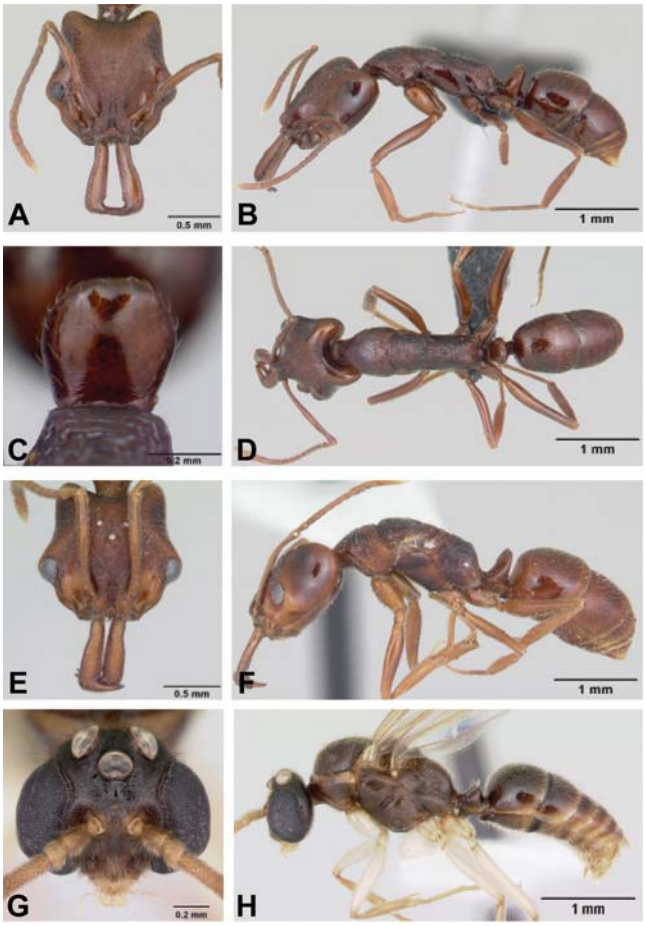

Figure 7. *Anochetus pattersoni*. A–D Worker holotype CASENT0102280 full face, lateral view, upper part of petiole from rear view, dorsal view. E–F, queen paratype CASENT0103343 full face and lateral view. G–H, male CASENT0172617 full face and lateral view.
doi:10.1371/journal.pone.0001787.g007

CO1. Average intraspecific sequence divergence of 6.37%. There is strong geographic coherence in the divergence patterns (Figs 9, 15, Table 2) with deep divergences occurring between separate regions isolated by habitat and mountains.

Diagnostic barcoding loci. *A. goodmani:* Y-231 (*madagascarensis* and *grandidieri* A; *boltoni* and *pattersoni* T), W-233 (all others A), RWR-368-370 (others are all ATG), Y-541 (others are all T), R-543 (others are all A), W-546 (others are all T), W-585 (others are all T), M-634 (others are all C). RWCW-42-45 & WTTAG-66-70 (this distinguishes *goodmani* from all (including *boltoni*) except some *madagascarensis*), & GT-83-84 (*madagascarensis* is TA).

Discussion. *Anochetus goodmani* is characterized by extreme divergence within the barcode region. To date, sequencing complementary nuclear markers has provided some degree of support for the deepest CO1 divergences (between the north and south-west of Madagascar) as being separate species. Importantly however, ITS1 sequences as divergent have been produced from the same individual (Appendix S1 and Table 3). Although CO1 supports more than one operational unit within *A. goodmani* the hypothesis of cryptic species in relatively isolated environments requires further evidence with less ambiguity.

Additional material examined for *Anochetus goodmani:* In addition to the type material, specimens from 56 additional collecting events from the following 18 localities were examined in this study. MADAGASCAR: Province Antsiranana: Montagne des Français, 7.2 km 142° SE Antsiranana; Parc National Montagne d'Ambre; Réserve Spéciale de l'Ankarana, 13.6 km 192° SSW Anivorano Nord; Réserve Spéciale de l'Ankarana, 22.9 km 224° SW Anivorano Nord; Forêt d'Ampondrabe, 26.3 km 10° NNE Daraina; Forêt d' Andavakoera, 21.4 km 75° ENE Ambilobe; 4.6 km 356° N Betsiaka; Forêt d' Antsahabe, 11.4 km 275° W Daraina; Forêt de Binara, 7.5 km 230° SW Daraina; Ampasindava, Forêt d'Ambilanivy, 3.9 km 181° S Ambaliha; Forêt d'Anabohazo, 21.6 km 247° WSW Maromandia; Réserve Spéciale de Bemarivo, 23.8 km 223° SW Besalampy; Parc National Tsingy de Bemaraha, 10.6 km ESE 123° Antsalova; Parc National Tsingy de Bemaraha, 2.5 km 62° ENE Bekopaka, Ankidrodroa River; Parc National Tsingy de Bemaraha, 3.4 km 93° E Bekopaka, Tombeau Vazimba. Province Toliara: Parc National de Kirindy Mite, 16.3 km 127° SE Belo sur Mer.

Figure 8. *Anochetus* males, terminalia, lateral view. A, *boltoni* CASENT0063847. B, *grandidieri* CASENT0080660. B, *madagascarensis* CASENT0063421. D, *pattersoni* CASENT0172617.
doi:10.1371/journal.pone.0001787.g008

Anochetus grandidieri Forel

Figures: **worker** 3a–d, 5c; **queen** 3e–h; **male** 3i–j, 8b; **map** 6b

Type material:

Anochetus grandidieri Forel, 1891: 108 [21]. Lectotype: worker, Madagascar, Forest of the east coast (M. Humblot) (MHNG), **present designation** [examined], AntWeb CASENT0101819. Brown, 1978: 606 [2] (description of worker).

Anochetus madecassus Santschi, 1928: 54 [22]. Lectotype: dealate queen, Madagascar, Nossi-Bé (Descarpentries) (NHMB) Lectotype by **present designation** [examined] AntWeb CASENT0101098. Synonymized with *grandidieri* by Brown, 1978: 557 [2].

Worker measurements: maximum and minimum based on all specimens, n = 20. HL 0.79–1.19, HW 0.71–1.06, CI 85–95, EL 0.08–0.13, ML 0.33–0.57, MI 41–54, SL 0.57–0.88, SI 78–86, WL 0.87–1.35, FL 0.57–0.90, PW 0.44–0.62.