A new scansorial species of *Platymantis* Günther, 1858 (Anura: Ceratobatrachidae) from Manus Island, Admiralty Archipelago, Papua New Guinea

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Abstract: Recent surveys and examination of museum specimens have revealed at least seven new species of frogs from the remote Admiralty Archipelago off northern Papua New Guinea. This includes six species of the genus *Platymantis* Günther, 1858 (Family Ceratobatrachidae) of which three, *Platymantis admiraltiensis* Richards, Mack, Austin, 2007, *P. latro* Richards, Mack, Austin, 2007 and *P. manus* Kraus, Allison, 2009 have been described since 2007. Here we describe an additional species of *Platymantis* from Manus Island in the Admiralty Archipelago. The new species is most similar morphologically to *Platymantis macrosceles* Zweifel, 1975 and *P. citrinospilus* Brown, Richards, Broadhead, 2013 both from New Britain Island in the Bismarck Archipelago, in having greatly expanded finger and toe discs and a slender body form, but differs from both of those species in a suite of morphological and acoustic characters. Frog diversity on Manus Island is high for such a small and isolated oceanic island group, and is considerably higher than the nearby and much larger New Ireland.

Key words: Amphibia, frog, new species, Ceratobatrachidae, Manus Province, New Guinea.

Introduction

Isolated oceanic islands are characterized by relatively depauperate frog faunas, a reflection of the poor over-sea dispersal ability of most frogs (Zug 2013). Melanesian islands to the north and east of New Guinea are notable exceptions, having moderately diverse ceratobatrachid frog assemblages (e.g. Brown 1952; Foufopoulos & Brown 2004; Brown et al. 2006a & b; Foufopoulos & Richards 2007; Kraus & Allison 2007; Brown et al. 2013).

The Admiralty Archipelago is situated approximately 275 km north of mainland Papua New Guinea. The largest and highest island in the group is Manus, with an area of approximately 2 020 km^2 and reaching 719 m elevation. Collections from the archipelago in the early twentieth century obtained specimens of at least four frog species (Brown 1997) but despite the archipelago's isolation only one of these, *Discodeles vogti* (Hediger, 1934), was until recently recognized as endemic (Allison 1996; Brown 1997). However, the presence of additional undescribed species was hinted at by Brown (1997) who mentioned an unnamed *Platymantis* Günther species from the Admiralties, but provided no further information about it.

A short survey in northern Manus Island by the senior author during 2002 and additional recent material obtained from Manus and several smaller islands in the archipelago revealed that the frog fauna is far more diverse than has previously been recognized. Based on these collections Richards et al. (2007) described two new species of *Platymantis*, *P. admiraltiensis* and *P. latro*, both of which appear to be endemic to the Admiralty Archipelago. Subsequently Kraus and Allison (2009) described *P. manus* based on older material found in the Museum of Comparative Zoology.

Here we describe an additional new species of *Platymantis* from Manus Island.




Material and methods

Field surveys were conducted on Manus Island between 4-10 June 2002. Collecting localities are illustrated in Fig. 1. Frogs were located along forest trails using head-torches and by tracking advertisement calls. Voucher specimens were fixed in 10% formalin and stored in 70% ethanol. Liver tissues from exemplars of all species were removed and stored in 95% ethanol prior to specimen fixation in formalin. New material is deposited in the South Australian Museum, Australia (SAMA) and the Papua New Guinea National Museum (PNGNM). Measurements (to the nearest 0.1 mm) were taken with dial calipers and a stereomicroscope fitted with an ocular micrometer. 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), horizontal eye diameter (EYE), inter-narial distance (IN) to proximal edge, not centre of naris, eye-naris distance (EN), 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 (1FD) and penultimate phalanx (1FP), and of 4th toe disc (4TD) and penultimate phalanx (4TP), as for 3rd finger. Vocalisations 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.

Comparative material from the following institutions was examined. Abbreviations follow Sabaj Pérez (2013): American Museum of Natural History (AMNH), Bishop Museum, Hawaii (BPBM), California Academy of Sciences (CAS and CAS-SU), Museo Civico di Storia Naturale di Genova (MSNG), Museum of Comparative Zoology at Harvard University (MCZ), Natural History Museum, London (BM), South Australian Museum, Adelaide (SAMA), Papua New Guinea National Museum (PNGNM), United States National Museum (USNM), the Texas Natural History Collection of the University of Texas at Austin (TNHC), the University of Wisconsin Zoology Museum (UWZM), the University of Kansas (KU), and Natural Sciences Resource Collection at the University of Papua New Guinea (UPNG). Additional meristic and morphological data were taken from Foufopoulos & Brown (2004). Species in the diverse Philippines radiation of *Platymantis* do not occur in Melanesia so comparisons presented below are restricted to Melanesian taxa. Coordinates of sites use the GPS datum WGS-84.

FN = Field number abbreviations are as follows: ALM = field collection of Andrew L. Mack, CCA = field collection of Christopher C Austin, JCU = James Cook University (field collection of S.J. Richards).

Description of new species

***Platymantis custos* sp. nov.** (Figs 2-3, plate 1)

Holotype SAMA R 63525 (FN = JCU 2654), Chachuau Camp near Tulu 1 Village, Manus Island, Papua New Guinea (2°01.089' S, 146°47.807' E) collected on 10 June 2002 by S. Richards.

Paratypes 21 specimens: UPNG 10020 (FN = JCU 2614), 10021 (FN = JCU 2615), 10022 (FN = JCU 2633), 10023 (FN = JCU 2644), 10024 (FN = JCU 2652), SAMA R 63510-11 (FN = JCU 2610-11), R63512-13 (FN = JCU 2617, 2619), R 63514 (FN = JCU 2632), R63515 (FN = JCU 2634), R 63516 (FN = JCU 2636), R 63517 (FN = JCU 2651), R 63518 (FN = JCU 2653), R 63519-21 (FN = JCU 2656-58) ♂♂; UPNG 10018 (FN = JCU 2613), UPNG 10019 (FN = JCU 2612), SAMA R 63518 (FN JCU 2653) ♀♀, all collected by S. Richards at the type locality between 7-10 June 2002; SAMA R63511 (FN = JCU 2611) ♂ collected by S. Richards at Tulu 1 Village, Manus Island, Papua New Guinea (1°57.530' S, 146°50.085'E) on 6 June 2002.

Referred specimens. SAMA R 63522-23 (FN = ALM 1369-70), Natnewai Camp, about 3.7 km NNE of Patu Mission, Manus Island (approximately 02°10'S, 147° 02'E) collected by A. Mack on 29 April 2001, SAMA R 63524 (FN = CCA 2060), Tingau Village, 27 km from Lorengau, Manus Island (02°05.76'S, 147° 06.33'E) on 30 August 2001.

Derivatio nominis: From the Latin custos = 'guardian', referring to the egg-guarding behaviour by males of this species.

Diagnosis: A moderately small (males 25.9-31.4 mm, females 29.3-32.8 mm), extremely slender species that can be distinguished from congeners by the following combination of characters: 1) discs on fingers and toes prominent, 2) limbs extremely long, slender (TL/SVL 0.54-0.65), 3) snout narrow, acuminate, protruding distinctly beyond lower jaw, 4) tubercles on dorsum and tibiae small but prominent in life, 5) tubercle above eye only moderately developed, 6) dorsum brown, without reticulate pattern and 7) advertisement call a long, unmusical note train containing 632 notes uttered at a rate of 9-16 notes/s and lasting 13 s. Dominant frequency ranged from 3603 to 4317 Hz across the 19 calls analyzed.

Description of holotype: Adult male with vocal




slits, calling when collected. Habitus very slender, elongate; head moderately narrow (HW/HL = 0.34) but distinctly wider than body; snout long, with distinctly pointed tip in dorsal aspect, slightly rounded, nearly truncate in lateral aspect (Fig. 2); upper jaw protrudes distinctly beyond lower jaw, labial region flared and sloping; interorbital region and dorsal surface of snout flat, without saggital crest. Canthus rostralis marginally curved with distinct outwards bow just prior to eyes; loreal region steep, deeply concave. Nares much closer to tip of snout than to eyes, positioned just below canthal ridge, oriented laterally and visible in dorsal view. Choanae small and ovoid, separated by a distance approximately four times their diameter. Two prominent, roughly triangular bundles of vomerine teeth located marginally posterior to and medial of the choanae, their anterior edges separated by a distance roughly 3–4 times the diameter of the choanae and their posterior edges separated by a distance approximately 2 times the diameter of the choanae. Tongue lanceolate with very pointed anterior tip and bifid posterior edge. Eyes moderately large (EYE/SVL = 0.12), bulbous, protruding significantly in dorsal view and marginally in lateral view, without tubercles dorsally; pupil horizontal. Tympanum moderately small (EAR/SVL = 0.058), tympanic annulus clearly visible except dorsal edge that is obscured by single supratympanic fold extending from posterior edge of orbit to supra-axial region. Skin without other dermal folds; dorsum, throat and ventral surfaces of limbs smooth, belly coarsely granular. Prominent spiniform, post-rictal tubercles at terminal edge of lower jaw, and small low indistinct tubercles in rictal region, on posterior edge of tarsus, in scapular region and around vent. Limbs long (TL/SVL = 0.56) and slender. Fingers long, unwebbed, with very large truncate terminal discs (3FP/3FD = 0.25) (Fig. 2); disc on finger I greatly reduced; relative lengths III>IV>II>I; subarticular tubercles prominent, round, one under digits I-II, two under digits III-IV, supernumerary tubercles present at base of digits III-IV; inner metatarsal flat, oval and elongate, outer metatarsal divided into large almost circular medial tubercle and much smaller (one third size) elongate rounded outer tubercle. Toes long, unwebbed, relative lengths IV>III>V>II>I); toe IV very elongate, approximately twice length of III; toe I very short; terminal discs expanded (4TP/4TD = 0.46) on all digits except I; subarticular tubercles prominent, one on toes I-II, two on III-V and three on IV; inner metacarpal tubercle long, ovoid and slightly raised; medial tubercle low, indistinct and almost circular, approximately half length of inner tubercle; outer tubercle approximately half size of inner tubercle, prominently raised and round.

Colouration in preservative: dorsum pale grey-brown, with numerous tiny darker brown maculations, particularly dense around the supratympanic fold, nares and posterior edge of the hindlimbs, eyes distinctly darker; ventral surfaces off white with scattered brown maculations, particularly on throat, forelimbs and hindlimbs. Colouration in life similar, dorsum being slightly more vividly, but still uniformly, grey-brown.

Measurements of holotype (in mm): SVL = 30.9, TL = 17.4, EN = 3.8, IN = 2.2, HW = 10.5, HL = 11.5, EYE = 3.7, EAR = 1.8, 4TD = 1.1, 4TP = 0.5, 3FD = 2.0, 3FP = 0.5, 1FD = 0.9.

Variation in the type series: In preservative dorsal colouration is highly variable, varying through shades of dark brown to grey brown; three specimens (UPNG 10023-24, SAMA R63520) have a sharply defined off white dorsal stripe and one specimen has wide dorsal blaze of grey brown. Many specimens have faint barring on both hind and forelimbs. Ventral surfaces always have a base colour of off-white, however there are varying levels of brown maculations on the legs and throat, ranging from almost absent, especially on throat, to very heavily mottled with brown. The four females available are on average slightly larger than the males, but the ranges overlap significantly and the sexes are very hard to differentiate without internal investigation (♂♂ 25.9-31.14 mm, mean = 29.2 mm; ♀♀ 29.3-32.8 mm, mean = 30.9 mm). Measurements and proportions of the type series are presented in Table 2.

Colouration in life: Based on photographs of several individuals in life the dorsum is always a shade of brown, ranging from pale brown to olive brown or yellowish-brown, and the skin may be somewhat transluscent ventrolaterally. There may be cream spots along the lower lip and laterally on the body, and a narrow brown line from the snout through the nostril to the eye. SAMA R63516 was olive brown in life with a pale yellow mid-dorsal line from the snout to the vent and pale yellow patches laterally on the snout and dorsum. There are yellowish brown and pale brown patches dorsally, and a narrow dark brown bar from snout to eye separates yellow in the loreal region from olive brown colouration dorsally on the snout. Hidden surfaces of the thighs are transluscent. The iris is pale brown.

Advertisement call: The call of this species is a rapidly produced train of 6-33 rather harsh notes




lasting 0.5-3 seconds. Notes are 0.01-0.03 s long and uttered at a rate of 9-16 notes/s. Dominant frequency is 3603-4317 Hz. Inter-note interval is generally slightly longer at the start of each call, which then 'stabilises' to a relatively consistent call rate. Structural details of 19 calls from three males are summarized in Table 1 and a single call is illustrated in Fig. 3. The impression from observing males calling in the field was that shorter calls were often terminated due to disturbance, or were 'start-up' calls.

Behaviour: Males of this species called from elevated positions between approximately 0.5-2 m above the ground on leaves in rainforest between sea level and the summit of Mt. Dremsel (719 m), the highest point on Manus. The new species was encountered in relatively undisturbed primary forest and also on the edges of gardens around villages. Several males were observed guarding eggs on the surface of leaves (Plate 1). At most sites where it was encountered it occurred in sympatry with *Platymantis admiraltiensis* Richards, Mack, Austin, 2007, *P. latro* Richards, Mack, Austin, 2007, *P. manus* Kraus, Allison, 2009, and two undescribed species of *Platymantis*. The ecology of this species is currently the subject of a detailed study (Taitibe and Richards, unpublished data).

Differential diagnoses: *Platymantis custos* is most similar to (and likely most closely related to) three shrub frogs known only from the Nakanai Mountains of New Britain island in the Bismark Archipelago: *P. citrinospilus* Brown, Richards, Broadhead, 2013, *P. macrosceles* Zweifel, 1975 and *P. mamusiorum* Foufopoulos, Brown, 2004. These are the only other species in the Melanesian region to have a combination of moderate size, slender body form and widely expanded finger and toe discs (Foufopoulos & Brown 2004; Brown et al. 2013). *Platymantis custos* differs from *P. citrinospilus* in never having brick reddish-

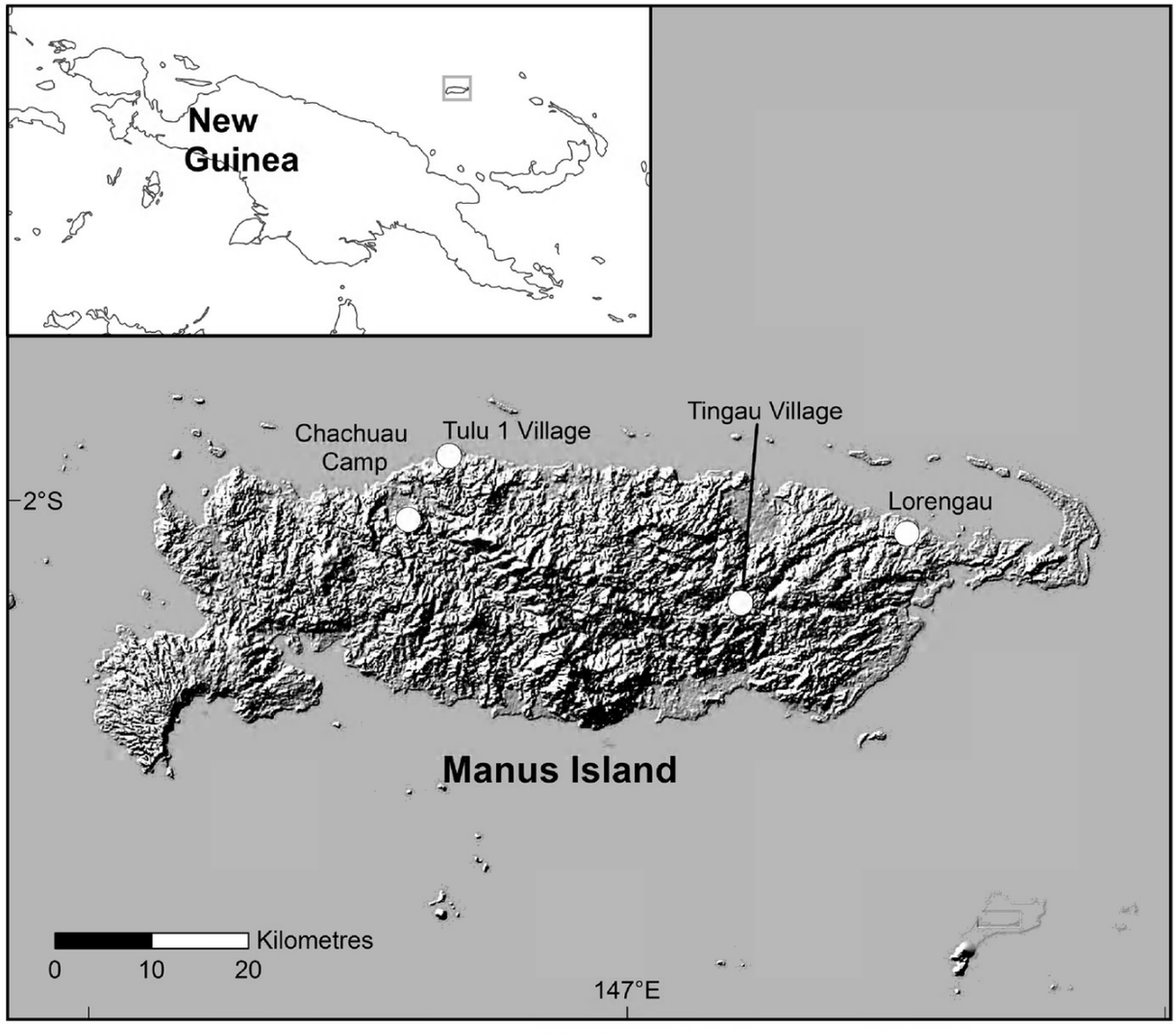

Figure 1. Map of Manus Island showing collection localities for *Platymantis custos* sp. nov.

brown ground colouration with bright yellow flank areolations, in lacking a distinct mid-saggital crest (both present in *P. citrinospilus*), and in its much more elongate and protruding snout. It differs from *P. macrosceles* by its brown base colour (homogeneous green in *P. macrosceles*), the absence of highly enlarged, prominent supra-ocular and tarsal tubercles (present in *P. macrosceles*) and its more elongate and protruding snout; and from *P. mamusiorum* by its brown (vs green with fine brown reticulum) dorsum, its extremely elongate, pointed (versus rounded) snout and by its pulsed advertisement call (versus a stridulated series of "croaks" or "crunches" in *P. mamusiorum*). Of the other tree-dwelling shrub frogs of the Bismarck Archipelago, *Platymantis custos* (SVL 25.9-32.8) differs from the larger *P. nakanaiorum* (SVL 35.8-38.0) and *P. nexipus* (SVL 39.3-43.7) and the much smaller *P. browni and P. caesiops* (SVL < 27) by body size, and by its much more pointed and protruding snout (versus rounded snout) (Zweifel 1975; Allison & Kraus 2001; Foufopoulos & Brown 2004; Brown et al. 2006a; Kraus & Allison 2009). *Platymantis custos* can easily be distinguished from *P. manus* Kraus, Allison by its much narrower snout and from all terrestrial species of *Platymantis* on Manus (*P. admiraltiensis*, *P. latro*), and New Britain (*P. adiastolus* Brown, Richards, Sukumaran, Foufopoulos, 2006, *P. akarithymus*, Brown, Tyler, 1968, *P. boulengeri* (Boettger, 1892), *P. bufonulus*

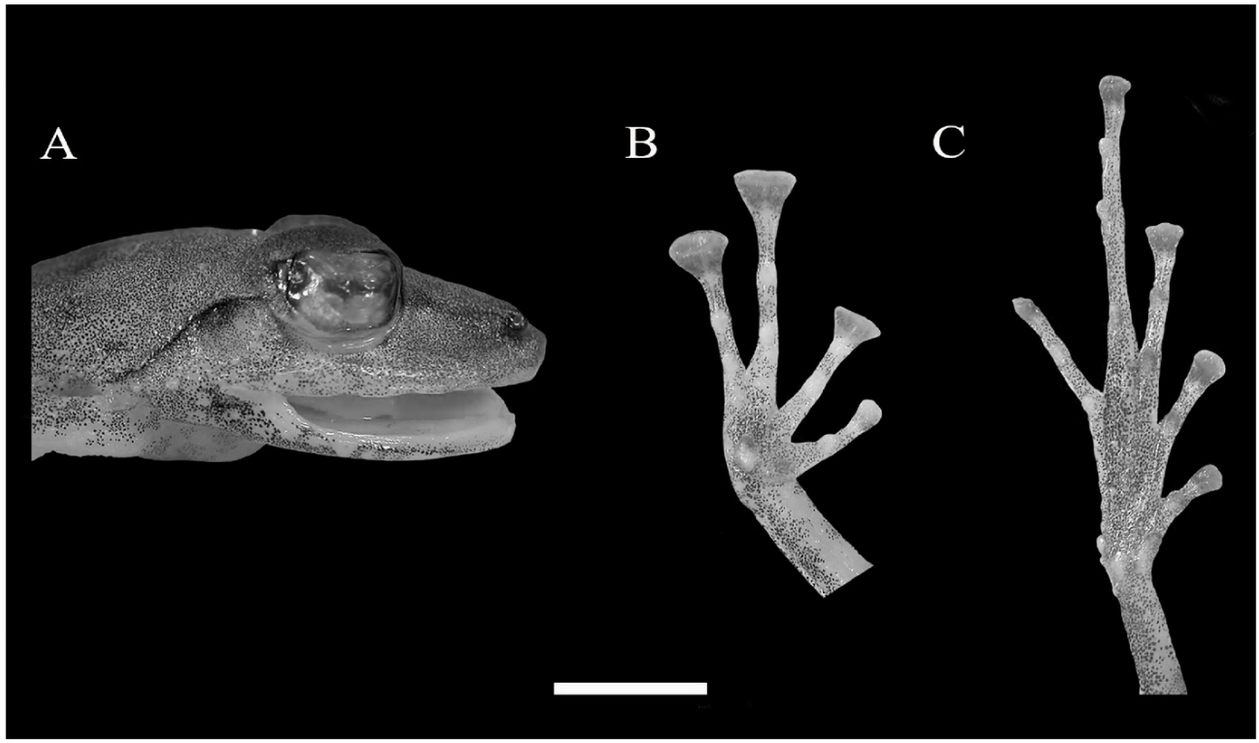

Figure 2. *Platymantis custos* sp. nov., holotype. A – Head; B – Right hand; C – Right foot (SAMA R63525) [scale bar 5 mm].

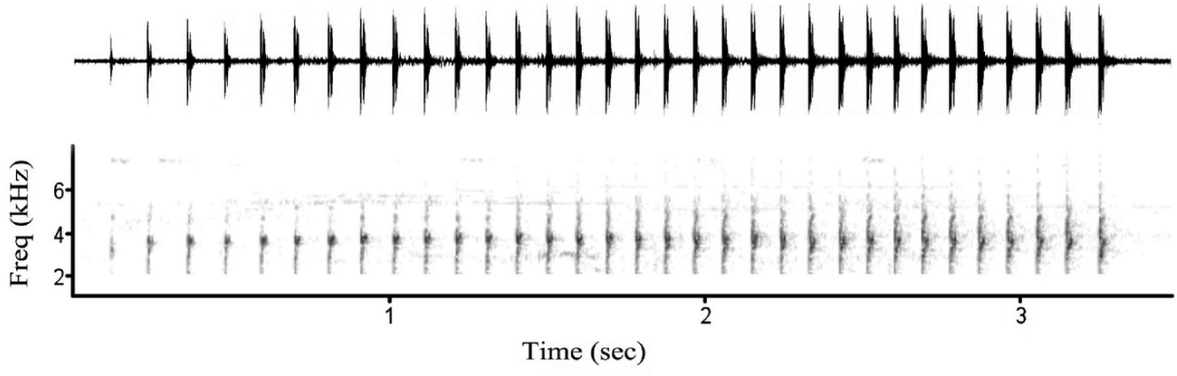

Figure 3. *Platymantis custos* sp. nov. waveform (top) and spectrogram (bottom) of a single call (SAMA R63512).

Kraus, Allison, 2007, *P. gillardi* Zweifel, 1960, *P. magnus* Brown, Menzies, 1979, *P. mimicus* Brown, Tyler, 1968, *P. schmidti* Brown, Tyler, 1968 , and *P. sulcatus* Kraus, Allison, 2007) by the presence of widely expanded digital disks of fingers and toes (versus finger and toe termini non-expanded to only slightly expanded). It differs from the other more distant Melanesian *Platymantis* species with similarly wide digital discs in its much smaller size (*Platymantis guppyi* (Boulenger, 1884), *Platymantis neckeri* (Brown and Myers, 1949), *Platymantis parilis* Brown, Richards, 2008 (Solomon Islands) and *Platymantis vitiensis* (Girard, 1853) (Fiji) are all significantly larger (> 38.6 mm for adult males)), and much more slender body form (Foufopoulos & Brown 2004).

Distribution: This species is currently known only from Manus Island, Admiralty Archipelago, Papua New Guinea (Fig. 1).

Specimens examined

***Platymantis acrochordus* (Brown, 1965)**

Material examined: 17 specimens, Solomon Islands, North Solomons, Bougainville Island, Bougainville Province, Kunua: MCZ-A 38196 (paratype); Asesi, S. of Kunua MCZ-A 41871-72, 44256-67 (paratypes); Kolopakisa Village, Isabel Island: SAMA R56300; Posarae, Choiseul Island, SAMA R56932.

***Platymantis aculeodactylus* Brown, 1952**

Material examined: 7 specimens, Solomon Islands, Bougainville Island, Bougainville Province, Kunua: MCZ-A 36961-64; KU 98475; Posarae, Choiseul Island: SAMA R56991; Barora Faa Island (near Isabel Island): SAMA R56838.

***Platymantis adiastolus* Brown, Richards, Sukumaran, Foufopoulos, 2006**

Material examined: 14 specimens, Papua New Guinea, New Britain Island, East New Britain Province, Wanui River Valley, Wanui Village: SAMA R61906 (holotype), 57014-15, R60257-59, R61907-09, UPNG 8874-76 (paratypes); East New Britain Province, Vouvou Camp: SAMA R64704, 64797.

***Platymantis admiraltiensis* Richards, Mack, Austin, 2007**

Material examined: 16 specimens, Papua New Guinea, Admiralty Islands, Manus Province, Manus Island Chachuau Camp, near Tulu 1 Village: SAMA R62799 (holotype), UPNG 10049, SAMA R62800-01, UPNG 10050, SAMA R62802-03; Lorengau: SAMA R62804-05; Tulu 1 Village: SAMA R62808-10; Tingau Village: SAMA R62806; Natnewai Camp: SAMA R62811-16; Los Negros Island, Salami Village: SAMA R62807 (paratypes).

***Platymantis akarithymus* Brown, Tyler, 1968**

Material examined: 8 specimens, Papua New Guinea, Bismarck Archipelago, New Britain Island, West New Britain Province, S coast, ca 14 km NW Pomugu, Kandrian: CAS-SU 22875 (paratype); Moramora, 3 km N, 7 km E Hoskins: MCZ-A 88823; Pomugu, SAMA R7073 (holotype), SAMA R6982 (paratype); East New Britain, Malasait (04.464oS, 151.889oE), SAMA R7066, R7082; SAMA 57020-21; Papua New Guinea, East New Britain Province, Lamas Camp: SAMA R64679, 64680.

***Platymantis batantae* Zweifel, 1969**

Material examined: 5 specimens, Indonesia, Raja Ampat Islands, Batanta Island, Warinkabom: MZB 12256; Waire Camp: MZB 12258; Yakut Camp: MZB 12268; Waigeo Island, Camp near Urbinasopen: MZB 12276; Papua mainland, Manokwari, Gunung Meja: MZB 12299.

***Platymantis bimaculatus* Günther, 1999**

Material examined: 4 specimens, Indonesia, Raja Ampat Islands, Waigeo: MZB 12267, 12272, 12275, 12279

***Platymantis boulengeri* (O. Boettger, 1892)**

Material examined: 5 specimens, Papua New Guinea, Bismarck Archipelago, New Britain Island, West New Britain Province, ca 40 km S of Talasea, San Remo Plantation on Willaumez Peninsula: CAS-SU 22876; "New Britain Archipelago": MCZ-A 1729, 9372; Moramora, 3 km N, 7 km E Hoskins: MCZ-A 92711; CAS-SU 22873 (paratype of *P. rhipiphalcus*), SAMA R7078 (paratype paratype of *P. rhipiphalcus*); Pomugu: SAMA R7071 (holotype of *P. rhipiphalcus*); Papua New Guinea, East New Britain Province, Vouvou Camp: SAMA R64798.

***Platymantis browni* Allison, Kraus, 2001**

Material examined: 10 specimens, New Ireland Island, Weitin River Valley, 8 km N, 7 km W of river mouth, "River Camp" (04.544°S 152.964°E), 150 m: BPBM 12090, 12099, 12102, 12104, 12106I, 12109, 12113, 12115, 12188, 12191 (paratypes).

***Platymantis bufonulus* Kraus, Allison, 2007**

Material examined: 1 specimen, Papua New




Guinea, New Britain Island, East New Britain Province, Vouvou Camp: SAMA R64805.

***Platymantis caesiops* Kraus, Allison, 2009**
Material examined: 2 specimens, Papua New Guinea, New Britain Island, East New Britain Province, Vouvou Camp: SAMA R10730, 10732.

***Platymantis cheesmanae* Parker, 1940**
Material examined: 3 specimens, Indonesia, Cyclops Mountains, Wambena Camp: SJR 6212, 6201, 6204.

***Platymantis citrinospilus* Brown, Richards, Broadhead, 2013**
Material examined: 4 specimens, Papua New Guinea, New Britain Island, East New Britain Province, Nakanai Mountains, Tompoi Camp, 1700 m above sea level: SAMA R64758 (holotype), SAMA R64756, R64757, PNGNM 24042 (paratypes).

***Platymantis desticans* Brown, Richards, 2008**
Material examined: 4 specimens, Solomon Islands, Isabel Province, Barora Faa Island, (off the western tip of Isabel Island): SAMA R56849 (holotype), and SAMA R56850-52 (paratypes).

***Platymantis gillardi* Zweifel, 1960**
Material examined: 17 specimens, Papua New Guinea, Bismarck Archipelago, New Britain Island, West New Britain Province, S coast, ca 7 mi NW Pomugu, Kandrian: CAS-SU 22877-78; Papua New Guinea, West New Britain Province, northern Nakanai Mountains, ridge between the Ivule and Sigole rivers on the northern edge of the Nakanai Plateau: UWZM 23787-96, 23799-800; East New Britain Province, Vouvou Camp: SAMA R64801-02.

***Platymantis guppyi* (Boulenger, 1884)**
Material examined: 59 specimens, Papua New Guinea, Bougainville Island, Bougainville Province, Camp Torokina: USNM 120852-53; Kunua: MCZ-A 38628, 38632-33, 38635, 38638-39, 38664-666, 38668, 38674, KU 93736-40, 98159-65, 98468; Melilup: MCZ-A 38629, 38659-60, 38667, 38669-72, 59498-501; Mutahi: CAS 106553-106565; Solomon Islands, Barora Faa Island (near Isabel Island): SAMA R56839, 56840; Guadalcanal Island, Tadai District, Mt. Austen, Barana Village: KU 307359, 307375-76, 307381, 307384-86.

***Platymantis latro* Richards, Mack, Austin, 2007**
Material examined: 18 specimens, Papua New Guinea, Admiralty Islands, Manus Province, Manus Island: KU 93750-54; Chachuau Camp near Tulu 1 Village: SAMA R62819 (holotype), UPNG 10051, SAMA R62820; Natnewai Camp: SAMA R62826; Lorengau: UPNG 10052-54, SAMA R62821-23; Rambutyo Island, Penchal Village: SAMA R62827; Los Negros Island, Salami Village: SAMA R62828-29 (paratypes).

***Platymantis macrops* (Brown, 1965)**
Material examined: 4 specimens, Solomon Islands, North Solomons, Bougainville Island, Bougainville Province, Kunua: MCZ-A 38195-96 (paratypes); Aresi, S. of Kunua: MCZ-A 41864 (holotype); Matsiogu: MCZ-A 78820.

***Platymantis macrosceles* Zweifel, 1975**
Material examined: 4 specimens, Papua New Guinea, West New Britain Province, Ti, Nakanai Mountains (central New Britain): BPBM 1005 (holotype); Nakanai Mountains, ridge between the Ivule and Sigole Rivers: UWZM 23721, UPNG 10007; Papua New Guinea, East New Britain Province, Vouvou Camp: SAMA R64815.

***Platymantis magnus* Brown, Menzies, 1979**
Material examined: 4 specimens, Papua New Guinea, New Ireland Island, New Ireland Province, W. Coast, approx. 88 km S Kavieng ("Madina High School area"): CAS 143640, (holotype); CAS 143639 (paratype); Utu, 1 km S, 5 km E Kavieng: MCZ-A 92671-72 (paratypes).

***Platymantis mamusiorum* Foufopoulos, Brown, 2004**
Material examined: 2 specimens, Papua New Guinea, West New Britain Province, northern Nakanai Mountains, ridge between the Ivule and Sigole rivers on the northern edge of the Nakanai Plateau (05°33.112'S, 151°04.269'E): UWZM 23720 (holotype), UWZM 23719, 23722, UPNG 9992 (Paratypes); Papua New Guinea, East New Britain Province, Vouvou Camp: SAMA R64713-14.

***Platymantis manus* Kraus, Allison, 2009**
Material examined: 2 specimens, Papua New Guinea, Admiralty Islands, Manus Province, Manus Island, lorengau, MCZ-A 87512 (holotype), 87513 (paratopotype)

***Platymantis mimicus* Brown, Tyler, 1968**
Material examined: 6 specimens, Papua New Guinea, Bismarck Archipelago, New Britain Island, West New Britain Province, ca 18 mi S of Talasea, Numundo Plantation on Willaumez Peninsula: CAS-




SU 22874 (paratype), SAMA R6868 (holotype), R7064 (paratype); Kandrian: SAMA R 7069 (paratype); Moramora, 3 km N, 7 km E Hoskins: MCZ-A 88826, 89053.

***Platymantis myersi* Brown, 1949**
Material examined: 7 specimens, Solomon Islands, Guadalcanal Island, river E Popomaneseu track: MCZ-A 79068-72; Papua New Guinea, Bougainville Island, Torokina: USNM 119584; Papua New Guinea, Bougainville Island, Kunua, AMNH 70066 (paratype).

***Platymantis nakanaiorum* Brown, Foufopoulos, Richards, 2006**
Material examined: 8 specimens, Papua New Guinea, West New Britain Province, northern Nakanai Mountains, northern edge of the Nakanai plateau, on a ridge between the Ivule and Sigole rivers 1640 m elevation; UWZM 23897-98, UPNG 10010-11 (holotype and three paratypes); Papua New Guinea, East New Britain Province, Vouvou Camp: SAMA R64806-09, SJR 10733.

***Platymantis neckeri* (Brown, Myers, 1949)**
Material examined: 47 specimens, Papua New Guinea, Bougainville Island, Bougainville Province: MCZ-A 30145-46 (paratypes); Bougainville Island, Kunua: USNM 217441; Melilup: MCZ-A 66853-56, 66849, 66849, 66851-53; Mutahi: MCZ-A 66877-78, 66881-82, 66885-90, 66893; 66926-38; CAS 106451-106458; Solomon Islands, Barora Faa island (near Isabel Island): SAMA R56792-93, 56841-42.

***Platymantis nexipus* Zweifel, 1975**
Material examined: 17 specimens, Papua New Guinea, West New Britain Province, New Britain Island, Nakanai Mountains, ridge between the Ivule and Sigole Rivers, 900-1200 m above sea level: UPNG 10007-09, UWZM 23893, 23895-23896; Papua New Guinea, East New Britain Province, New Britain Island, Wanui Camp, Wanui River Valley (near Wide Bay), 310 m above sea level (05°21.638'S, 152°05.266'E): SAMA 56783-84; East New Britain Province, Gazelle Peninsula, Baining Mountains, St. Paul's, 100-400 m above sea level, BPBM 1009 (holotype); Papua New Guinea, East New Britain Province, Vouvou Camp: SAMA R64690-91, 64806-09, SJR 10733.

***Platymantis papuensis* Meyer, 1875**
Material examined: 12 specimens, Indonesia, Papua Province, 'Hollandia': CAS-SU: 8790-91; Lake Sentani: CAS-SU 9709-12; Papua New Guinea, Madang Province, Naru Village: TNHC 51544-46; Papua New Guinea, Madang Province, Baiteta cave: TNHC 51541, 51978, 51980.

***Platymantis parilis* Brown, Richards, 2008**
Material examined: 4 specimens, Solomon Islands, Isabel Province, north-western Isabel Island, Kolopakisa Village: SAMA R56911 (holotype), SAMA R56908-10 (paratypes).

***Platymantis parkeri* (Brown, 1965)**
Material examined: 10 specimens, Solomon Islands, North Solomons, Bougainville Island, Bougainville Province, Kunua: MCZ-A 36914-22 (paratypes), 36923 (holotype).

***Platymantis schmidti* Brown, Tyler, 1968**
Material examined: 41 specimens, Papua New Guinea, Bismarck Archipelago, New Britain Island, East New Britain Province, Karat, Cherub Plantation: CAS 139651-52; Baining Mountain Range, Gazelle Peninsula: CAS-SU 22880-91 (paratypes); Talasea Plantation, Willaumez Peninsula: SAMA R6762, 6764, 6784, 6786, 6791, 6795, 6813, 7093, 7097 (paratypes), 7618 (holotype); San Remo, Willaumez Peninsula: 6858, 6862, 6912, 6923 (paratypes); L.A.E.S., Karavat, Gazella Penninsula (near Rabaul): SAMA R7147, 7099 (paratypes); Wanui, Wanui River Valley (near Wide Bay), 310 m above sea level (05°21.638'S, 152°05.266'E), New Britain Island, East New Britain Province: SAMA R57014-16, 57040-43; Papua New Guinea, West New Britain Province, northern Nakanai Mountains, ridge between the Ivule and Sigole rivers on the northern edge of the Nakanai Plateau: UWZM 23775-78; 23782, 23890.

***Platymantis solomonis* (Boulenger, 1884)**
Material examined: 29 specimens, Papua New Guinea, Bougainville Island, Bougainville Province, Topanas: CAS 109817; Mutahi: CAS 109825-26; 109829-30, 109840; Solomon Islands, Barora Faa Island (near Isabel Island): SAMA R56843-44.; Papua New Guinea, Bougainville Island, Kunua: KU 93762-63; 98477; Solomon Islands, Western Province, Lola Island: KU 307144-25, 307136; Guadalcanal Province, Guadalcanal Island, Metapono District, Keamami Village: KU 307311; Tadai District, Mt. Austen, Barana Village: KU 307357, 307377, 307382, 307389, 307393, 307411, 307428.




***Platymantis sulcatus* Kraus, Allison, 2007**
Material examined: 2 specimens, Papua New Guinea, Bismarck Archipelago, New Britain Island, East New Britain Province, Nakanai Mountains, Vouvou Camp (859 masl): SAMA R6481819.

***Platymantis vitianus* (Duméril, 1853)**
Material examined: 8 specimens, Fiji, Viti Levu Islands, Viwa Island, Viwa Village, SW side of island: CAS 172510-12; Ovalau Island, 0.5 mi N of Navuloa Village: CAS 172525-29.

***Platymantis vitiensis* (Girard, 1853)**
Material examined: 13 specimens, Fiji, Viti Levu Islands, Viti Levu Island, Savura Creek Rd., ca 1 km W of Savura Creek: CAS 172437, 172439-40, 172447, 172449-50, 172452-55, 172457; Ovalau Island, 10 km S, of Levuka, St. John's: CAS 172531-32.

***Platymantis weberi* Schmidt, 1932**
Material examined: 29 specimens, Papua New Guinea, Bougainville Island, Bougainville Province, Mutahi: CAS 106567-72, 108313-19, 110918-19; MCZ-A 64586-87, 64589-90; Kunua: KU 98478; Solomon Islands, Guadalcanal Island, Tadai District, Mt. Austen, Barana Village: KU 30744, 307350, 307430, 307358, 307367, 307373-74, 307378, 307410; Barora Faa Island (near Isabel Island): SAMA R56853-54, 56856; Isabel Island, Kolopakisa Village: SAMA R56916

Acknowledgements

We are extremely grateful to Tjamei Lawrence and Obert Otto (Manus Provincial Administration, Papua New Guinea), who invited SJR to Manus Island, and to the landowners of Tulu 1 Village and Chachuau Camp for their hospitality and field assistance. Rose Singadan and Paulus Kei (University of Papua New Guinea, Port Moresby, Papua New Guinea) provided support in Port Moresby and Barbara Roy (Department of Environment and Conservation, Port Moresby, Papua New Guinea) approved the export permit. Jim Robins (National Research Institute, Port Moresby, Papua New Guinea), has been most helpful with Research Visas. Field work on Manus Island was supported by the Wildlife Conservation Society, and funding for laboratory equipment was provided in part by the Mark Mitchell Research Foundation and the South Australian Museum Board. Andy Mack, then of Wildlife Conservation Society, Goroka, Papua New Guinea, provided invigorating discussions about New Guinea conservation and biology through frequent downpours during our field-work on Manus. The curators of the following museums kindly provided access to specimens in their care: Barry Clarke (Natural History Museum, London, England), Linda Ford and Darrel Frost (American Museum of Natural History, New York, U.S.A.), José Rosado (MCZ, Harvard, U.S.A.), Marinus Hoogmoed and Pim Arntzen (RMNH, Naturalis, Leiden, The Netherlands), and Giuliano Doria (MSNG, Genoa, Italy). During the course of this research SJR was supported in part by the Winifred Violet Scott Estate and manuscript preparation was supported by a grant from Conservation International. Lisa Capon (Speewah, Australia) produced Figs 2-3 and John Bird (Adelaide, Australia) assisted with the call analysis. Chris Austin (Louisina State University, USA) and Andrew Mack provided several specimens of Manus *Platymantis* and Carolyne Kovach and Mark Hutchinson provided numerous courtesies at the South Australian Museum, Adelaide, Australia. Rainer Günther (Museum für Naturkunde, Berlin, Germany) and an anonymous reviewer provided extremely useful comments on the manuscript.

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Table 1. Call characteristics of *Platymantis custos* sp. nov.

Specimen number	Number of calls	Notes / call	Call length (sec.)	Note rep. rate (notes / sec.)	Note length	Inter-note length	Dominant Frequency (Hz)
SAMA R63512	8	10-33	0.9-3.1	9.79-10.51	0.02-0.03	0.06-0.14	3603-3823
SAMA R63513	3	15-30	1.4-3.3	8.93-9.88	0.01-0.03	0.07-0.13	3755-4128
SAMA R 63525	8	6-30	0.4-2.9	9.19-16.13	0.01-0.04	0.01-0.14	3711-4317
Mean		21.63	2.105	10.346	0.022	0.078	3835
SD		11.015	1.171	0.830	0.004	0.016	23.30




Table 2. Measurements (in mm) and proportions of the type series of *Platymantis custos* sp. nov. (SAMA R63525 = holotype).

Reg No.	Sex	SVL	TL	TL/SVL	EN	IN	HW	HL	HL/SVL
SAMA R63510	M	30.3	16.7	0.55	3.8	2.4	10.4	12.1	0.40
SAMA R63511	M	25.9	15.6	0.60	3.2	2.0	8.8	9.7	0.38
SAMA R63512	M	29.6	17.3	0.58	3.8	2.4	10.6	11.9	0.40
SAMA R63513	M	29.6	17.5	0.59	3.9	2.5	9.6	11.5	0.39
SAMA R63514	M	28.8	16.5	0.57	3.9	2.1	9.4	11.2	0.39
SAMA R63515	M	28.0	18.2	0.65	3.7	2.1	9.7	11.1	0.40
SAMA R63516	M	29.5	17.5	0.59	3.9	2.4	10.2	11.5	0.39
SAMA R63517	M	29.6	17.4	0.59	4.0	2.1	9.9	11.7	0.40
SAMA R63518	F	29.5	18.6	0.63	3.9	2.4	10.2	11.3	0.38
SAMA R63519	M	29.6	18.0	0.61	3.7	2.2	9.8	11.5	0.39
SAMA R63520	M	28.8	17.1	0.60	3.9	2.4	10.0	11.9	0.41
SAMA R63521	M	28.7	16.7	0.58	3.8	2.3	9.6	11.1	0.39
SAMA R63522	F	32.8	18.6	0.57	4.1	2.3	10.6	12.5	0.38
SAMA R63523	M	29.1	15.8	0.54	3.5	2.1	10.2	9.5	0.33
SAMA R63525	M	30.9	17.4	0.56	3.8	2.2	10.5	11.5	0.37
UPNG 10018	F	29.3	18.1	0.62	4.1	2.4	9.4	11.9	0.41
UPNG 10019	F	32.2	18.8	0.58	4.2	2.6	9.9	12.1	0.38
UPNG 10020	M	28.6	16.7	0.58	3.5	2.4	9.6	11.2	0.39
UPNG 10021	M	28.4	16.9	0.60	4.0	2.2	9.6	11.4	0.40
UPNG 10022	M	29.0	16.3	0.56	3.6	2.3	9.8	11.2	0.39
UPNG 10023	M	31.1	17.2	0.55	4.3	2.4	10.4	12.4	0.40
UPNG 10024	M	29.3	17.4	0.60	3.8	2.2	9.8	11.5	0.39

Reg No.	EYE	EYE/SVL	EAR	4TD	4TP	3FD	3FP	3FD/3FP	1 FD
SAMA R63510	4.1	0.14	1.9	1.1	0.6	2.1	0.6	3.50	1.0
SAMA R63511	3.3	0.13	2.0	0.9	0.5	1.5	0.5	3.00	0.8
SAMA R63512	4.2	0.14	2.1	1.2	0.6	2.2	0.5	4.40	0.8
SAMA R63513	3.7	0.13	2.0	1.1	0.5	2.1	0.5	4.20	0.9
SAMA R63514	3.3	0.12	2.0	1.0	0.5	1.8	0.5	3.60	0.9
SAMA R63515	3.4	0.12	1.7	1.1	0.5	2.0	0.5	4.00	0.8
SAMA R63516	4.1	0.14	1.9	1.3	0.6	2.1	0.5	4.20	0.9
SAMA R63517	3.5	0.12	2.0	1.0	0.5	1.9	0.5	3.80	0.7
SAMA R63518	3.6	0.12	2.0	1.1	0.6	1.9	0.5	3.80	0.9
SAMA R63519	3.5	0.12	2.0	1.2	0.7	2.0	0.5	4.00	0.9
SAMA R63520	3.4	0.12	1.7	1.2	0.6	2.1	0.5	4.67	0.8
SAMA R63521	3.3	0.12	1.6	1.0	0.4	1.6	0.5	3.20	0.7
SAMA R63522	4.0	0.12	1.7	1.2	0.5	2.1	0.5	4.67	0.9
SAMA R63523	3.2	0.11	1.7	1.0	0.5	1.8	0.5	4.00	0.8
SAMA R63525	3.7	0.12	1.8	1.1	0.5	2.0	0.5	4.00	0.9
UPNG 10018	3.9	0.13	2.0	1.2	0.5	2.2	0.4	5.50	1.0
UPNG 10019	4.0	0.12	2.1	1.1	0.5	2.2	0.6	4.00	0.9
UPNG 10020	3.6	0.13	1.8	1.1	0.5	1.9	0.6	3.46	0.8
UPNG 10021	3.6	0.13	1.9	1.1	0.5	2.1	0.5	4.20	0.8
UPNG 10022	3.6	0.12	2.0	1.0	0.5	2.0	0.5	4.00	0.8
UPNG 10023	3.7	0.12	2.1	1.1	0.5	1.9	0.5	3.80	0.9
UPNG 10024	3.4	0.12	1.6	1.2	0.5	1.9	0.5	4.22	0.9




Figure 1. Adult male (unvouchered) *Platymantis custos* sp. nov. in life, guarding eggs on a leaf in the forest (photo: S.J. Richards).

Richards, Stephen J., Oliver, Paul M., and Brown, Rafe M. 2014. "A new scansorial species of Platymantis Gunther, 1858 (Anura: Ceratobatrachidae) from Manus Island, Admiralty Archipelago, Papua New Guinea." *Biodiversity, biogeography and nature conservation in Wallacea and New Guinea* 2, 123–133.

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