

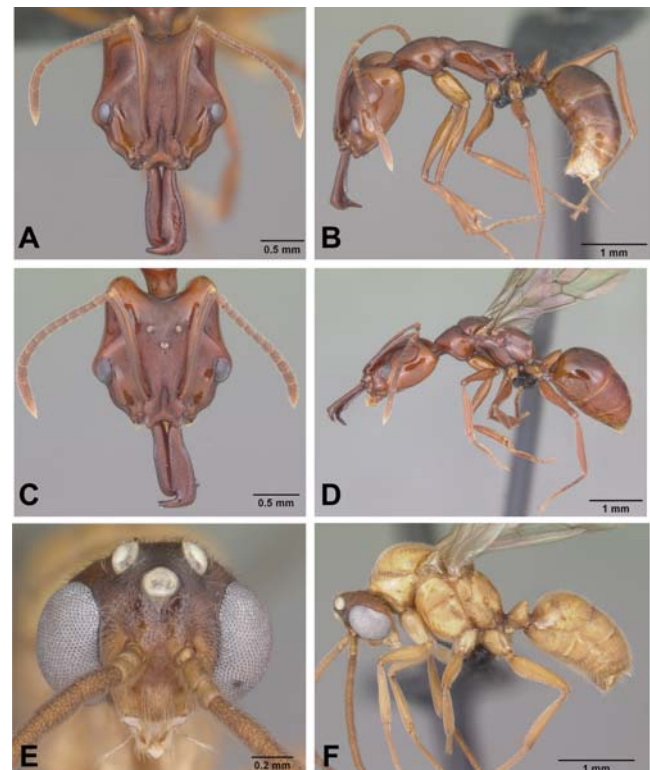
**Figure 3. *Anochetus grandidieri* full face and lateral view.** A–B, large worker CASENT0497580. C–D, small worker CASENT0033463. E–F, large queen CASENT0041177. G–H, small queen CASENT0498467. I–J, male CASENT0049858.

doi:10.1371/journal.pone.0001787.g003

38° NE Andapa, 8.2 km 333° NNW Manantenina, 14°26'12"S, 049°46'30"E, 450 m, sifted litter, rainforest, 12–15 Nov 2003 (coll. B. L. Fisher et al.), comma collection code: BLF08985 pin code: CASENT0104542 (CASC). *Paratype*. 8 workers with same data as holotype but pins coded, CASENT0487895, CASENT0487896, CASENT0487897, CASENT0006943. (BMNH, MCZ, CAS); CO1 Barcode from paratype collection and coded CASENT0487895-D01

**Worker measurements:** maximum and minimum based on all specimens,  $n = 20$ , (holotype): HL 1.80–2.08 (1.95), HW 1.61–1.89 (1.71), CI 87–98 (88), EL 0.33–0.41 (0.36), ML 1.15–1.25 (1.20), MI 59–66 (61), SL 1.83–1.96 (1.84) SI 101–115 (107), WL 2.63–2.89 (2.73), FL 1.97–2.13 (2.03), PW 0.95–1.06 (1.00).

**Male measurements:** maximum and minimum based on  $n = 2$  from Madagascar: HL 0.89–0.91, HW 1.05–1.13, CI 118–125, EL 0.56–0.62, SL 0.24, SI 21–23, WL 2.20–2.24, FL 1.75–1.80



**Figure 4. *Anochetus madagascarensis* full face and lateral view.** A–B, worker CASENT0104547. C–D, queen CASENT0498419. E–F, male CASENT0049282.

doi:10.1371/journal.pone.0001787.g004

**Worker Diagnosis:** Blade of mandible with five teeth and denticles located along distal two thirds of blade's length. Propodeum with short teeth (Fig. 5a). Dorsolateral margin of petiole with long spine (Fig. 5a). In frontal view, petiolar margin deeply U-shaped. Pilosity, sculpture as in Figures 2a,b.

**Male caste:** Dorsolateral margin of petiole with acute spine.

The species is most similar to *A. goodmani*, but can be easily distinguished by its petiole node with a pair of large apical spines.

**Distribution and biology.** The distribution is limited to collections made between 450 m and 750 m in rainforest in Parc National de Marojejy and 240 m from Ambanitaza near Antalaha (Fig. 4a). It has been collected three times in rotten logs and once in a leaf litter sample. Males have been collected in malaise samples on 20–25 Dec 2004 at 488 m in Parc National de Marojejy

**CO1.** The two populations where collections have been made to date are characterized by a deep divergence within the DNA barcode region (Maximum – 8%) (Fig. 15).

**Diagnostic barcoding loci.** *A. boltoni*: ATCT-42-45 & RTTAR-66-70

**Discussion:** Specimens from Ambanitaza differ notably in shape of propodeal spines and length of spines on petiole from those of the type locality. Though these localities are quite close (40 km apart), these character differences are noticeable, and correspond to significant differences in CO1 (34 base pairs) and ITS1. While specimens from each location were invariant within 18S, there is a 7 bp insertion within ITS1 that is characteristic of the Ambanitaza population which is missing from all specimens from Marojejy. Ultimately, more collections need to be made and evaluated in order to test the hypothesis that these populations represent separate species. One important factor to consider in the testing of that hypothesis is reproductive strategy, which is, to our