections. Uncus narrow, not bifurcate. Basal lobes of pygofer well developed.

## DESCRIPTION

Body small (14.8–21.0 mm long in males), slender. Head wider than mesonotum. Inner area of pronotum concolourous with pronotal collar. Lateral pronotal collar not dentate. Wings hyaline, with no infuscations, with marginal areas extremely narrow. Forewing basal portion of radius anterior 2 ( $RA_2$ ) vein about as long as or slightly shorter than longitudinal portion of  $RA_2$  vein. Length between bifurcation point into M vein and  $M_{1+2}$  vein and bifurcation point into M vein and  $M_{3+4}$  vein about twice the length between bifurcation point into M vein and  $M_{3+4}$  vein and base of M vein. Male opercula small, scale-like, slightly longer than broad, not extending beyond posterior margin of sternite II; widely separated from each other. Male abdomen cylindrical, slightly longer than head and thorax together. Posterior margin of male abdominal tergite 2 or 3 about as wide as or slightly narrower than mesonotum. Timbal cover minute, rudimentary. Fourth segment of male abdomen without molar-like projections laterally. Male abdominal sternites without tubercle-like projections. Male abdominal sternite VII distinctly separated from tergite 7 by folding. Male pygofer elliptical with narrowed apex in ventral view. Uncus narrow, not bifurcate. Basal lobes of pygofer well developed. Aedeagus slender near apex.

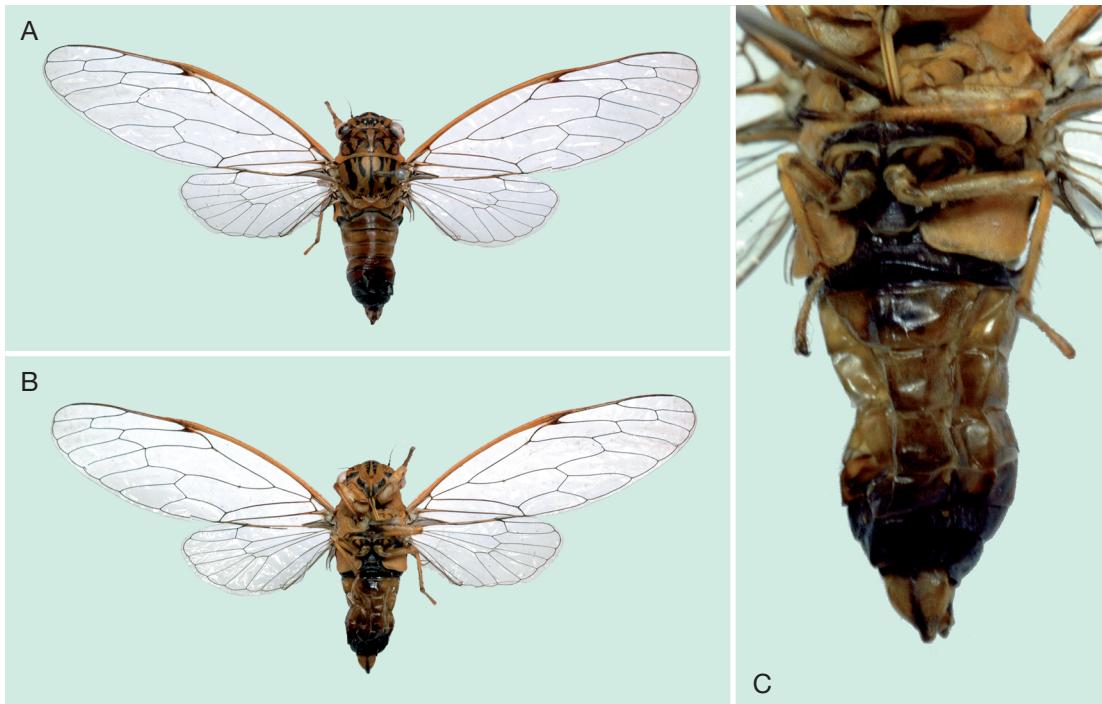


FIG. 1. — *Miniterpnosia chorus* n. gen., n. sp., holotype, male, Xamneua, Laos: **A**, dorsal habitus; **B**, ventral habitus; **C**, lateroventral view of a male operculum and a part of the abdomen. Body length 15,8 mm.

*Miniterpnosia chorus* n. sp.  
(Figs 1; 2)

TYPE MATERIAL. — Holotype: Laos, Xamneua, Ban Saleui, Mt Pan (Ph-Pan), 27.IV-2.V.2003, Harukie Karuba, ♂. The holotype is deposited in the collections of the Muséum national d'Histoire naturelle, Paris.

ETYMOLOGY. — The specific name is the Latin masculine noun “chorus” meaning “the chorus” in reference to the singing instinct of the cicadas.

DIAGNOSIS. — Postclypeus with a pair of longitudinal median fasciae from anterior margin to near to posterior margin of postclypeus. Mesonotum with sublateral longitudinal fascia continuous, not interrupted; with median longitudinal fascia always narrower than sublateral longitudinal fascia. Male operculum subquadrate. Basal lobes of male pygofer with rounded triangular apex of about 60°.

DESCRIPTION OF MALE

*Head* (Fig. 1A, B)

Head wider than mesonotum; reddish ochraceous (probably due to discolouration) with the following black marks: large median spot enclosing ocelli, reaching frontoclypeal suture but not reaching posterior margin of head; a pair of crescent moon shaped marks between the median spot and eye; a pair of small spots on posterolateral corners, touching posterior side of the crescent moon shaped marks; a pair of small transverse oblong spots on supra-antennal plates. Gena each with thick transverse fascia between postclypeus and eye. Lorum mostly black except for ochraceous anterior and lateral margins. Postclypeus moderately swollen; ochraceous with the following black marks: a pair of longitudinal median fasciae from anterior margin to near to posterior margin of postclypeus; long fasciae along anterior three pairs of transverse grooves; short fasciae along inner parts of the rest of transverse grooves, with

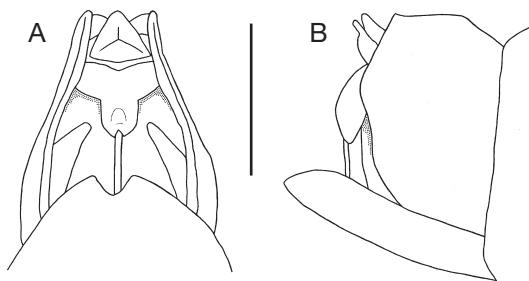


FIG. 2. — *Minterpnosia chorus* n. gen., n. sp., holotype, male pygofer, Xamneua, Laos: A, ventral view; B, lateral view. Scale bar: 1 mm.

their medial ends connected with the longitudinal median fasciae. Anteclypeus mostly fuscous except for ochraceous median ridge and anterior part. Rostrum ochraceous but black apically, with apex reaching hind coxae.

#### *Thorax (Fig. 1A, B)*

Pronotum reddish ochraceous (probably due to discolouration). Inner area of pronotum with the following black marks: a pair of median longitudinal fasciae, with their anterior and posterior ends widened laterad; a fascia along margin of inner area, except postero-median part; irregular shaped fasciae along fissures; a pair of short oblique longitudinal fasciae between about middle of paramedian fissure and posterior end of lateral fissure. Pronotal collar without distinct marks. Lateral pronotal collar not dentate. Mesonotum slightly greenish ochraceous (probably due to discolouration) with the following black marks: longitudinal median fascia extending posteriad to reach anterior margin of cruciform elevation; a pair of curved fasciae along lateral margin of submedian sigilla; a pair of thick longitudinal fascia on lateral sigilla, with posterior end sharply curved laterad; a pair of short triangular spot between anterior end of the fasciae along lateral margin of submedian sigilla and anterior end of the longitudinal fascia on lateral sigilla, touching anterior margin of mesonotum; a pair of spots enclosing scutal depression. Cruciform elevation ochraceous with black anterior subapical parts. Thoracic sternites pale ochraceous.

#### *Wings (Fig. 1A)*

Wings hyaline with no infuscations and slightly tinged with light brown. Forewing ulnar cell 3 comparatively long, slightly longer than medial cell. Venation mostly fuscous but ochraceous basally. Radius and subcostal vein ochraceous. Basal cell hyaline. Basal membrane and hindwing jugum gray.

#### *Operculum (Fig. 1C)*

Operculum ochraceous with broadly fuscous anterior margin and with narrowly fuscous anterolateral and medial margins; slightly longer than broad, subquadrate, not extending beyond posterior margin of sternite II. Two opercula widely separated from each other with gap of about  $\frac{3}{4}$  as wide as operculum. Meracanthus ochraceous.

#### *Abdomen (Fig. 1A-C)*

Abdomen cylindrical, about 1.14 times ( $n = 1$ ) as long as head and thorax together. Tergite 1 ochraceous with black posterior margin. Tergites 2-4 ochraceous. Tergite 5 brown. Tergite 6 dark brown to fuscous. Tergites 7 and 8 black. Posterior margin of tergite 2 or 3 slightly narrower than mesonotum. Timbal cover semicircular, very short, its length about  $\frac{1}{3}$  the largest width; mostly black except for posterior margin. Sternites I and II black. Sternites III-V grayish ochraceous. Sternite VI fuscous to black. Sternite VII black. Sternite VIII grayish ochraceous with longitudinal narrow median fuscous fascia and fuscous anterior margin.

#### *Genitalia (Fig. 2)*

Pygofer elliptical with narrowed apex in ventral view. Distal shoulder dull triangularly pointed. Uncal lobe not bifurcate, short and narrow with round apex, incised triangularly at middle, in ventral view; half moon shaped in lateral view. Basal lobes of pygofer well developed, with rounded triangular apex of about  $60^\circ$ . Aedeagus slender near apex.

MEASUREMENTS ( $n = 1$  MALE). — Median length of body: 15.8; median length of head and thorax together: 7.4; median length of abdomen: 8.4; width of head including eyes: 5.3; width of mesonotum: 4.8; width of posterior margin of abdominal tergite 2: 4.5; length of forewing: 23.1; width of forewing: 7.5; wing span: 48.8.



FIG. 3. — Holotype of *Miniterpnosia mega* (Chou & Lei, 1997) n. comb. (Northwest A&F University, Yangling, China): A, dorsal habitus; B, ventral habitus. Body length: 19 mm.

***Miniterpnosia mega* (Chou & Lei, 1997) n. comb.  
(Fig. 3)**

*Terpnosia mega* Chou & Lei in Chou *et al.* 1997: 210, 367, pl. 9 (100), figs 9-61.

TYPE LOCALITY. — Hunan, China.

DISTRIBUTION. — China (Hunan).

DIAGNOSIS. — Postclypeus with a pair of longitudinal median fasciae short, only on anterior part of postclypeus. Mesonotum with sublateral longitudinal fascia interrupted in middle and divided into two; with median longitudinal fascia broader, especially in posterior part, than sublateral longitudinal fasciae. Male operculum circular. Basal lobes of pygofer with widely truncated apex.

## DISCUSSION

*Miniterpnosia* n. gen. appears to be a sister group of *Yezoterpnosia* and *Euterpnosia* sharing the following synapomorphic characters: lateral pronotal collar not dentate; forewing basal portion of RA<sub>2</sub> vein more than half as long as longitudinal portion of RA<sub>2</sub> vein; male opercula short, scarcely reaching or extending just beyond posterior margin of sternite II; timbal cover small, rudimentary; uncus lobe not bifurcate; aedeagus slender near apex.

*Miniterpnosia* n. gen. appears closer to *Euterpnosia* than to *Yezoterpnosia* because of the following common characters: male opercula separated widely from each other with a gap more than  $\frac{2}{3}$  as wide as operculum; male abdominal tergite 3 about as wide as or slightly narrower than mesonotum; uncus lobe always narrow; basal lobes of pygofer well developed. However, *Miniterpnosia* n. gen. does not have a molar-like projection on each lateral part of the male 4th abdominal segment, which is peculiar to *Euterpnosia*.

*Miniterpnosia* n. gen. is distinguished from *Yezoterpnosia* by the following characters: body much smaller, 15.8-20.3 mm long in males (25.0-37.0 mm long in males of *Yezoterpnosia*); male opercula separated widely from each other with a gap more than  $\frac{2}{3}$  as wide as operculum (broader than long, nearly touching or separated with a gap less than half as wide as operculum in *Yezoterpnosia*); posterior margin of male abdominal tergite 3 about as wide as or slightly narrower than mesonotum (wider than mesonotum in *Yezoterpnosia*); basal lobes of pygofer well developed (minimal in *Yezoterpnosia*).

*Miniterpnosia* n. gen. is also similar to *Gudaba* Distant, 1906 with the following common characters: lateral pronotal collar not dentate; male opercula small, longitudinal, widely separated; timbal cover small, rudimentary; male abdominal tergite 3 about

as wide as mesonotum; uncal lobe not bifurcate. However, *Gudaba* is not thought to be a sister group of *Miniterpnosia* n. gen., distinguished as it has five apical cells on the hindwing (six apical cells in *Miniterpnosia* n. gen.), a tubercle-like projection on each lateral surface of the male abdominal sternites III and IV and a thick aedeagus.

*Miniterpnosia* n. gen. is also similar to *Puranoides* Moulton, 1917 with the following common characters: lateral pronotal collar not dentate; forewing basal portion of RA<sub>2</sub> vein about as long as longitudinal portion of RA<sub>2</sub> vein; male opercula small, widely separated; uncal lobe not bifurcate; aedeagus slender near apex. However, *Puranoides* is not thought to be a sister group of *Miniterpnosia* n. gen., distinguished by its well-developed timbal covers, wide abdomen (wider than mesonotum) and the absence of the basal lobes of pygofer.

*Miniterpnosia* n. gen. is also similar to *Leptosemia* Matsumura, 1917 with the following common characters: lateral pronotal collar not dentate; forewing basal portion of RA<sub>2</sub> vein about as long as longitudinal portion of RA<sub>2</sub> vein; male opercula small, longitudinal, widely separated; male abdominal tergite 3 about as wide as or slightly narrower than mesonotum; uncal lobe not bifurcate; aedeagus slender near apex. However, *Leptosemia* is not thought to be a sister group of *Miniterpnosia* n. gen., distinguished by the presence of a series of infuscations on the subapical margin of the forewing, well-developed timbal covers and the absence of the basal lobes of pygofer.

As Lee (2012a) discussed, *Terpnosia* is a genus belonging to another subtribe, Psithyristriina Distant, 1905, of Cicadini and is distinguished from *Miniterpnosia* n. gen. by the following characters: body much larger; pronotum lateral margin dentate; forewing basal portion of vein RA<sub>2</sub> extremely short; forewing with broad, transparent infuscations; male operculum broader than long; timbal cover well developed, covering most of timbal; male pygofer with a pair of triangular claspers behind uncal lobes; uncal lobes bifurcate.

In conclusion, *Miniterpnosia* n. gen. is very closely allied to *Euterpnosia* in the subtribe Leptopsaltriina of the tribe Cicadini, but it is distinguished from *Euterpnosia* and other genera as discussed above.

### Acknowledgements

I am indebted to Dr. M. S. Moulds for providing the specimen of *Miniterpnosia chorus* and to Dr Cong Wei (Northwest A&F University, Yangling, China) for providing image data of the holotype of *Miniterpnosia mega* n. comb., which were very useful for this study. I am grateful to H. Duffels, A. Sanborn, an anonymous reviewer and A. Ohler for thorough reviews and useful comments that improved the manuscript.

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Submitted on 5 April 2012;  
accepted on 5 September 2012;  
published on 29 March 2013.