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Two new species of *Platymantis* (Anura: Ceratobatrachidae) from the Admiralty Archipelago, Papua New Guinea

STEPHEN J. RICHARDS[1,4], ANDREW L. MACK[2] & CHRISTOPHER C. AUSTIN[3]

[1]*Vertebrates Department, South Australian Museum, North Terrace, Adelaide, S.A. 5000, Australia.* [2]*Wildlife Conservation Society, P.O. Box 277, Goroka, EHP, Papua New Guinea. Current address: Carnegie Museum of Natural History, Powdermill Nature Reserve, 1847 Route 381, Rector, PA 15677, USA. E-mail: macka@carnegiemnh.org*
[3]*Department of Biological Sciences and Museum of Natural Science, Louisiana State University, 119 Foster Hall, Baton Rouge, LA.70803-3216, USA. E-mail: ccaustin@lsu.edu*
[4]*Corresponding author. E-mail: richards.steve@saugov.sa.gov.au*

Abstract

Two new species of the ceratobatrachid frog genus *Platymantis* are described from the Admiralty Archipelago, Papua New Guinea. *Platymantis admiraltiensis* **sp. nov.** and *P. latro* **sp. nov.** have been confused with *P. gilliardi* Zweifel, 1960 which is known with certainty only from New Britain in the Bismarck Archipelago. *Platymantis admiraltiensis* **sp. nov.** differs from *P. gilliardi* in its much longer legs (TL/SV 0.54–0.60 vs 0.51 in the holotype of *P. gilliardi*), and from all species of the morphologically conservative *P. papuensis* complex by its advertisement call, a long series of slowly-repeated (~ 0.4–1.9/s) yapping notes lasting up to 44 seconds. *Platymantis latro* **sp. nov.** differs from *P. gilliardi* and all other members of the *P. papuensis* complex in having a broad dark stripe laterally on the head and an advertisement call consisting of a single biphasic note with 10–20 short, irregularly spaced pulses followed by one long, musical pulse. Both new species are known only from the Admiralty Archipelago. This study confirms the utility of advertisement call structure for distinguishing among morphologically similar ceratobatrachid taxa.

Key words: Anura, Ceratobatrachidae, *Platymantis*, Papua New Guinea, Admiralty Islands, new species

Introduction

The Admiralty Archipelago is an isolated group of islands about 275 km north of mainland Papua New Guinea. With an area of 181,000 hectares Manus Island dominates the archipelago. Other smaller islands including Los Negros (5,300 hectares), Rambutyo, and dozens of additional tiny islands and atolls make up the island group. All of the islands are low and relatively flat, with the highest peak (Mt Dremsel, on Manus) reaching just 720 m elevation. The herpetofauna of the Admiralty Archipelago is moderately diverse with 43 species currently known from the island group, but frogs make up a small fraction of the fauna with only four native species recorded to date (Allison 1996). Two of these, *Litoria infrafrenata* (Günther, 1867) and *L. thesaurensis* (Peters, 1877) are widespread across mainland New Guinea and nearby islands. One species, *Discodeles vogti* (Hediger, 1934) is endemic to the archipelago and another, *Platymantis gilliardi*, was described from the Admiralty Archipelago (paratypes) and from New Britain (holotype) in the Bismarck Archipelago (Zweifel 1960, Allison 1996).

Prior to the description of *Platymantis gilliardi* at least four names had been applied to *Platymantis* from the Admiralty Archipelago. Hediger (1934) reported specimens of *Cornufer* (= *Platymantis*) *guppyi* Boulenger, 1884 from Manus Island, but Allison (1996) and Brown (1997) excluded this species from the Admiralties fauna. Vogt (1912) identified the paratypes of *P. gilliardi* as *Cornufer solomonis* Boulenger, 1884,

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Sternfeld (1920) reported *Cornufer corrugatus* Boulenger, 1882 from Pak Island, and Hediger (1933, 1934) reported *Rana rugata* van Kampen, 1923 from Manus Island. The latter two names are synonyms of *Platymantis papuensis* Meyer, 1874, a widespread and abundant species from northern New Guinea (Zweifel 1969). Zweifel (1960) demonstrated that the Admiralty Islands *Platymantis* are not referrable to *P. papuensis* or to *P. solomonis*, a large species known only from the Solomon Islands. He selected three Admiralty Island specimens from the series examined by Vogt (1912), as the paratype series of *Platymantis gilliardi*.

In his original description of *Platymantis gilliardi*, Zweifel (1960) noted differences in colour patterns of the holotype from New Britain and the paratypes from the Admiralty Islands. The most obvious difference is a broad, dark loreal stripe in the *gilliardi* paratypes, a feature that is lacking in the *gilliardi* holotype. Recent field work in Papua New Guinea, and re-examination of the types, has demonstrated that the type series of *P. gilliardi* is polytypic. In this paper we restrict to New Britain the known distribution of *P. gilliardi*, and describe as new species two taxa from the Admiralty Archipelago.

Material and methods

Specimens are deposited in the Natural Sciences Resource Centre collection of the University of Papua New Guinea (UP), and the South Australian Museum, Australia (SAMA). Measurements (to the nearest 0.1mm) were taken with dial calipers or a stereomicroscope fitted with an ocular micrometer, and follow Zweifel (1975). They are: snout-vent length (SVL), tibia length (TL), head width at the angle of the jaws (HW), head length as a straight-line distance from posterior of tympanum to tip of snout (HL), eye diameter (EYE), horizontal tympanum diameter (TYM), inter-narial distance (IN), eye-naris distance (EN) (to edge not center of nares), width of 3rd finger disc at right angle to digital axis (3FD) and width of penultimate phalanx of 3rd finger (3FP), width of 1st finger disc (1FP), and width of 4th toe disc (4TD) and 4th toe phalanx (4TP), as for 3rd finger.

Calls were recorded with a Sony TCM 5000 tape recorder and Sennheiser ME-66 microphone, and were analysed with the sound analysis program Avisoft SAS-Lab Pro. Dry-bulb air temperatures adjacent to calling males were made to the nearest 1.0 degree with a Miller & Weber quick-reading thermometer.

Results

Systematics of *Platymantis gilliardi* Zweifel, 1960

Zweifel (1960) provided a thorough description of the holotype (AMNH 64253) from New Britain, and three paratypes (AMNH 23545–7) from the Admiralty Archipelago. He noted that paratypes differ from the holotype in several aspects of colour pattern, the most conspicuous being a dark loreal region in the paratypes that is lacking in the holotype. Re-examination of the type series has confirmed these differences although the dark loreal region of the three paratypes has faded somewhat over time in preservative. During field work in the Admiralty Archipelago during 2001 and 2002 a number of frogs resembling *P. gilliardi* were obtained. Based on differences in advertisement call structure and consistent morphological differences two species are identified within these samples. One species closely resembles the paratype series of *P. gilliardi* and consistently possesses a dark loreal region, indicating that the absence of this character in the holotype of *P. gilliardi* is not due to variation within that species. The other species has much longer legs than the holotype of *P. gilliardi* (TL/SV 0.54–0.60 vs 0.51). Molecular data indicate a sister-species relationship between the two Manus taxa and only distant relationships between these taxa and *P. gilliardi* from New Britain (R. Brown and S. Richards, unpubl. data).

Based on differences in morphology and advertisement call structure we here describe the populations of *P. gilliardi*-like frogs from the Admiralty Archipelago as two new species. *Platymantis gilliardi* is currently known only from the island of New Britain.

***Platymantis admiraltiensis* sp. nov.**
(Figs 1– 6)

Type material. Holotype: SAMA R62799, Adult male, Chachuau Camp near Tulu 1 Village, Manus Island, Papua New Guinea (2º01.089' S, 146º47.807' E; ~ 20 m a.s.l.) collected by S.J. Richards on 8 June 2002. Paratypes: UPNG 10049, SAMA R62800–1 adult females, and UPNG 10050, SAMA R62802–3 adult males, same location as holotype, collected by S.J. Richards on 7 June 2002; SAMA R62804–5 adult males, Lorengau, Manus Island (2º01.870' S, 147º15.593'E; 5–10 m a.s.l.) collected by S.J. Richards on 4 June 2002; SAMA R62808–10 adult males, Tulu 1 Village, Manus Island (1º57.530' S, 146º50.085'E; 5–10 m a.s.l.) collected by S.J. Richards on 5–6 June 2002; SAMA R62806, adult male, Tingau Village, 27 km south-west of Lorengau (02 º05.76S, 147º06.33E; 296 m a.s.l.) and SAMA R62807, adult female, Salami Village, Los Negros Island, Manus Province (02º02.46S, 147 º24.24E; 5 m a.s.l.) collected by C. Austin on 28 August 2001; SAMA R62812–3, adult females, and R62811, R62814–6 adult males, Natnewai Camp, Manus Island (2º10.053'S, 147º15.09'E; 150 m a.s.l.) collected by A. Mack on 29 April 2001.

Diagnosis. A moderate sized *Platymantis* (males 32.7–38.4 mm, females 43.2–46.4 mm SVL) distinguished from congeners in the Papuan region by a combination of relatively long legs (TL/SVL 0.54–0.60), small terminal discs on toes, pronounced dorsal folds, no dark loreal stripe, a mottled pattern on the posterior of the thighs, and an advertisement call consisting of a long series of slowly repeated (0.4–1.9 notes/s) yapping notes.

Description of Holotype. Adult male with vocal slits. Head slightly longer than wide (HL/HW 1.04), canthus rostralis straight, gently rounded; loreal region oblique, slightly concave; nares closer to snout than eye, oriented postero-laterally; tympanum large (TYM/EYE 0.72), prominent, annulus abutting strong supratympanic fold dorsally; vomerine teeth in two large clumps at postero-medial edge of choanae; tongue oval, deeply bifid posteriorly. Skin finely granular dorsally with numerous longitudinal folds, most prominent folds forming four pairs of lyrate-shaped ridges on dorsum. First pair starts behind each eye, subsequent pairs becoming progressively shorter posteriorly. A short (1.8 mm) pair of folds between orbits; scattered low tubercles dorsally and laterally; most of throat and chest minutely roughened; anterior edge of throat, posterior of thighs and abdomen slightly granular; an elongate (1.6 mm) tubercle oriented postero-laterally at rear edge of tympanic membrane. Limbs moderately long (TL/SV 0.58); relative lengths of fingers 1>3>2>4, subarticular tubercles prominent, fingers unwebbed; tips of digits slightly wider than penultimate phalanx, with weak circum-marginal grooves. Relative length of toes 4>3>5>2>1; subarticular tubercles prominent, one tubercle on right foot swollen, deformed; toes with trace of basal webbing; tips of digits expanded with prominent circum-marginal grooves; toe discs larger than finger discs (3FD/4TD 0.56).

Dorsally dark brown with broad, darker brown cross-bars on limbs and two small dark patches in loreal region, one anterior of eye and other posterior of naris. Supratympanic fold with narrow dark line along ventral edge. Laterally paler than dorsum, with pigmentation forming irregular and diffuse brown patches. Upper and lower lips with brown bars, tympanic membrane mottled with dark and pale brown, interior edge of annulus with narrow ring of dark pigment. Snout anterior of midpoint between eyelids paler brown than rest of dorsum. Posterior of thighs mottled with dark and pale brown. Subarticular tubercles less intensely pigmented than palmar and plantar surfaces. Ventrally cream, with scattered and diffuse brown stippling around angle of jaws.

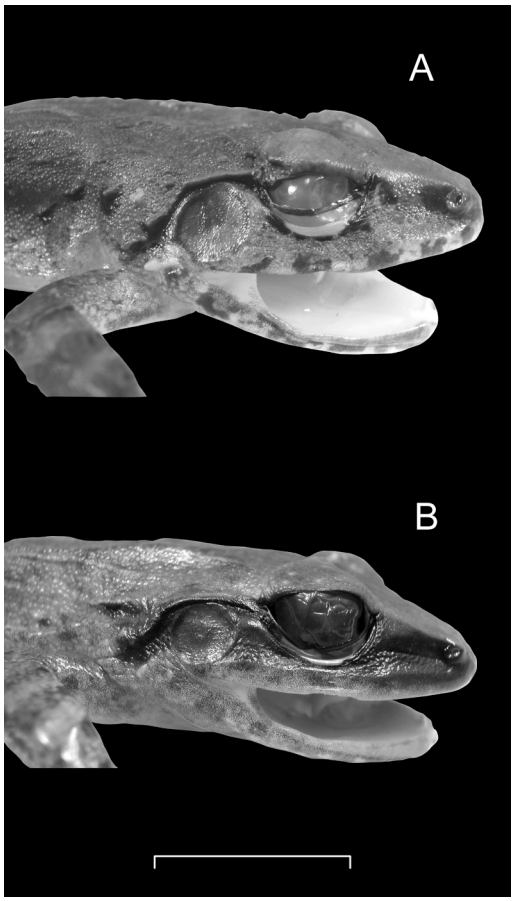

FIGURE 1. Lateral view of heads of A. *Platymantis admiraltiensis* **sp. nov.** holotype (SAMA R62799) and B. *P. latro* **sp. nov.** holotype (SAMA R62819) showing distinct lateral band of *P. latro* **sp. nov.** Scale = 10 mm.

Measurements of the holotype: SV 36.7; TL 21.4; HW 15.2; HL 15.8; EN 4.3; IN 3.6; EYE 5.0; TYM 3.6; 4TD 1.6; 4TP 0.7; 3FD 0.9; 3FP 0.8; 1FD 0.9.

Variation. Variation in measurements and proportions of the paratypes are presented in Table 1. Males are 32.7–38.4 mm, females 43.2–46.4 mm SV. Dorsal colour pattern is highly variable. Ground colour is pale to dark brown; one specimen is grey. The dorsum may be unicolor or mottled (n = 12), there may be a narrow (0.2–2.0 mm wide, n = 3) or broad (n = 2) mid-vertebral stripe, and/or a pair of pale dorso-lateral stripes (n = 3). Subarticular tubercles on all specimens are conspicuously less pigmented than palmar and plantar surfaces, and pigmentation is nearly absent on tubercles of some paratypes. Pale markings on the posterior surfaces of the thighs form discrete spots or short irregular bars in all specimens. Iris pale brown, usually with narrow darker brown reticulations.

Advertisement call. The advertisement call is a very long (full sequences 21–44 sec) series of slowly repeated (~ 0.4–1.9 notes/s), yapping notes (Table 2; Figure 6). Each series starts slowly and irregularly, and note repetition rate increases in terminal sequences of the series. Notes have two discrete components, a finely pulsed introductory 'segment' (*sensu* Zweifel 1969) followed without pause by a longer unpulsed segment. Call characteristics are presented in Table 2. Some of the calls analysed did not comprise full sequences, which normally exceeded 20 sec in length but were difficult to record. A single call is illustrated and compared with *P.latro* **sp. nov.** and *P. papuensis* in Figure 6.

Comparisons with other species. The size, general habitus, small finger and toe discs, prominent dorsal folds, and advertisement call structure of *P. admiraltiensis* **sp. nov.** suggest affinities with the informal *P. papuensis* 'complex', a morphologically conservative group of predominantly terrestrial *Platymantis*. From *P. bimaculatus*, *P. cheesmanae* and *P. wuenscheorum* it differs in its much larger size (male SV to 38 mm vs < 32

mm), from *P. punctatus* in its vestigial (vs extensive) webbing between the toes and from *P. batantae* by its larger size (female SV 46.4 mm vs < 40 mm in *batantae*; Zweifel 1969), and by having a strongly mottled (vs not mottled) pattern on the posterior of the thighs. *P. admiraltiensis* is similar morphologically to *P. adiastolus*, *P. cryptotis*, *P. papuensis*, *P. schmidti* and *P. weberi*. It differs from all of these species by the distinctly mottled posterior surfaces of the thighs, and by its advertisement call. The basic structure of individual notes is similar among these species, but note repetition rates at similar temperatures are dramatically different. The calls of *P. adiastolus*, *P. cryptotis*, *P. papuensis*, and *P. schmidti* have been analysed and described in detail previously (Zweifel 1969, Menzies 1982, Günther 1999, Brown *et al*. 2006). *P. admiraltiensis* has a call rate (0.4–1.9 notes/s, see Table 2) that is much slower than *P. adiastolus* (4.3 notes/s; Brown *et al*. 2006), *P. cryptotis* (~10 notes/s; Günther 1999), *P. papuensis* (~4.5 notes/s; Günther 1999), *P. schmidti* (12.8 notes/s; Brown *et al*. 2006) and *P. weberi* (~8 notes/s; Richards unpublished data). The slow call rate of *P. admiraltiensis* is not attributable to low temperatures. Recordings of this species on Manus Island, an island close to the equator, were made at temperatures of 28ºC, much higher than temperatures at which the other taxa were recorded (see references above).

TABLE 1. Measurements and proportions of *Platymantis admiraltiensis* **sp nov.** and *P. latro* **sp. nov.** Measurements are presented as mean (SD) and range.

	P. admiraltiensis male n = 13	*P. admiraltiensis* female n = 6	*P. latro* male n = 9	*P. latro* female n = 6
SV	35.89 (1.63)	44.55 (1.33)	33.49 (2.09)	52.13 (4.64)
	32.7–38.4	43.2–46.4	30.9–38.3	46.2–58.3
TL	20.70 (0.60)	25.53 (0.63)	16.18 (0.93)	25.08 (2.17)
	19.7–21.6	24.6–26.1	15.1–18.2	22.0–27.2
TL/SV	0.58 (0.02)	0.57 (0.02)	0.48 (0.02)	0.48 (0.01)
	0.54–0.60	0.54–0.59	0.46–0.50	0.47–0.49
EN	3.82 (0.29)	4.60 (0.37)	3.33 (0.36)	5.08 (0.53)
	3.2–4.3	4.1–5.0	3.0–4.1	4.4–5.7
IN	3.28 (0.17)	4.0 (0.28)	3.67 (0.22)	5.17 (0.38)
	2.9–3.6	3.7–4.4	3.4–4.1	4.7–5.7
EN/IN	1.17 (0.06)	1.15 (0.07)	0.91 (0.08)	0.98 (0.06)
	1.09–1.31	1.02–1.22	0.79–1.03	0.90–1.05
HW	14.24 (0.87)	17.60 (0.81)	13.15 (1.07)	21.12 (1.95)
	12.1–15.6	16.5–18.8	11.9–15.5	18.6–23.7
HL	14.57 (0.77)	17.33 (1.04)	14.12 (1.01)	21.02 (2.22)
	12.7–15.8	16.0–18.4	13.3–16.5	18.3–23.7
HW/SVL	0.40 (0.02)	0.39 (0.01)	0.39 (0.01)	0.40 (0.01)
	0.37–0.43	0.377–0.409	0.365–0.404	0.402–0.407
HL/SVL	0.41 (0.02)	0.39 (0.02)	0.42 (0.01)	0.40 (0.01)
	0.37–0.43	0.366–0.408	0.406–0.434	0.387–0.422
EYE	4.81 (0.33)	5.88 (0.53)	4.96 (0.25)	6.60 (0.76)
	4.1–5.3	5.1–6.7	4.5–5.3	5.6–7.6
EAR	3.18 (0.22)	3.31 (0.37)	3.14 (0.26)	3.98 (0.35)
	2.8–3.6	2.8–3.7	2.7–3.5	3.6–0.46
EYE/SVL	0.13 (0.01)	0.13 (0.01)	0.15 (0.01)	0.13 (0.01)

continued overleaf.

TABLE 1. (continued)

	P. admiraltiensis male n = 13	*P. admiraltiensis* female n = 6	*P. latro* male n = 9	*P. latro* female n = 6
	0.125–0.147	0.12–0.15	0.13–0.16	0.118–0.133
EAR/EYE	0.66 (0.04)	0.56 (0.05)	0.63 (0.04)	0.61 (0.05)
	0.584–0.729	0.49–0.63	0.57–0.71	0.53–0.68
4TD	1.27 (0.15)	1.40 (0.30)	1.04 (0.12)	1.47 (0.29)
	1.1–1.6	1.0–1.7	0.8–1.2	1.2–2.0
4TP	0.60 (0.08)	0.67 (0.09)	0.53 (0.07)	0.85 (0.17)
	0.50–0.75	0.55–0.80	0.4–0.6	0.7–1.1
4TP/4TD	0.47 (0.08)	0.49 (0.10)	0.52 (0.06)	0.37 (0.28)
	0.38–0.63	0.32–0.60	0.41–0.60	0.00–0.58
3FD	0.72 (0.08)	0.85 (0.06)	0.75 (0.07)	1.09 (0.18)
	0.60–0.90	0.80–0.95	0.6–0.8	1.0–1.35
3FP	0.64 (0.06)	0.76 (0.05)	0.62 (0.10)	0.95 (0.10)
	0.60–0.80	0.7–0.8	0.5–0.7	0.9–1.1
3FP/3FD	0.90 (0.09)	0.89 (0.06)	0.83 (0.07)	0.88 (0.04)
	0.75–1.08	0.82–1.0	0.71–0.88	0.81–0.90
1FD	0.79 (0.07)	0.92 (0.09)	0.69 (0.10)	1.14 (0.11)
	0.7–0.9	0.80–1.1	0.50–0.85	1.0–1.3

TABLE 2. Call parameters of *Platymantis admiraltiensis* **sp. nov.** Data are presented as mean (SD) and range. Time is in seconds.

Frog number	Number of calls	T^a (°C)	notes / call	call length (sec)	note rep. rate (notes/s)	note length (n = 193)	inter-note length (n = 183)	Dominant Frequency (Hz)
SAMA R62804	2	28	8–21	17.6–19.3	0.4–1.04	0.104 (0.006) 0.096–0.124	1.254 (1.326) 0.272–5.687	2960–3153
SAMA R62808	3	28	23–33	12.8–26.6	0.83–1.82	0.123 (0.019) 0.075–0.21	0.658 (0.663) 0.208–4.905	3130–3657
no specimen	1	28	5	10.3	0.39	0.113 (0.002) 0.111–0.116	2.433 (0.951) 1.667–3.628	3167
SAMA R62799	4	27	7–32	4.7–25	0.36–1.94	0.127 (0.019) 0.1–0.244	0.808 (0.843) 0.241–4.952	2889–3109

Etymology. The specific name refers to the Admiralty Archipelago, which encompasses the known distribution of this species.

Distribution. Known only from Manus and Los Negros Islands, Manus Province, Papua New Guinea (Figure 7).

Natural history. Males called from exposed or semi-exposed positions in forest litter, or from the base of grass tussocks in disturbed garden habitats, after heavy rain. This species appeared to be at least as abundant in gardens around Tulu 1 Village where canopy cover was severely reduced, as they were in closed canopy forest at Chachuau Camp. Given the ability of this species to persist in heavily degraded habitats, and its wide distribution on Manus and Los Negros Island, we suggests that this species should be listed as 'Least Concern' using the criteria of the Global Amphibian Assessment.

FIGURE 2. Palmar views of A. *Platymantis admiraltiensis* **sp. nov.** holotype (SAMA R62799) and B. *P. latro* sp. nov holotype (SAMA R62819). Scale = 5 mm.

***Platymantis latro* sp. nov.**
(Figs 1–6)

Holotype: SAMA R62819, Adult male, Chachuau Camp near Tulu 1 Village, Manus Island, Papua New Guinea, (2º01.089' S, 146º47.807' E; 20 m a.s.l.) collected by S.J. Richards on 8 June 2002.

Paratypes: UPNG 10051, SAMA R62820, adult females, same location as holotype, collected by S.J. Richards on 7 June 2002; SAMA R62824–5 adult females, Tingau Village, 27 km south-west of Lorengau, Manus Island (02 º05.76S, 147º06.33E; 296 m a.s.l.), collected by C. Austin on 28 August 2001; SAMA R62826 adult female, Natnewai Camp, Manus Island (2º10.053'S, 147º15.09'E; 150 m a.s.l.) collected by A. Mack on 29 April 2001.; SAMA R62827, adult female, Penchal Village, Rambutyo Island, Manus Province (02º19.70S, 147º46.00E; 58 m a.s.l.), collected by C. Austin on 3 September 2001; SAMA R62828–9 adult males, Salami Village, Los Negros Island, Manus Province (02º02.46S, 147 º24.24E; 5 m a.s.l.) collected by C. Austin on 28 August 2001; UPNG 10052–4, SAMA R62821–3, adult males, Lorengau, Manus Island (2º01.870' S, 147º15.593'E; 5–10 m a.s.l.), collected by S. Richards on 4 June 2002.

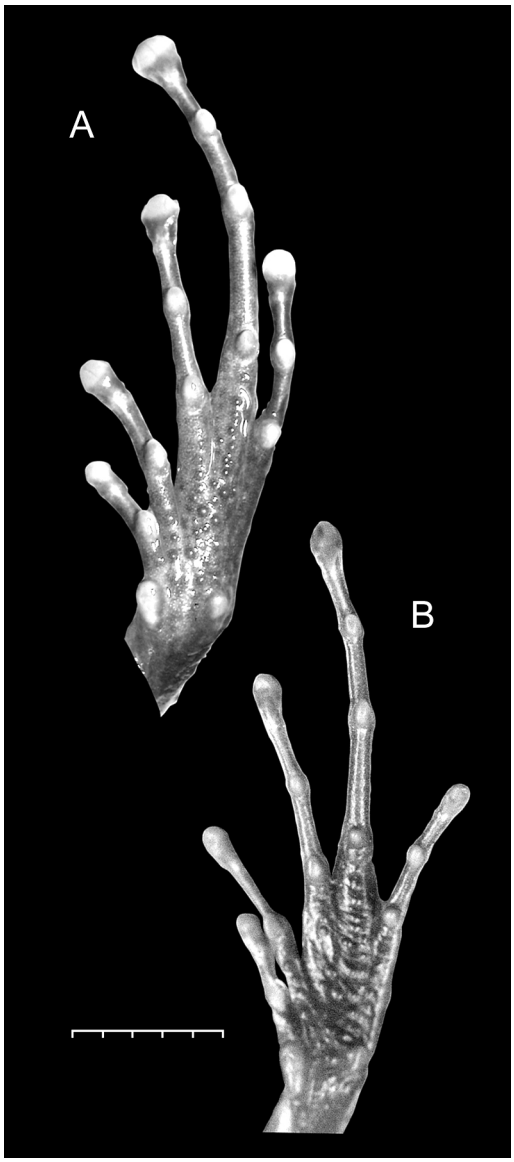

FIGURE 3. Plantar views of A. *Platymantis admiraltiensis* **sp. nov.** holotype (SAMA R62799) and B. *P. latro* sp. nov holotype (SAMA R62819). Scale = 5 mm.

Diagnosis. A moderately large *Platymantis* (males 32.0–38.3 mm, females 52.4–58.3 mm) distinguished from congeners in the Papuan region by a combination of very short legs (TL/SVL 0.46–0.50), small terminal discs on digits, reduced dorsal folds, a dark loreal stripe, and a biphasic advertisement call consisting of an introductory "rattle" followed by a single musical pulse.

Description of holotype. Adult male with vocal slits, calling when collected. Head longer than wide (HL/HW 1.06), canthus rostralis straight, well defined; loreal region oblique, slightly concave; nares closer to snout than eye, oriented postero-laterally; snout rounded in lateral view, broadly rounded in dorsal view; tympanum moderately large (TYM/EYE 0.64), annulus low but distinct, obscured by curved supratympanic fold dorsally; vomerine teeth in two prominent clumps between and posterior to choanae; tongue oval, deeply bifid posteriorly. Snout minutely roughened; eyelids with numerous low tubercles and one large, rounded tubercle; skin finely granular dorsally and laterally; a series of low, longitudinal folds on dorsum, the most prominent being lyrate and starting behind each eye, converging towards the mid-dorsum at a point above the arms. A long dorso-lateral fold begins lateral to, and overlaps (by 4 mm), the prominent pair of dorsal folds, terminating above groin; additional short folds between orbits, on mid-dorsum, and laterally. Anterior one third of throat granular, remainder of throat and chest smooth, abdomen granular posteriorly. Limbs short (TL/SV

0.48); relative lengths of fingers 3>2>1>4; subarticular tubercles prominent, fingers unwebbed; tips of digits slightly wider than penultimate phalanx, with shallow circum-marginal grooves. Relative length of toes 4>3>5>2>1; subarticular tubercles prominent, heavily pigmented; toes with trace of basal webbing; tips of digits expanded with deep circum-marginal grooves; toe discs larger than finger discs (3FD/4TD 0.73).

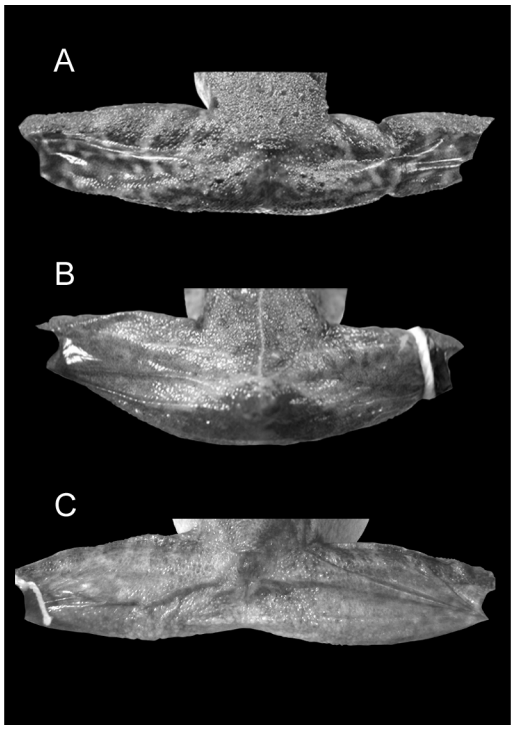

FIGURE 4. Thigh patterns of A. *Platymantis admiraltiensis* **sp. nov.** holotype (SAMA R62799), B. *P. latro* **sp. nov.** holotype (SAMA R62819) and C. *P. papuensis* showing distinct mottling of thighs of *P. admiraltiensis* **sp. nov.**

Dorsally brown, paler creamy brown laterally with scattered darker brown patches; a narrow, pale brown mid-vertebral line from snout to vent diverges above vent and continues along dorsal surface of thigh and tibia, and posterior edge of tarsus. A broad dark brown loreal stripe extends from tip of snout, through eye and tympanum, terminating at a point above arm insertion. Loreal stripe forms sharp boundary with dorsal snout colouration along canthus rostralis. Patches of dark brown pigment form bars on lower lip, bars across arms and fingers, and faint dark bands across thighs and tibiae. Hidden surfaces of legs heavily and unevenly pigmented with dark brown, anterior of thighs and knees with large brown patches. A triangular patch of dark brown pigment encloses vent. Additional dark brown patches enclose short sections of dorso-lateral folds, including those in inter-orbital space, on mid-dorsum, and laterally. Ventrally cream, with dense brown stippling on throat.

Measurements of the holotype: SV 38.3; TL 18.2 HW 15.5; HL 16.5; EN 4.1; IN 4.1; EYE 5.3; TYM 3.4; 4TD 1.1; 4TP 0.6; 3FD 0.8; 3FP 0.7; 1FD 0.75.

Variation. Variation in measurements and proportions of the paratypes are presented in Table 1. Males are 32.0–38.3 mm, females 52.4–58.3 mm SV. Dorsal colouration is rather uniform, all frogs being a shade of pale to dark brown. In several paratypes the intensity of dorsal and lateral pigmentation is variable, producing a mottled pattern. The dark loreal stripe and extremely short limbs are consistent features of the paratype series. In some specimens the narrow dorsal folds are conspicuously paler than the background colour, but in others the dorsal colouration is uniform. Pale spots may be present along the upper and lower lips, and the intensity of pigmentation on the throat is variable. Two paratypes have the thin, pale mid-vertebral stripe exhibited by the holotype.

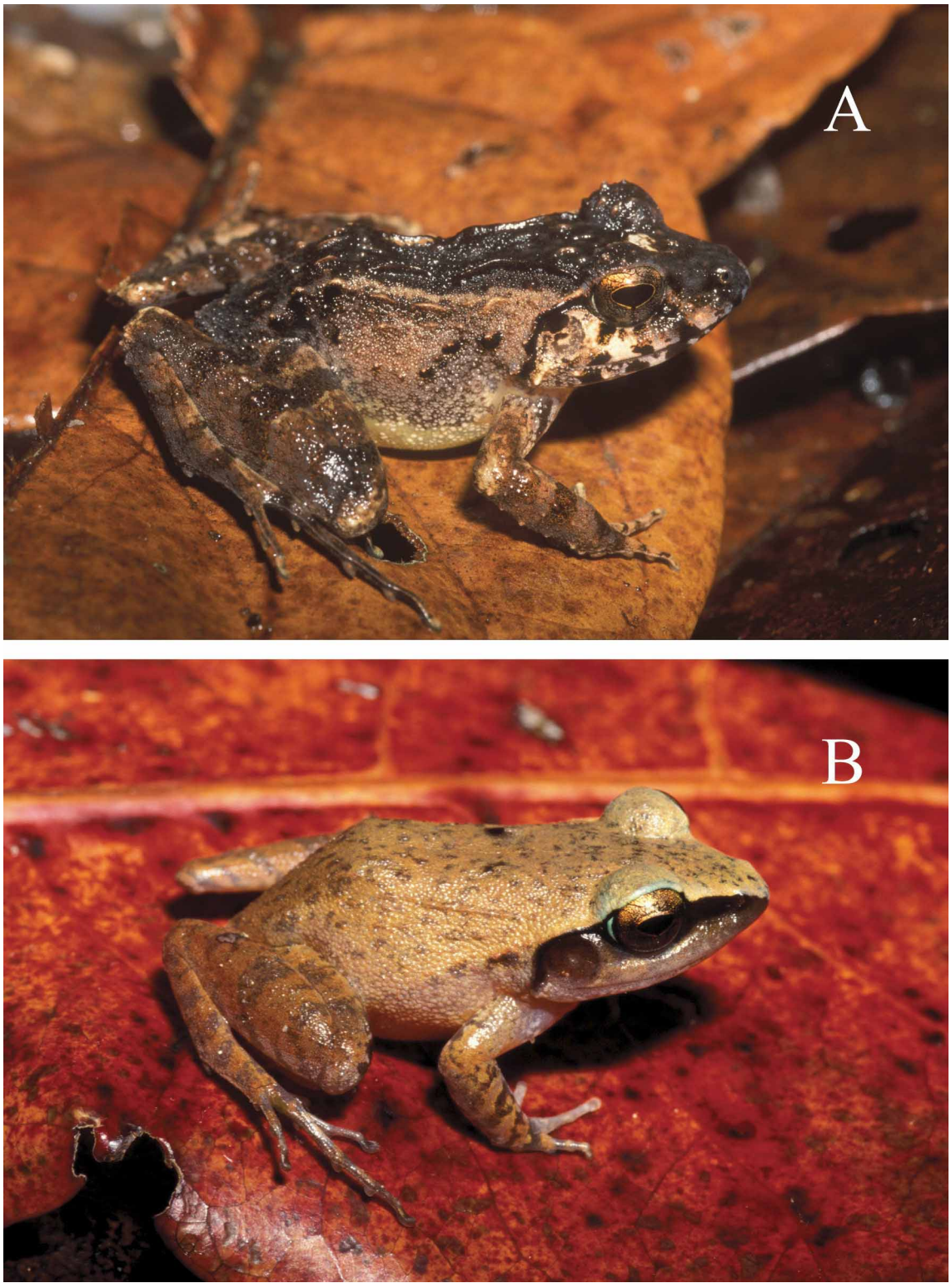

FIGURE 5. A. *Platymantis admiraltiensis* **sp. nov.** (SAMA R62802) and B. *P. latro* **sp. nov.** (UPNG 10052) in life.

Advertisement call. The vocalization of *P. latro* **sp. nov.** is normally a single biphasic note lasting about 0.5 s and normally consisting of a series of 10–20 short, irregularly spaced pulses followed by one long, musical pulse. Inter-pulse interval of short pulses varies from 0.004–0.071 s. 'Short' pulses last 0.0027–0.023 s and 'long' pulses are 0.037–0.115 s (Table 3). Energy in the short pulses is broadly distributed but energy in long pulses is concentrated in a narrow frequency band (Fig. 6). Notes are produced at approximately two-second

intervals and are uttered singly or, occasionally, in couplets or triplets. The call structure of *P. latro* is similar to that of other species of the *Platymantis papuensis* 'group' in the New Guinea region in that notes have an initial pulsed 'segment' followed by an unpulsed terminal 'segment' (e.g. Zweifel 1969). However the calls (= notes) differ dramatically from those of all morphologically similar species in the region (*P. adiastolus, P. admiraltiensis* **sp. nov.**, *P. cryptotis, P. papuensis, P. schmidti* and *P. weberi*) in that they are presented individually rather than in series, and individual notes are more than twice the length of notes produced by these species (0.5 s vs < 0.2 s; Zweifel 1969, Menzies 1982, Günther 1999, Brown *et al*. 2006, Richards unpublished data). As a result the acoustic impression is of a harsh rattle followed by a musical 'ping', quite unlike the 'yapping' or 'rattling' sound produced by the other species. Advertisement call parameters are presented in Table 3 and a call is illustrated and compared with the call of *P. admiraltiensis* and *P. papuensis* in Figure 6.

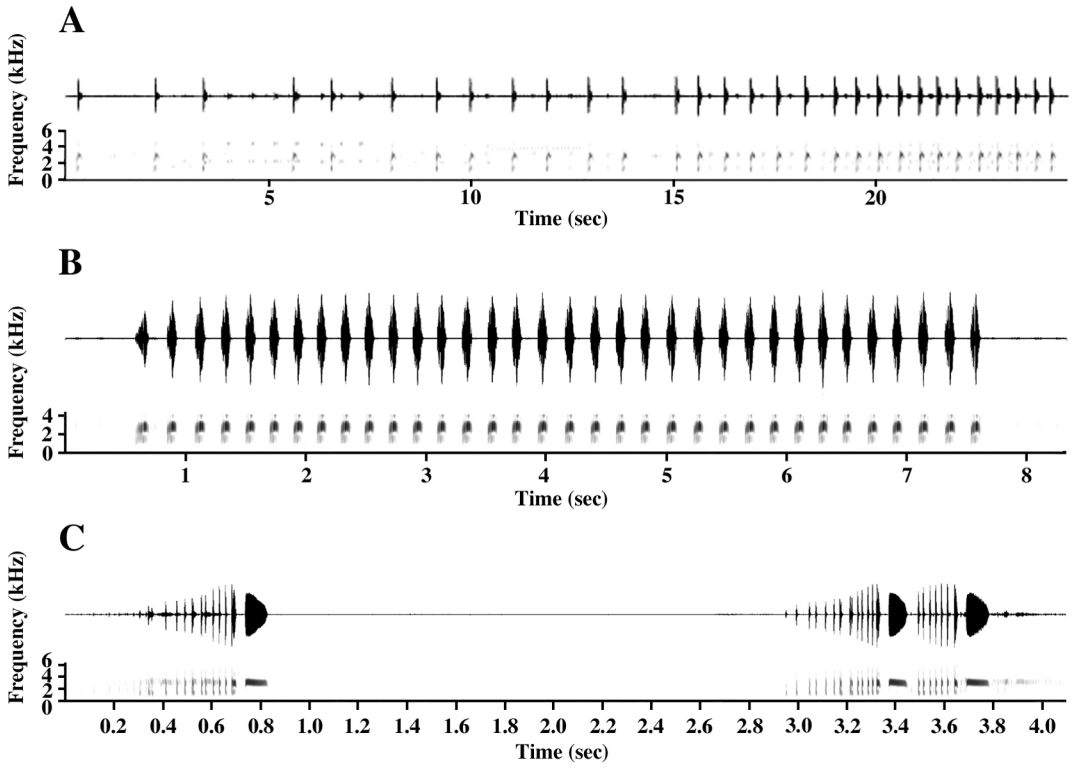

FIGURE 6. Advertisement calls of A. *Platymantis admiraltiensis* **sp. nov.** holotype (SAMA R62799), B. *P. papuensis* (recorded on Biak Island, the type locality for this species), and C. *P. latro* **sp nov.** holotype (SAMA R62819) recorded at air temperatures of 28, 25.2 and 27°C respectively.

Comparison with other species. The size, general habitus, small finger and toe discs, dorsal folds, and biphasic note structure of the advertisement call of *P. latro* **sp. nov.** suggest affinities with the informal *P. papuensis* 'complex'. It differs from all other species in this group by its conspicuous dark loreal mask, extremely short legs (TL/SV = 0.5) and advertisement call structure (Table 3). *Platymantis adiastolus, P. admiraltiensis* **sp. nov.**, *P. cryptotis, P. papuensis, P. schmidti*, and *P. weberi* have advertisement calls consisting of a repetitive train of short notes consisting, in full sequences, of many notes (Zweifel 1969, Menzies 1982, Günther 1999, Brown *et al*. 2006) and having individual notes lasting less than 0.2 s. These calls contrast strikingly with the single-note calls of *P. latro* **sp. nov.** that last for 0.5 s (see 'Advertisement call' above for a more detailed comparison of vocalisations). Two other *Platymantis* in the New Guinea region, *P. boulengeri* and *P. rhipiphalcus*, exhibit a conspicuously darkened loreal region. *P. boulengeri* is a much larger species (to ~ 70

mm) with a very broad head (HW/SV 0.44–0.49 vs 0.36–0.40 in *P. latro*) and it and the smaller *P. rhipiphalcus* (females to 41.5 mm) can be distinguished from *P. latro* by having a fan-shaped series of dorsal skin folds (absent in *P. latro*).

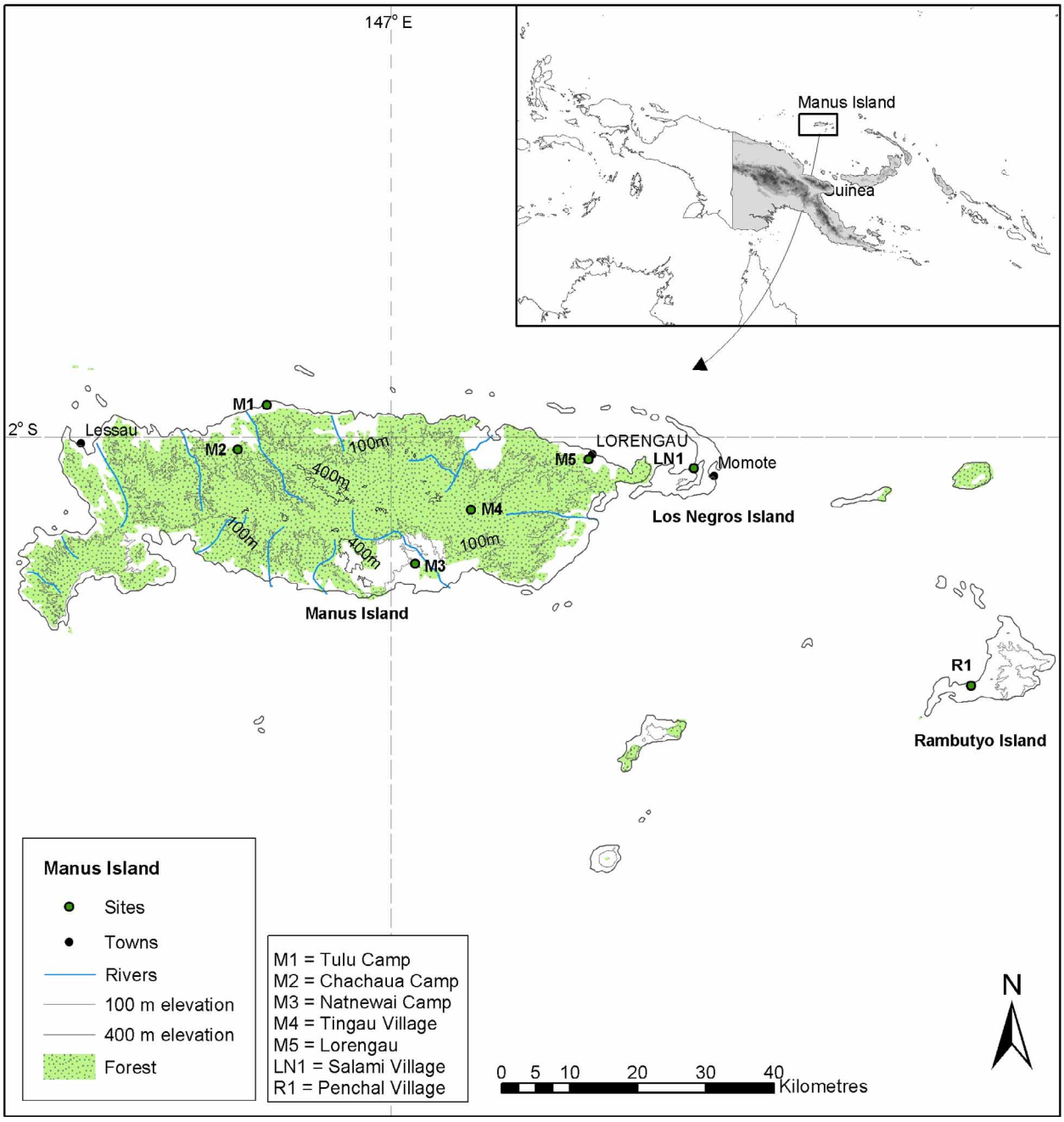

FIGURE 7. Map of Manus and surrounding islands showing locations discussed in the text.

Etymology: A noun in apposition from the Latin meaning 'robber', referring to the dark loreal face-mask of this species.

Distribution. Presently known from Manus, Los Negros, Rambutyo and Pak Islands in the Admiralty Archipelago, Papua New Guinea (Figure 7).

Natural history. Males called from exposed or semi-exposed positions in forest litter, or from the base of grass tussocks in disturbed garden habitats, at night after heavy rain. No frogs were observed calling from elevated sites. This species occurred in micro-sympatry with *P. admiraltiensis* **sp. nov.**, and calling males of the two species were frequently spaced less than 50 cm apart. Like that species, *P. latro* **sp. nov.** persists in large

numbers in heavily degraded habitats, including grassy paddocks in the centre of Lorengau Town. Given its tolerance of habitat degradation and its wide distribution on Manus and surrounding islands we recommend that the conservation status of this species be listed as 'Least Concern' using the criteria of the Global Amphibian Assessment.

TABLE 3. Call parameters of *Platymantis latro* **sp. nov.** Data are presented as mean (SD) and range. Time is in seconds.

Frog number	Number of calls	T^a (°C)	Call length	Number of pulses	Maximum pulse interval	Minimum pulse interval	Length of short pulses (n = 233)	Length of long pulses (n = 21)	Dominant frequency (Hz)
SAMA R 62821	11	28	0.515 (0.12) 0.29–0.72	14.27 (3.43) 8–20	0.04 (0.0064) 0.031–0.048	0.0075 (0.0026) 0.004–0.0119	0.0102 (0.0033) 0.0027–0.0231	0.0933 (0.0064) 0.07–0.1	2829 (40.62) 2783–2904)
SAMA R 62819	10	27	0.53 (0.006) 0.227–0.644	9.6 (2.54) 3–12	0.055 (0.008) 0.044–0.071	0.028 (0.009) 0.006–0.038	0.0117 (0.0036) 0.005–0.023	0.0955 (0.0221) 0.037–0.115	2534 (113.6) 2388–2826

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Platymantis aculeodactylus Brown, 1952. Papua New Guinea: "Torokina area, Bougainville Island" USNM 119769, holotype; Mutahi, Bougainville Island SAMA R8198, SAMA R8213; Solomon Islands: Barora Faa SAMA R56838; Kolopakisa SAMA R56902–3; Rob Roy SAMA R56965; Mount Keleve, Posarae SAMA R56991.
Platymantis adiastolus Brown, Richards, Sukumaran & Foufopoulos, 2006. Papua New Guinea: Wanui Camp, East New Britain, Papua New Guinea SAMA R61906 holotype, SAMA R57014–15, 57040–41, 60257–9, 61907–9, UPNG 9974–6 paratypes.
Platymantis akarithymus Brown & Tyler, 1968. Papua New Guinea: Pomugu, 11km north west of Kandrian, New Britain SAMA R7073 holotype and SAMA R6982 paratype; near Malassait, approx 85 km west of Rabaul, New Britain SAMA R7066, R7069 paratypes; Wanui Camp, East New Britain SAMA R57017–21.
Platymantis batantae Zweifel, 1969. Indonesia: Papua Province, Mt Besar, Batanta Island AMNH 74192 holotype.
Platymantis boulengeri (Boettger, 1892). Papua New Guinea: Wanui Camp, E New Britain SAMA R57033–39.
Platymantis browni Allison and Kraus, 2001. Papua New Guinea: Wanui Camp, East New Britain SAMA R57022–32.
Platymantis cheesmanae Parker, 1940. Indonesia: Papua Province, Cyclops Range BM 1938.6.5.28, holotype.
Platymantis gillardi Zweifel, 1960 Papua New Guinea: Whiteman Mountains, New Britain, Iambon, Gilliard Camp no. 6 AMNH 64253, holotype; Admiralty Archipelago AMNH 23545–7, paratypes.
Platymantis guppyi (Boulenger, 1884). Papua New Guinea: Kunua, Bougainville Island SAMA R4242, SAMA R4273A–B, SAMA R4414–5, SAMA R4917A–F, SAMA R4922A–E, SAMA R5158, Mutahi SAMA R8197. Solomon Islands: Santa Isabel SAMA R47128–39, Pavora River, Choiseul Island SAMA R47131–33; Barora Faa SAMA R56839–40, SAMA R56977–80; Kolopakisa SAMA R56899, R56906–7. SOLOMON ISLANDS: Treasury Island, BM 1947.2.29.82–83, syntypes:
Platymantis macrops (Brown, 1965). Papua New Guinea: Kunua, Bougainville Island MCZ 41864, holotype.
Platymantis macrosceles Zweifel, 1975. Papua New Guinea: Nakanai Mountains, West New Britain BPBM 1005, holotype.
Platymantis magnus Brown & Menzies, 1979. Papua New Guinea: 86 km South-east of Kavieng, New Ireland CAS 143640, holotype.
Platymantis mimicus Brown and Tyler, 1968. Papua New Guinea: Numundo Plantation, Willaumez Peninsula, New Britain SAMA R6868, holotype; Pomugu 11km north-west of Kandrian SAMA R7064, R7069, paratypes; Gazelle Peninsula, New Britain SAMA R6864, paratype.
Platymantis myersi Brown, 1949. Papua New Guinea: “Bougainville Island” AMNH 35348 holotype; Solomon Islands: Pavora River, Choiseul Island SAM R37010, SAMA R47157–58.
Platymantis neckeri (Brown and Myers, 1949). Papua New Guinea: “Bougainville Island”AMNH 34329, holotype;

Kupei District, 10 miles NW of Kieta, Bougainville SAMA R1620A–B; Kunua, Bouganville Island SAMA R4926A–D, SAMA R4926A–C; Mutahi, Bougainville Island SAMA R8211, SAMA R8261; Solomon Islands: Pavora River, Choiseul Island SAMA R37011, SAMA R47155–6; Barora Faa SAMA R56792–93, SAMA R56841–42; Rob Roy SAMA R56966–67.

Platymantis nexipus Zweifel, 1975. Papua New Guinea: Gazelle Peninsula, East New Britain BPBM 1009, holotype; Wanui Camp, East New Britain SAMA R56783–84.

Platymantis papuensis Meyer, 1875. Indonesia: Papua Province, Lake Sentani area SAMA R03606A-B; Roon Island, Geelvink Bay, *P. p. rubristriatus* syntypes MCZ 2441 (two specimens); Papua New Guinea: Morobe Province, Popondetta SAMA R 05849, 05582A-B, 09440-1; 4 Km north of Lae SAMA R15255A-B, 15257; Sandaun Province, August River SAMA R11479-80.

Platymantis parkeri Brown, 1965. Papua New Guinea: Kunua, Bougainville Island SAMA R4424 SAMA R5169A–B, MCZ 36923, holotype; Mutahi, Bougainville Island SAMA R8199; Solomon Islands: Pavora River, Choiseul Island SAMA R47126–27.

Platymantis rhipiphalcus Brown and Tyler, 1968. Papua New Guinea: near Pomugu, approx 11 km north-west of Kandrian, New Britain SAMA R7071, holotype; San Remo Plantation, Willaumez Peninsula, New Britain SAMA R7078, paratype.

Platymantis punctatus Peters and Doria, 1878. Indonesia: MSNG 29738 Hatam, Arfak Mountains, Papua Province, holotype.

Platymantis schmidti Brown and Tyler, 1968. Papua New Guinea: Talasea, Willaumez Peninsula, New Britain SAM R7618, holotype; Camp 1 nr Wanui, East New Britain SAMA R57014–16, Wanui Camp, East New Britain SAMA R57040–43.

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