

Anochetus madagascarensis Forel

Figures: **worker** 1a, 4a,b, 5d; **queen** 4c,d; **male** 4e,f, 8b; **map** 6c

Type material:

Anochetus africanus madagascarensis Forel, 1887: 382 [23]. Lectotype: worker, Madagascar, Tamatave Province, Ivondro, (Dr. Conrad Keller) (MHNG) **present designation** [examined] AntWeb CASENT0101574. Raised to species by Brown, 1978: 557 [2].

Anochetus africanus friederichsi Forel 1918: 155 [24]. Lectotype: worker, Madagascar, Tamatave Province, Prune Island (Nosy Alanana) (Friederichs) (MHNG), **present designation** [examined] AntWeb CASENT010165. Synonymized with *madagascarensis* by Brown, 1978: 557 [2].

Worker measurements: maximum and minimum based on $n = 20$. HL 1.35–1.68, HW 1.19–1.53, CI 87–94, EL 0.23–0.28, ML 0.73–0.93, MI 53–57, SL 1.11–1.41, SI 89–95, WL 1.60–2.02, FL 1.13–1.54, PW 0.63–0.80.

Queen measurements: maximum and minimum based on $n = 5$. HL 1.52–1.66, HW 1.48–1.55, CI 92–97, EL 0.32–0.36, ML 0.81–0.89, MI 53–55, SL 1.26–1.39, SI 85–91, WL 1.99–2.22. FL 1.35–1.49, PW 0.84–0.92.

Male measurements: maximum and minimum based on $n = 5$ from Madagascar: HL 0.85–1.89, HW 1.07–1.20, CI 122–135, EL 0.63–0.69, SL 0.20–0.22, SI 18–21, WL 1.90–1.98, FL 1.35–1.47

Worker Diagnosis: Inner blade of mandible without teeth and denticles; apical end of inner blade with notched semicircular concavity (Fig. 1a). Eyes large (0.24–0.26 mm), projecting dorsally. In full face view, antennal scape extends beyond posterior margin of occipital lobe. Dorsal surface of head asetose. Pilosity and sculpture as in Figures 4a,b.

Queens alate: Very similar to worker and only slightly larger (Figs 4c,d). Queens of only one size. Ergatoid queens not recorded.

Males: Males light yellowish brown in color and with large projecting ocelli on vertex (Figs 4e,f). Males have been collected in Malaise traps in every month of the year and males have been noted to swarm and fly at dusk and early evening.

The species is most similar to *A. grandidieri* but can be easily distinguished by its large eyes (0.24–0.26 mm), and scapes that surpass occipital lobes.

Distribution and biology. *A. madagascarensis* is widespread throughout Madagascar in forest or shrubland habitats below 1100 m elevation and is also known from the Comoros. Forel's (1912:159) record of a male "*Anochetus* sp.? *africanus* var. *madagascariensis* Forel" from Seychelles, Mahé, has not been seen and confirmed. This record most likely refers to *pattersoni*. In Madagascar, *madagascarensis* is widespread and has been collected in gallery, dry, littoral, lowland, and montane forests, and in desert spiny bush thicket in the southwest of Madagascar. The longer scapes and larger eyes of *A. madagascarensis* compared to *A. grandidieri*, correlate with nesting and foraging above the soil layer. The species was most often recorded nesting in rotten logs (99 collection records) followed by sifted litter (41). In addition, it was collected from dead twigs above ground (1), rot pockets (2), ground foragers (20), ground nests (6), Malaise trap (14), on low vegetation (2), and pitfall traps (4).

CO1. Shallow intraspecific and deep interspecific divergences between *A. madagascarensis* and the other species. Average within species sequence divergence of 1.67% (SE = 0.055) (Fig. 16).

Diagnostic barcoding loci. *A. madagascarensis*: A-21, T-423 (shared with one *A. goodmani* population), T-132 (shared with one *A. grandidieri* population), T-83, A-84, T-93, T, 138, C-306, T-513, A-595

Specimens examined for *Anochetus madagascarensis*:

Specimens from 326 separate collection events from the following 129 localities were examined.

COMORES: **Mayotte Island:** Majimbini; Coconi DAF campus; Poroani; Riv. Kouale nr. Caserne; Convalescence; Dziani Karihani; Tsingoni; Mt. Choungui; Mt. Combani; Coconi, SDA (service du developpement agricole); Mt. Benara; Sazile; MADA-GASCAR: **Antsiranana:** Nosy Be 5 km SE Marodokana; ridge behind Sambava, Q-37; Antalaha 18 km North; Nossi bé;; 68 km SW of Sambava; Ambohitsara, 10 km SW Antalaha; 2 km W Antalaha; Soavinandriana; 2 km S Antalaha; Orangea, 3 km E Ramena [near fort]; Forêt d'Orangea, 3.6 km 128° SE Remena; Sakalava Beach; 1 km W Sakalava Beach; 3 km W Sakalava Beach; Montagne des Français, 7.2 km 142° SE Antsiranana; Montagne Française; 7 km N Joffreville; Réserve Spéciale d'Ambre, 3.5 km 235° SW Sakaramy; Parc National Montagne d'Ambre; Parc National Montagne d'Ambre; Parc National Montagne d'Ambre [Petit Lac road]; Parc National Montagne d'Ambre, 3.6 km 235° SW Joffreville; Rés. Analamerana, 16.7 km 123° Anivorano-Nord; Réserve Spéciale de l'Ankarana, 13.6 km 192° SSW Anivorano Nord; Ankarana; Res. Ankarana; Réserve Spéciale de l'Ankarana, 22.9 km 224° SW Anivorano Nord; Forêt d'Ampondrabe, 26.3 km 10° NNE Daraina; Forêt d'Analabe, 30.0 km 72° ENE Daraina; Forêt d' Andavakoera, 21.4 km 75° ENE Ambilobe; 4.6 km 356° N Betsiaka; Forêt de Bekaraoka, 6.8 km 60° ENE Daraina; Forêt d' Antsahabe, 11.4 km 275° W Daraina; Forêt de Binara, 7.5 km 230° SW Daraina; Forêt de Binara, 9.1 km 233° SW Daraina; Nosy Be, Airport; Nosy Be, 5 km Marodokana; Nosy be, Ambatoloaka; Nosy Be, Lokobe Forest; Nosy Be, 4 km ESE Andoani (= Hellville); Nosy Be, Réserve Naturelle Intégrale de Lokobe, 6.3 km 112° ESE Hellville; Forêt Ambato, 26.6 km 33° Ambanja; Ambondrobo, 41.1 km 175° Vohemar; Ampasindava, Forêt d'Ambilanivy, 3.9 km 181° S Ambaliha; R.S. Manongarivo, 10.8 km 229° SW Antanambao; R.S. Manongarivo, 12.8 km 228° SW Antanambao; Forêt d'Anabohazo, 21.6 km 247° WSW Maromandia; Forêt Ambohibato, 27.2 km 349° Antalaha; Forêt Ambanitaza, 26.1 km 347° Antalaha; 18 km N Antalaha, Ampahana; 5 km S+5 km W Antalaha; Antalaha, 12 km S; Marofinaritra; 14 km W Cap Est, Ambato; **Mahajanga:** Forêt Ambohimanga, 26.1 km 314° Mampikony; Parc National d'Ankarafantsika, Forêt de Tsimaloto, 18.3 km 46° NE de Tsaramandroso; Ampijoroa National Park, 160 km N Maevatanana, Mahajanga Prov., deciduous forest; Parc National de Namoroka, 16.9 km 317° NW Vilandro; Parc National de Namoroka, 9.8 km 300° WNW Vilandro; Réserve Spéciale de Bemarivo, 23.8 km 223° SW Besalamy; Parc National Tsingy de Bemaraha, 2.5 km 62° ENE Bekopaka, Ankidrodra River; Parc National Tsingy de Bemaraha, 3.4 km 93° E Bekopaka, Tombeau Vazimba; **Toamasina:** Ivondro p. Tamatavé; Ilât Prune bei Tamatave; Tamatave; Res. Betampona, Ambodiriana 45 km NW Toamasina; Res. Ambodiriana, 4.8 km 306° Manompana, along Manompana river; Parcelle K9 Tampolo; S.F. Tampolo, 10 km NNE Fenoarivo Atn.; Parcelle E3 Tampolo; Mahavelona (Foulpointe); Analalava, 7.0 km 255° Mahavelona; Manakambahiny Atsinanana; Forêt Ambatovy, 14.3 km 57° Moramanga; Torotorofotsy; Andasibe National Park, botanic garden near entrance, West of ANGAP office; 7 km SE Andasibe National Park Headquarters; **Fianarantsoa:** Riv. Morongolo Aff de Rongaronga; Local: Antanandava PK 285 RN2; Nat. Pk. Ranomafana, Miaranony Forest; Ranomafana Nat. Park; Ranomafana Nat. Park, Vohiparara, Hotel; 8 km NE Kianjavato, Vatovavy forest; Nat. Pk. Ranomafana, Miaranony Forest; Ranomafana Nat. Park, Tsarahomanana; 7 km W Ranomafana; 8 km E Kianjavato, Vatovavy Forest; 7.6 km 122° Kianjavato, Forêt