



## New Pseudophyllinae from the Lesser Antilles (Orthoptera: Ensifera: Tettigoniidae)

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### Abstract

Two new Cocconitini Brunner von Wattenwyl, 1895 species belonging to *Nesonotus* Beier, 1960 are described from the Lesser Antilles: *Nesonotus caeruloglobus* Hugel, n. sp. from Dominica, and *Nesonotus vulneratus* Hugel, n. sp. from Martinique. The songs of both species are described and elements of biology are given. The taxonomic status of species close to *Nesonotus tricornis* (Thunberg, 1815) is discussed.

**Key words:** Orthoptera, Pseudophyllinae, Caribbean, Leeward Islands, Windward islands, Dominica, Martinique

### Résumé

Deux nouvelles sauterelles Cocconotini Brunner von Wattenwyl, 1895 appartenant au genre *Nesonotus* Beier, 1960 sont décrites des Petites Antilles : *Nesonotus caeruloglobus* Hugel, n. sp. de Dominique, et *Nesonotus vulneratus* Hugel, n. sp. de Martinique. Le chant des deux espèces est décrit et des éléments de biologie sont donnés. Le statut taxonomique des espèces proches de *Nesonotus tricornis* (Thunberg, 1815) est discuté.

### Introduction

Cocconotini species occur in most of the Lesser Antilles islands, including small and dry ones such as Terre de Haut in Les Saintes micro archipelago (S. Hugel, unpublished). All but *Sphaeropyga striolata* (Redtenbacher, 1892) belong to *Nesonotus* Beier, 1920. This latter genus has been erected by Beier to include species from the Lesser Antilles previously considered as belonging to *Bliastes* Stål, 1873. Recent field studies on the Lesser Antilles have provided many new Orthoptera species, some of which having being described over the last years (Hugel & Morin 2001, Desutter & Bland 2003, Hugel 2009, Otte & Perez-Gelabert 2009) and others awaiting for descriptions (Hugel & Desutter-Grandcolas in prep.). These field studies also allowed studying basic aspects of sound production and acoustico-vibratory behavior of Pseudophyllinae species from Guadeloupe (Stumpner *et al.*, in press), and the distribution of widespread species (Wetterer & Hugel 2008). In the present article, two new *Nesonotus* species from Dominica and Martinique are described.

### Material and methods

**Specimens examined.** The new taxa are mainly described on specimens recently collected in Martinique and Dominica islands in 2008. All specimens were collected during night by sight using a halogen headlamp and a net. Most of the male specimens were localized by their high pitched song.

**Morphological terminology.** Head morphology terminology follows Willemse (1959). Movable and articulated outgrowths are called spurs whereas immovable outgrowths are called spines (e.g. Otte & Alexander, 1983; Jin & Kevan, 1992; Rentz, 1985). The numbers of subapical spurs are given in the descriptions and does not take into account the apical spur. **Abbreviations.** F1, fore femora; F2, mid femora; F3, hind femora; FW, fore wing; HW, hindwing; O, ovipositor; Pro, pronotum; T1, fore tibia; T2, mid tibia; T3, hind tibia; Thx, thorax.

**Measurements.** Measurements have been performed on dry specimens. L: length; W: width; H: height (of pronotum lateral lobe or of ovipositor, both in the middle); all in mm.

**Materiel repository.** BMNH, The Natural History Museum, London (formerly British Museum of Natural History); DIC, Dominica Interpretation Center, Botanic Garden, Roseau (Dominica); MNHN, Muséum national d'Histoire naturelle, Paris (France); NHMW, Naturhistorisches Museum, Wien (Austria); ZISP, Zoological Institute, Russian Academy of Sciences, St. Petersburg (Russia); ZIUU, Uppsala Universitet, Zoologiska Museum (Sweden); Coll. S.H., Collection Sylvain Hugel, Strasbourg (France).

**Repository and collecting numbers.** MNHN-EO-ENSIFxxxx corresponds to the inventory number of MNHN ensifera. The codes following “Martinique2008” or “Dominique2008” corresponds to the specimen number from S.H. field pad.

**Scan electron microscopy (SEM).** SEM observations were performed using a Philips XL-30 ESEM with an acceleration of 20 MeV. Specimens were directly imaged, without metallization.

**Song recordings and analysis.** Recordings have been performed with an Audiotechnica AT822 stereo microphone, on a HDR HC1E Sony camcorder (sampling rate: 48 kHz) on the nightshot mode (to follow the insect behaviour). Song analysis has been performed with Clampfit 10.2 software. Song recordings are deposited in both S.H. and MNHN acoustic databases.

**Acoustic terminology.** Acoustic terminology is from Stumpner *et al.* (in press). All recordings were performed *in natura* at ambient temperature. The first harmonic (fundamental) is the only carrier frequency given in the text; the recording device used in the field usually does not allow defining whether it corresponds to the dominant frequency.

## Results

### *Cocconotini* Brunner von Wattenwyl, 1895 Genus NESONOTUS Beier, 1960

*N. tricornis* (Thunberg, 1815) [Saint Barthélémy]

The species is described after a subadult male deposited in ZIUU (repository number UPSZTY 115276) and not in ZISP as stated in Beier (1960). The species is also mentioned from Saint Martin (Beier, 1960) and Saba (Bland & Desutter-Grandcolas 2003) but this might correspond to a distinct species; unfortunately, Beier (1960) used specimens from Saint Martin and not Saint Barthélémy to redescribe the species.

*N. reticulatus* (Fabricius, 1793) [Guadeloupe]

A population from Montserrat was tentatively attributed to this species (Marske, 2004)

*N. caeruloglobus* Hugel, n. sp. [Dominica]

*N. vulneratus* Hugel, n. sp. [Martinique]

*N. salomonoides* (Brunner von Wattenwyl, 1895) [Martinique]

*N. denticulatus* (Brunner von Wattenwyl, 1895) [type locality unknown]

Specimens from Saint Lucia are present in BMNH (new geographic record)

*N. superbus* (Redtenbacher, 1892) [Saint Vincent]

*N. longelaminatus* (Brunner von Wattenwyl, 1895) [Grenada]

### *Nesonotus vulneratus* Hugel, n. sp.

(Figs. 1–15; tab. 1)

**Holotype. Male.** [Caribbean, Lesser Antilles], Martinique, Le Marigot, D1, Trace des Jésuites O, 650 m alt., 14°43'53"N, 61°04'40"O, 2.VIII.2008, vue de nuit [sight by night], enregistré [recorded], leg. S. Hugel, 1♂

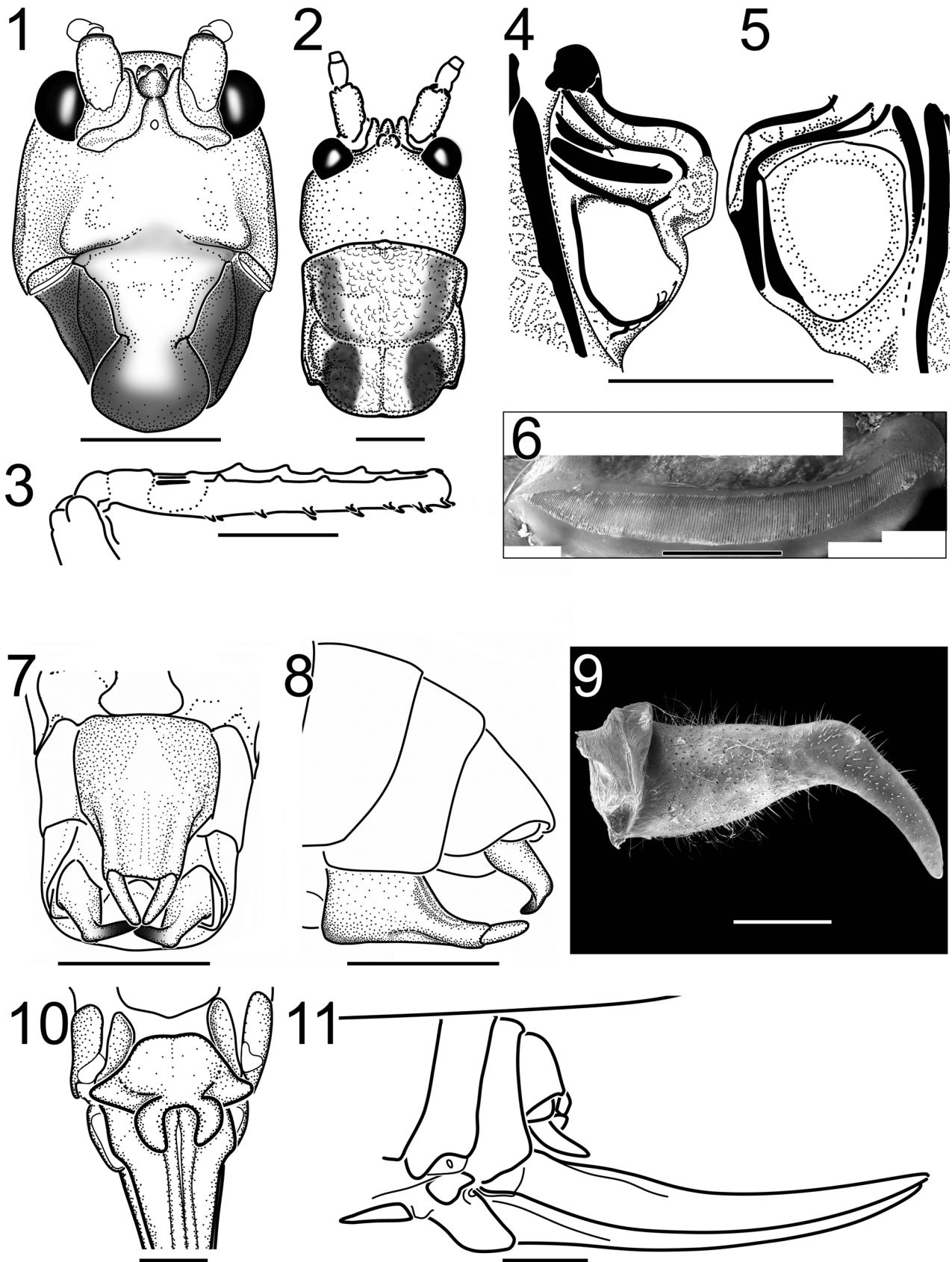
Martinique2008 020, MNHN (MNHN-EO-ENSIF3218). **Female.** [Caribbean, Lesser Antilles, Martinique], l'Alma, 10.III.[19]55; *Nesonotus* sp. ? *denticulatus* Brunner 1895 appartient au R[évérénd] P[ère] Pinchon à Fort de France Martinique, J. Bonfils det. IX 1969. Allotype. MNHN (MNHN-EO-ENSIF3219). **Paratypes.** [Caribbean, Lesser Antilles], Martinique, Fonds-Saint-Denis, plateau Boucher, sentier du Carbet, 650 m alt., 61°06'00"O - 14°43'09"N, 11.VIII.2008, ab larva, 1♂, Martinique2008 117; 2♀, Martinique2008 112, Martinique2008 114; all leg. & coll. S. Hugel. **Non type material.** Specimens from breeding of paratypes females: 2♂, 1♀; coll. S. Hugel.

**Diagnosis.** *N. vulneratus* Hugel, **n. sp.** is characterized by the following: Head light brown, without dark pattern except mandibles and labrum distally; median ocellus very small, circular, not colored (Fig. 1); face carina lateralis interna forming a basal bulge (fig.1); scape without conspicuous distal spine (Fig. 2); pro discus with parasagittal black pattern (Fig. 2); T1 with 4–5 conspicuous denticles on both dorsal carinae (Fig. 3); F1, F2 and F3 on both sides without distinct genicular spine; male subgenital plate neither notched, nor elongated (Fig. 7); male cerci with a long projection pointing inwards/downwards (figs. 7–9); female subgenital plate wider than long, with pointing lateral lobes, with a distinct U-shaped notch separating semi-circular distal lobes (Fig. 10); ovipositor regularly narrowed toward apex, slightly up-curved (Fig. 11).

**Description. Head.** Figs.1, 2. Antennae about twice as long as length of body, scape with a minute bulge, not a spine. Head wide, slightly wider than pronotum. Face carina lateralis interna well distinct and marked in the basal half of the frons; forming a basal bulge. Face carina lateralis externa well distinct and marked from below the eyes to the mandibles. Cuticle of head smooth, not wrinkled. Fastrigium of vertex: from above with basal bulges harboring lateral ocelli separated by a furrow, apex pointing, reaching the scrobae. Space between eyes about 1.7 times as wide as the wider diameter of eye. Eyes ovoid. **Thorax.** Fig 2. Pronotum with numerous tubercles in the prozone and mesozone; metazone less densely tuberculated; lateral lobes without distinct tubercles; anterior transversal sulcus shallow, distinct in the discus only; posterior transversal sulcus deep, well distinct in the discus and the lateral lobes; short deep sagittal sulcus crossing the posterior transversal sulcus in the middle; pro- and mesozone of the discus with indistinct sagittal carina; discus anterior margin convex, with an indistinct median bulge; posterior margin of the discus with a shallow median concavity; lateral lobe posteriorly well developed and strongly rimmed. Thoracic auditory opening ovoid, well distinct. Prosternum with spines of medium length. **Legs.** Fore coxae dorsally with anteriorly directed long spine. F1: rounded dorsally; with distinct ventral carinae; inner (anterior) carina with 4 spines; outer (posterior) carina non armed. F2 rounded dorsally; with distinct ventral carinae; outer (anterior) carina with 3–4 spines (usually 4); inner (posterior) carina not armed. F3 with 7–11 spines in the ventral carina. All genicular lobes non armed (rarely with an indistinct tubercle). T1 (Fig. 3) squared in cross section, with well distinct carinae; tibia not enlarged after the tympanal area (side view, fig 3); tympanal organ orifices equal, opened dorsally; inner (anterior) dorsal carina with 4–5 blunt spines; outer (posterior) dorsal carina with 3–5 blunt spines; inner (anterior) ventral carina with 6–7 subapical spurs; outer (posterior) ventral carina with 4–6 subapical spurs. T2 usually with 6 subapical spurs on both ventral carinae. T3 squared in cross section; with 4–5 inner (posterior) ventral subapical spurs; with 7–8 outer (anterior) ventral subapical spurs; with 8–11 inner (posterior) dorsal subapical spines; with 6–7 outer (anterior) dorsal subapical spines. **Wings.** Well developed; exceeding distinctly the abdomen and hind knees. FW: middle of large cells filled with fine veinlet nets. **Abdomen:** dorsal surface of tergites not modified.

**Male. Wings.** Figs. 4–6. Left FW mirror opaque, without nets of veinlets; about 1.4 times as high (maximal height) as wide (maximal width). File with ca. 170 lamellar teeth (Fig. 6). **Terminalia.** Figs. 7–9. Subgenital plate symmetrical, with weakly converging lateral sides; without posterior emargination; with distinct long styli. Cerci long, projecting interiorly and ventrally, with a small dorsal callosity in the inflection point. **Female. Terminalia.** Figs. 10–11. Ovipositor almost strait; regularly narrowing toward apex. Subgenital plate strongly modified; wider than long, with pointing lateral lobes, with a distinct U-shaped notch separating semi-circular distal lobes. Lateral sclerites ovoid, slightly concave.

**Color.** Similar in male and female. Light brown; head without black pattern except mandibles and labrum distally (Fig. 1). Apex of spines black, particularly in T1. T1 darkened. Pro discus with parasagittal black pattern (Fig. 2); FW veins and veinlets light brown, cells darkened, particularly large cells without veinlets. HW: slightly infumated. Male anal field darkened. Ovipositor apex darkened.



**FIGURE 1.** 11*Nesonotus vulneratus* Hugel, n. sp. 1, head (frontal view). 2, head and pronotum (dorsal view). 3, right T1 outer view. 4, male left FW, anal field. 5, male right FW, anal field. 6, stridulatory file, SEM, ventral view. 7, male terminalia, ventral view. 8, male terminalia left side view. 9, male right circus, SEM, inner  $\frac{3}{4}$  side view. 10, female terminalia, ventral view. 11, female terminalia, left side view. 6, 9 are scan electron microscope pictures. Scale bars: 6, 9: 1 mm; others: 5 mm.

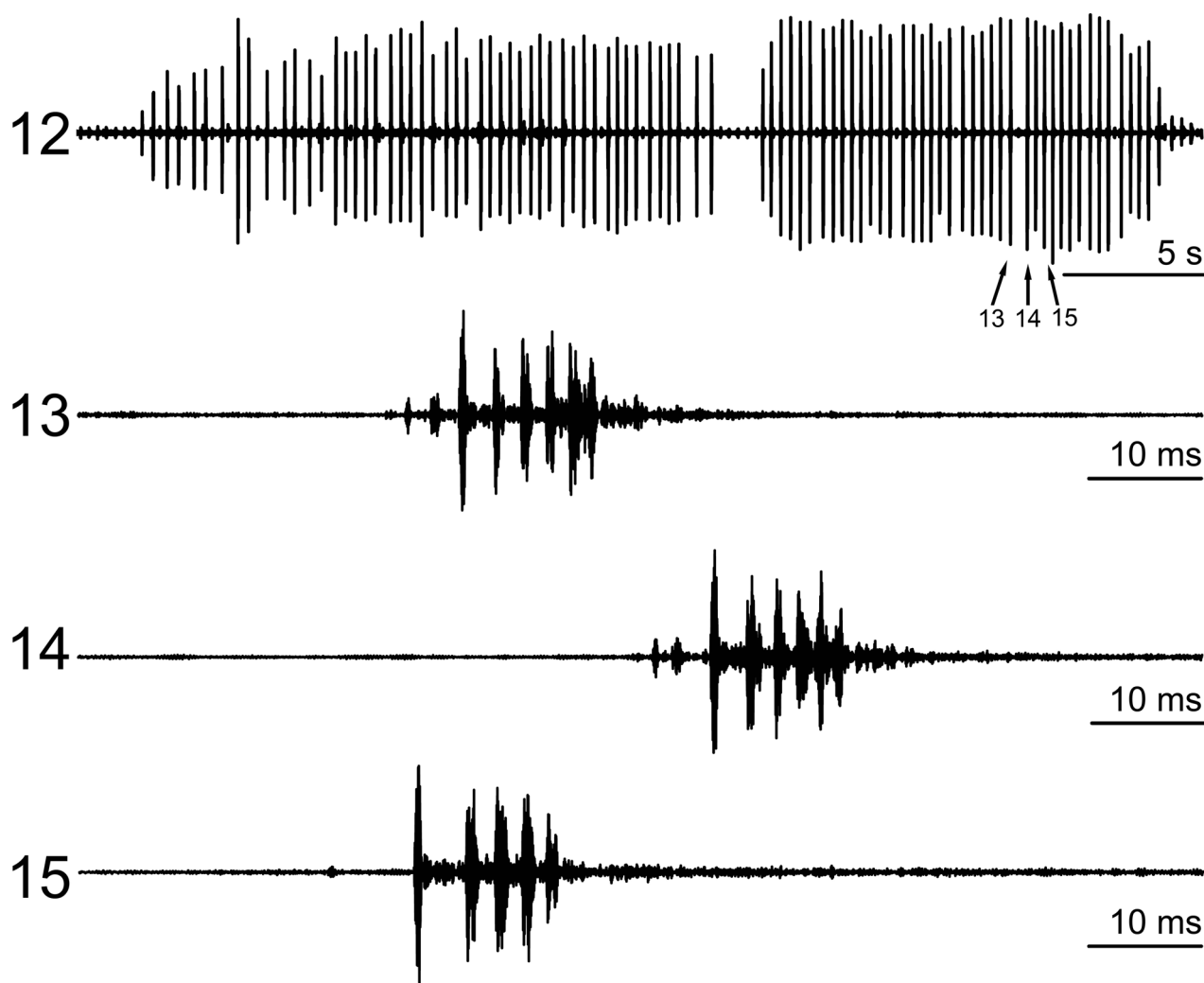


FIGURE 12–15. Oscillogram of the calling song of *Nesonotus vulneratus* Hugel, n. sp. in natura. 13–15 are details of 12 (arrows). Martinique, Le Morne Rouge, 2.VIII.2008, 22h00, 25°C.

TABLE 1. Measurements (mm) of *Nesonotus vulneratus* Hugel, n. sp.

	Body Head			Pronotum		H	Tibia			Femora			L	L	H	
	L	L	W	L	W		L	L	L	L	L	L				W
♂ Holotype	52.3	6.4	9.3	9.7	9.0	5.9	15.2	16.2	28.8	15.3	15.0	29.0	6.0	48.6		
♀ Allotype	58.1	8.2	11.5	12.0	10.7	7.0	16.8	20.8	36.1	18.0	18.3	33.5	6.2	51.3	26.4	3.5
♂ average (n=4)	52.5	6.4	9.5	9.8	9.2	5.8	15.4	16.8	29.0	15.4	15.5	29.0	5.6	46.3		
♂ min	47.0	5.9	9.3	9.5	8.8	5.6	15.2	16.2	28.7	15.2	15.0	28.1	5.0	44.6		
♂ max	60.4	7.0	9.7	10.2	9.6	6.0	15.5	17.6	29.3	15.7	16.2	29.6	6.0	48.6		
♀ average (n=4)	59.7	7.7	11.5	11.7	11.0	7.6	18.3	20.4	35.7	18.3	18.5	34.2	6.5	55.6	26.2	3.6
♀ min	55.5	7.2	11.1	11.5	10.7	7.0	16.8	19.6	35.0	17.9	18.3	33.5	6.2	51.3	26.0	3.4
♀ max	63.9	8.2	11.7	12.0	11.1	8.0	19.2	20.8	36.5	18.8	18.9	36.2	7.0	59.2	26.4	3.8

**Bioacoustics.** Fig. 12–15. *Nesonotus vulneratus* Hugel, n. sp. sings by night hours, staying in the highest branches of the undergrowth and probably the canopy as well. The call consists of long (> 1 min) irregular

repetitions of simple syllables. At 25°C, syllables are repeated at the rate of 2.65±0.06 syllable/s (syllable duration: 18.8±5.5 ms; inter-syllable interval: 375.7±9.7 ms). Syllables are made of 5.9±0.1 distinct trains of waves. The frequency peaks between 14–16 kHz. This species produces sometimes tremulations while singing. Unlike *Nesonotus reticulatus*, *Nesonotus vulneratus* Hugel, **n. sp.** does not tremulate on a regular basis (Stumpner *et al.*, in press).

**Biology.** This large species occurs on the hygrophilous forest of Martinique where it is often observed by night high on trees. In captivity, it feeds mostly on plant material and drills shelters on soft wood.

**Etymology.** After the strong bite of the species.

**Remark.** *N. vulneratus* Hugel, **n. sp.** is close to *N. salomonoides* also from Martinique, and to *N. denticulatus* from Saint Lucia (new record; type locality unknown). *N. vulneratus* Hugel, **n. sp.** can be distinguished from *N. salomonoides* by: the condition of T1 dorsal carinae (non armed in *N. salomonoides*); the condition of T1 genicular lobe (inner lobe with a spine in *N. salomonoides*); the head color (darkened except the clypeus in *N. salomonoides*); the size (smaller in *N. salomonoides*); the male cerci (upcurved with a basal bulge and a terminal spine in *N. salomonoides*); the female subgenital plate (longer than wide with a narrow notch in *N. salomonoides*). *N. vulneratus* Hugel, **n. sp.** can be distinguished from *N. denticulatus* by: the head color (large yellow median ocellus and darkened head in *N. denticulatus*); the male subgenital plate (with a V-shaped notch in *N. denticulatus*); the male cerci (with a terminal spine in *N. denticulatus*); the female subgenital plate (longer than wide with a narrow notch in *N. denticulatus*).

### *Nesonotus caeruloglobus* Hugel, **n. sp.**

(Figs. 16–30; tab. 2)

**Holotype. Male.** [Caribbean, Lesser Antilles] Dominique [Dominica], Springfield ATREC, Bee House Track, 15°20'53"N, 61°22'07"O, 394 m alt., 28.VII.2008, vue de nuit [sight by night], enregistré, Hugel S. leg., Dominique2008 070, MNHN (MNHN-EO-ENSIF3220). **Female.** [Caribbean, Lesser Antilles] Dominique [Dominica], Springfield ATREC, 15°20'47"N, 61°22'07"O, 355 m alt., 26.VII.2008, ab larva, vue de nuit [sight by night], Hugel S. leg, Dominique2008 113, Allotype. MNHN (MNHN-EO-ENSIF3221). **Paratypes.** Same as holotype, Springfield ATREC, river, 15°20'44"N, 61°22'10"O, 335 m alt., 26.VII.2008, vue de nuit [sight by night], Hugel leg, 1♂, Dominique2008 083, DIC; same as allotype, 26.VII.2008, ab larva, vue de nuit [sight by night], Hugel S. leg, coll. SH, 2♂, Dominique2008 111, Dominique2008 112, 1♀, Dominique2008 114; all coll. SH.

**Diagnosis.** *N. caeruloglobus* Hugel, **n. sp.** is characterized by the following: Head brown, usually with black patterns below the eyes, below the scrobae, on face (impressed points), on occiput (figs. 16, 17); median ocellus of medium size, circular, not colored (Fig. 16); face carina lateralis interna not forming a basal bulge (fig.16); scape with conspicuous spine (Fig. 16–17); pro discus with transversal black pattern (Fig. 17); T1 without dorsal denticles; fore wing costal field with fine reticulation (Fig. 18); male left FW with narrow mirror (about half as wide as maximal height, Fig. 19); male subgenital plate with a shallow notch (Fig. 22); T3 genicular lobe with a distinct spine on both side; male cerci up-curved, with a terminal spine, with a large basal bulge (figs. 22–24), without long projection; female subgenital plate longer than wide, with a narrow emargination (Fig. 25); ovipositor wide, slightly up-curved (Fig. 26).

**Description. Head.** Figs. 16, 17. Antennae about twice as long as length of body, scape with a distinct spine. Head wide, slightly narrower than pronotum. Face carina lateralis interna distinct in the basal half of the frons, not bulging on the basis. Face carina lateralis externa distinct from below the eyes to the mandibles. Cuticle of head smooth, not wrinkled. Fastigium of vertex: from above with basal bulges harboring lateral ocelli separated by a furrow, apex pointing, hardly reaching the scrobae; apex up curved in side view. Space between eyes about 1.5 times as wide as the wider diameter of eye. Eyes rounded, salient. **Thorax.** Fig 17. Pronotum with numerous tubercles in the discus; lateral lobes with shallow tubercles, lateral lobes mesozona wrinkled; anterior transversal sulcus shallow, distinct in the discus only; posterior transversal sulcus deep, well distinct in the discus and the lateral lobes; short deep sagittal sulcus crossing the posterior transversal sulcus in the middle; discus anterior margin convex; posterior margin of the discus with a shallow median concavity; lateral lobe ventral margin strongly rimmed. Thoracic auditory opening ovoid, well distinct. Prosternum with long divergent spines. **Legs.** Fore coxae dorsally with anteriorly directed long spine. F1: rounded dorsally; with distinct ventral carinae; inner

(anterior) carina with 3–4 spines; outer (posterior) carina unarmed. F2 rounded dorsally; with distinct ventral carinae; outer (anterior) carina with 4 spines; inner (posterior) carina unarmed. F3 with 6–8 spines in the ventral carina. All genicular lobes armed on both sides except F1 outer (posterior) and F2 outer (anterior) genicular lobes. T1 squared in cross section, with well distinct carinae; tibia enlarged after the tympanal area; tympanal organ orifices equals, opened dorsally; both dorsal carinae unarmed; inner (anterior) ventral carina with 6–7 (usually 6) subapical spurs; outer (posterior) ventral carina with 6 subapical spurs. T2 with 6 subapical spurs on both ventral carinae. T3 squared in cross section; with 6–8 inner (posterior) ventral subapical spurs; with 9–10 outer (anterior) ventral subapical spurs; with 8–11 inner (posterior) dorsal subapical spines; with 3–5 outer (anterior) dorsal subapical spines. **Wings.** Well developed; exceeding distinctly the abdomen and hind knees. FW: large cells fully filled with fine veinlet nets except on the basis of the costal area with middle sized cells free of veinlets (Fig. 18).

**Abdomen:** dorsal surface of tergites not modified.

**Male. Wings.** Figs. 19–21. Left FW mirror opaque, with nets of veinlets in the distal posterior margin; about 1.7 times as high (maximal height) as wide (maximal width). File with ca. 125 lamellar teeth (Fig. 21). **Terminalia.** Figs. 22–23. Subgenital plate symmetrical, with parallel lateral sides; with shallow posterior V-shaped emargination; with long styli. Cerci up-curved, with a terminal spine, with a large basal bulge (figs. 22–24), without long projection.

**Female. Terminalia.** Figs. 25–26. Ovipositor almost strait; regularly narrowing toward apex. Subgenital plate not modified, triangular; longer than wide, with a short narrow notch. Lateral sclerites ovoid, strongly concavous.

**TABLE 2.** Measurements (mm) of *Nesonotus caeruloglobus* Hugel, **n. sp.**

	Body Head			Pronotum			Tibia			Femora				FW O		
	L	L	W	L	W	H	I	II	III	I	II	III	III	L	L	H
							L	L	L	L	L	L	W			
♂ Holotype	49.5	4.6	7.3	10.3	8.9	6.8	11.7	13.7	22.4	12.6	12.8	23.7	5.4	42.5		
♀ Allotype	51.2	6.8	8.4	10.5	9.2	7.0	13.6	14.6	26.1	14.8	14.9	25.4	5.6	51.0	23.3	4.1
♂ average (n=4)	46.2	4.8	7.6	10.4	8.5	6.4	11.7	13.4	22.3	12.5	12.5	23.3	5.5	43.0		
♂ min	43.7	4.5	7.3	9.7	7.6	6.2	11.0	11.9	20.8	11.6	12.1	22.4	5.0	41.0		
♂ max	49.5	5.2	8.0	11.0	9.2	6.8	12.1	14.4	23.0	13.2	12.8	24.1	6.0	46.0		
♀ Paratype	47.5	5.6	8.2	10.3	9.4	6.1	14.0	15.5	26.5	14.7	14.9	26.3	5.9	49.0	20.6	4.1

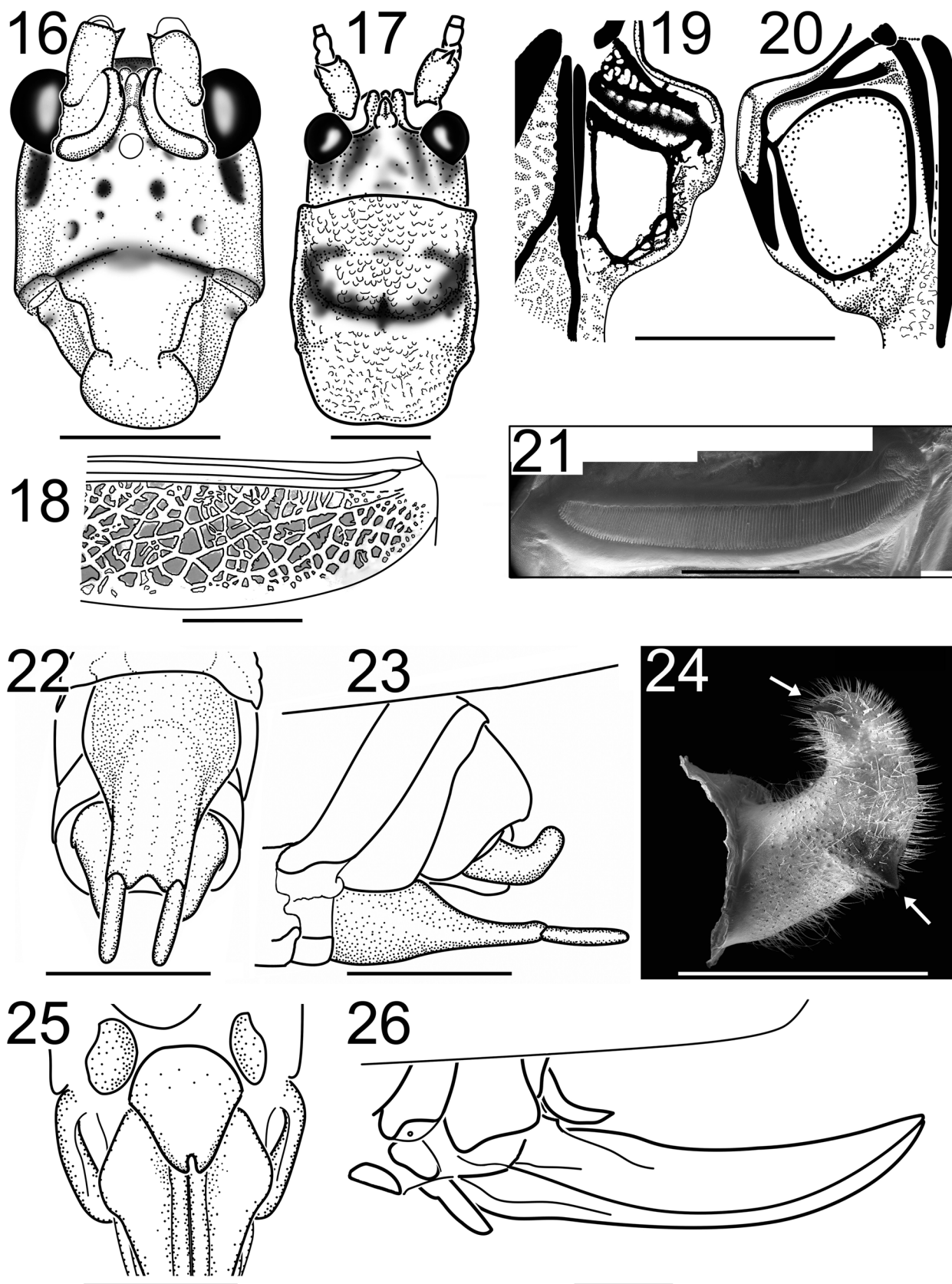
**Color.** Eyes blue in living specimens. Brown; head usually with black pattern below the eyes, on imprinted points, clypeus suture, occiput, pronotum carinae, lateral lobe mesozona, apex of spines and spurs (figs. 16, 17). FW veins and veinlets light brown, cells darkened, particularly large cells without veinlets on the costal field. HW: slightly infumated. Male anal field darkened, file black. Ovipositor apex darkened.

**Bioacoustics.** Fig. 27–30. *Nesonotus caeruloglobus* Hugel, **n. sp.** sings by night hours, from the undergrowth to the canopy. The call consists of long (> 1 min) relatively regular repetitions of verses. At 26°C, verses are repeated at a frequency of 0.99±0.1 verse/s (verse duration: 41.5±1.2 ms). Verses are formed by two syllables (first syllable duration: 7.9±0.3 ms with 4.7±0.1 trains of waves; second syllable duration: 24.3±1.2 ms with 12.9±0.1 trains of waves; inter syllable interval: 9.2±0.3 ms). The frequency peaks between 14–16 kHz. As *N. reticulatus*, *N. caeruloglobus* Hugel, **n. sp.** produces tremulations independent to the song production (Stumpner *et al.* in press).

**Biology.** This species occurs on the hygrophilous forest of Dominica, in preserved and garden forest.

**Etymology.** After blue eyes of living specimens.

**Remark.** *N. caeruloglobus* Hugel, **n. sp.** is close to *N. tricornis* from Saint Barthélémy, and to *N. reticulatus* from Guadeloupe. *N. caeruloglobus* Hugel, **n. sp.** can be distinguished from *N. tricornis* by: the size (much smaller in *N. tricornis*); F3 genicular lobes (mostly without spines in *N. tricornis*); the male left FW mirror (not as narrow in *N. tricornis* as in *N. caeruloglobus* Hugel, **n. sp.**); the male cerci (narrower with an inconspicuous basal bulge in *N. tricornis*). *N. caeruloglobus* Hugel, **n. sp.** can be distinguished from *N. reticulatus* redescribed by Bonfils (1966) by: the costal field (with very wide reticulation in *N. reticulatus*); the male left FW mirror (not as narrow in *N. reticulatus* as in *N. caeruloglobus* Hugel, **n. sp.**); the male cerci (with an inconspicuous basal bulge in *N. reticulatus*).



**FIGURE 16–26.** *Nesonotus caeruloglobus* Hugel, n. sp. 16, head (frontal view). 17, head and pronotum (dorsal view). 18, right FW, basis of costal field. 19, male left FW, anal field. 20, male right FW, anal field. 21, stridulatory file, SEM, ventral view. 22, male terminalia, ventral view. 23, male terminalia left side view. 24, male right cercus, SEM, inner side view, note the terminal spine and the large basal bulge (arrows). 25, female terminalia, ventral view. 26, female terminalia, left side view. Scale bars: 21, 24: 1 mm; others: 5 mm.



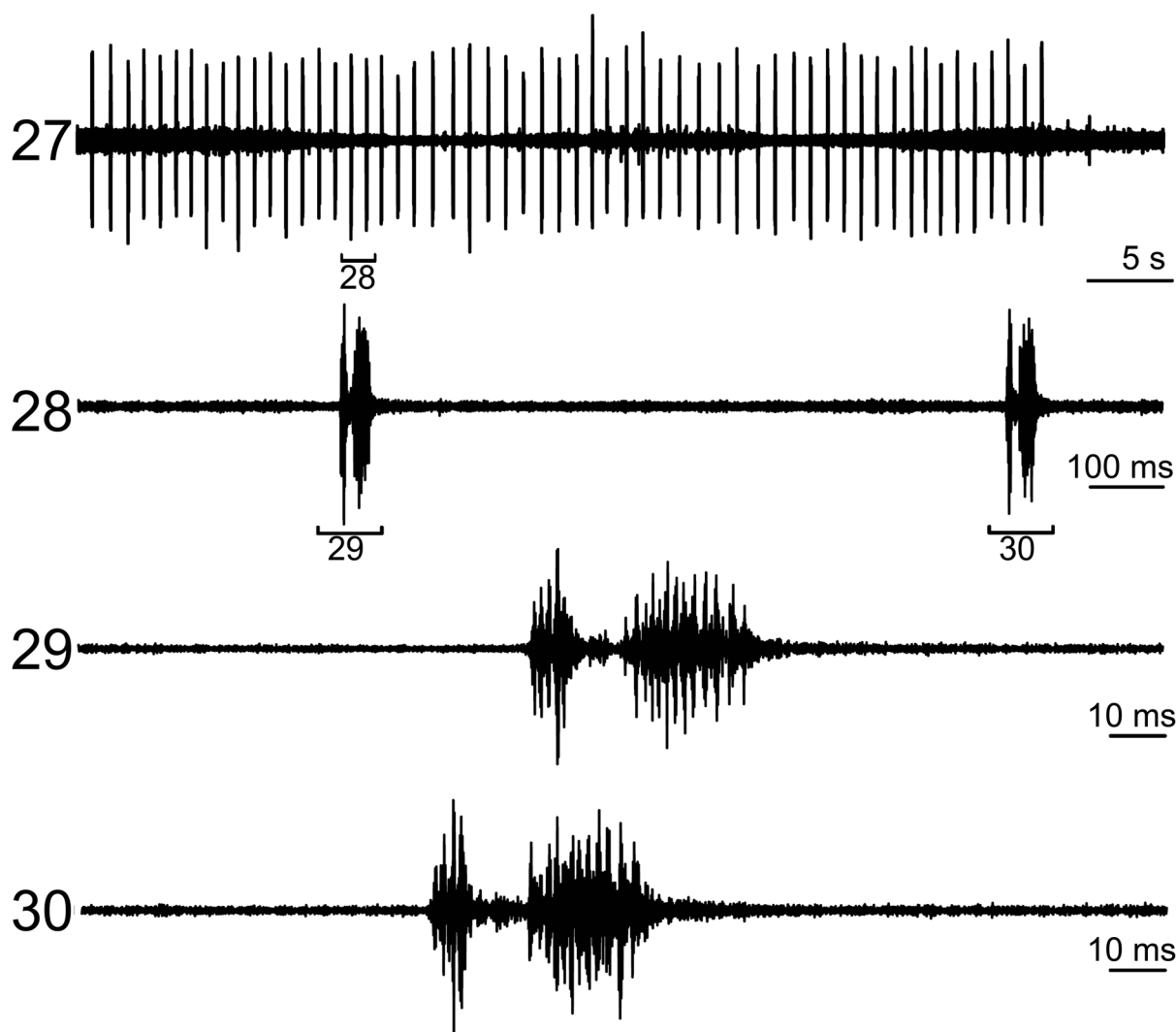


FIGURE 27–30. Oscillogram of the calling song of *Nesonotus caeruloglobus* Hugel, **n. sp.** in natura. 28 is a detail of 27 (bracket). 29, 30 are details of 28 (brackets). A *Neoconocephalus* sings in the background. Dominica, Springfield, ATREC, Bee House Track, 28.VII2008, 21h10, 26°C.

## Discussion

### Genus *Nesonotus*

The genus *Nesonotus* was erected by Beier (1960) to include species from Lesser Antilles previously considered as belonging to *Bliastes* Stål, 1873. Two groups of species might be recognized within *Nesonotus*: species of the Tricornis Group (*N. tricornis*, *N. reticulatus*, *N. caeruloglobus* Hugel, **n. sp.**) with head slightly narrower than pronotum, face with distinct but not marked carinae with a distinct spine on the scape, and with long prosternal spines; and species of the Denticulatus Group (all the other species including *N. vulneratus* Hugel, **n. sp.**) having wide head with very marked carinae, without distinct spine on the scape but a blunt knob, with prosternal spines of medium size. Although Beier (1960) included the sharp spine on the scape in the diagnosis of *Nesonotus*, this character state does not occur in all species yet included in this genus.

### Species of the Tricornis Group

The **Tricornis Group** is widespread from Dominica to the Northern part of the Lesser Antilles. Species of this group are very close and the exact taxonomic status of populations such as those from the island of Marie-Galante (new geographic record) and les Saintes micro-archipelago (new geographic record), but also Montserrat, Saba and Saint Martin would need additional sampling to be defined. At present stage, with the few specimens available, the

*Nesonotus* from Les Saintes and Marie Galante are clearly distinct from each other, the former being similar to *Nesonotus reticulatus* whereas latter to *Nesonotus caeruloglobus* Hugel, **n. sp.** The *Nesonotus* population from Monts Caraïbes in Guadeloupe would also deserve attention as all available specimens from this locality display a chromatic pattern unusual for *N. reticulatus*. Today, this population should be considered a melanic form of *N. reticulatus*. A similar case of melanic variation occurs for *Salomona redtenbacheri* Brongniart, 1897 (Hugel, 2009) and does not necessarily correspond to a distinct species. These taxonomic issues will be addressed later in a more comprehensive work on Pseudophyllinae from Lesser Antilles.

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