

A new species of *Ellipanthus* Hook.f. (Connaraceae) from humid forest in east-central Madagascar

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ABSTRACT

A new species of the genus *Ellipanthus* Hook.f. is described from the Ankeniheny forest, a low- to mid-elevation humid forest in eastern Madagascar. It differs from the single species previously recognized on the island by leaf features, especially the size and shape of the blade and the shape of the apex. An illustration is provided for the new taxon, along with a preliminary assessment of its conservation status and a distribution map. An identification key is also included.

KEY WORDS

Connaraceae,
Ellipanthus,
Madagascar,
conservation,
new species

RÉSUMÉ

Une nouvelle espèce d'Ellipanthus Hook.f. (Connaraceae) de la forêt ombrophile du centre-est de Madagascar.

Une nouvelle espèce d'*Ellipanthus* Hook.f. est décrite d'Ankeniheny, une forêt ombrophile de basse à moyenne altitude située dans la région est de Madagascar. Elle diffère du seul autre membre du genre actuellement reconnu de cette île par des caractères foliaires, en particulier la taille et la forme du limbe et la forme de l'apex. Une illustration et une première estimation du statut de conservation sont présentées pour ce nouveau taxon, de même qu'une carte de répartition et une clé d'identification.

MOTS CLÉS

Connaraceae,
Ellipanthus,
Madagascar,
conservation,
espèce nouvelle.

INTRODUCTION

During the past two decades, botanists from the Missouri Botanical Garden, in collaboration with staff members from several Malagasy research organizations, have conducted inventories in many parts of the floristically rich island of Madagascar. Their work has resulted in a dramatic increase in the number of collections available, including many from areas that had previously received little or no attention by botanists. This new wave of exploration has generated material that has contributed significantly to improving the taxonomy of many plants groups (see for example Callmander *et al.* 2008; Rogers 2009) and has led to the discovery and description of many new species (e.g., Callmander *et al.* 2009; Randrianasolo & Lowry 2009; Schatz & Lowry 2006). Recently, while examining specimens collected as part of a botanical inventory of a low- and mid-elevation humid forest in east-central Madagascar, we realized that a collection from the Ankeniheny forest, located SE of the town of Moramanga, might represent an undescribed species in the genus *Ellipanthus* Hook.f. (Connaraceae). Careful comparison with the material available at the major herbaria with extensive holdings from the island (MO, P, TAN and TEF) assigned to

the sole species currently recognized in Madagascar, *E. madagascariensis* (Schell.) Capuron, confirmed that this recent collection represents a new entity, which we describe below.

Ellipanthus is currently considered to include six or seven species, with representatives in East Africa, Madagascar and southern Asia (India, Sri Lanka, Malaysia, and South China) (Lemmens 1989, 1992). In the *Flore de Madagascar et des Comores* (Keraudren 1958), the single species recognized (*E. madagascariensis*) was regarded as endemic, but Lemmens (1992) indicated that material from coastal Kenya and Tanzania previously placed in *E. hemandradenia* Brenan represented the same taxon. According to Schatz (2001), however, the considerable morphological variation found among the specimens from Madagascar suggested that more than one species occurs there. Further examination of these collections has confirmed his assessment, and has stimulated members of the team preparing the *Catalogue of the Vascular Plants of Madagascar* (<http://www.efloras.org/madagascar>) to begin preparing a full taxonomic revision of the genus in Madagascar. In anticipation of this new treatment, we describe the new entity from Ankeniheny forest, which is clearly distinct from any other *Ellipanthus* collected to date on the island.

KEY TO THE SPECIES OF *ELLIPANTHUS* HOOK.F. FROM MADAGASCAR

- Leaf blades 2.6-3.2 × 2-2.3 cm, obovate to widely obovate, apex emarginate or rounded *E. razanatsimae*
- Leaf blades (2.5-)4-14 × 2.8-6 cm, ovate to lanceolate, apex acuminate (rarely rounded) *E. madagascariensis*

SYSTEMATICS

1. *Ellipanthus razanatsimae*

Randrian. & Lowry, sp. nov.

(Figs 1; 2)

Haec species ab Ellipantho madagascariensi foliis parvis (2.6-3.2 × 2.0-2.3 vs. 8.5-13.5 × 2.8-5.0 cm) obovatis vel late obovatis (vs. ovatis usque lanceolatis) apice emarginatis rotundatisve (vs. acuminatis) distinguitur.

TYPUS. — Madagascar. Alaotra-Mangoro region, district Moramanga, commune Lakoto, village Manasamena, forêt Corridor Ankeniheny, 19°04'02"S, 48°22'02"E,

1041 m, 20.IX.2007, fl., *Razanatsima, Rasoarivety, Galy, Celestin & Zavason 378* (holo-, MO!; iso-, G!, MO!, P!, TAN!).

DESCRIPTION

Small tree *c.* 4 m tall; young twigs covered with lenticels, pubescent at the tips. Leaves unifoliolate, alternate, coriaceous; blades of largest leaves 2.6-3.2 × 2-2.3 cm, widely obovate, glabrous on both surfaces except along midvein, base obtuse, margins entire, revolute, apex mostly emarginate, sometimes retuse or rounded, venation brochidodromous, midvein adaxially depressed, abaxially prominent,

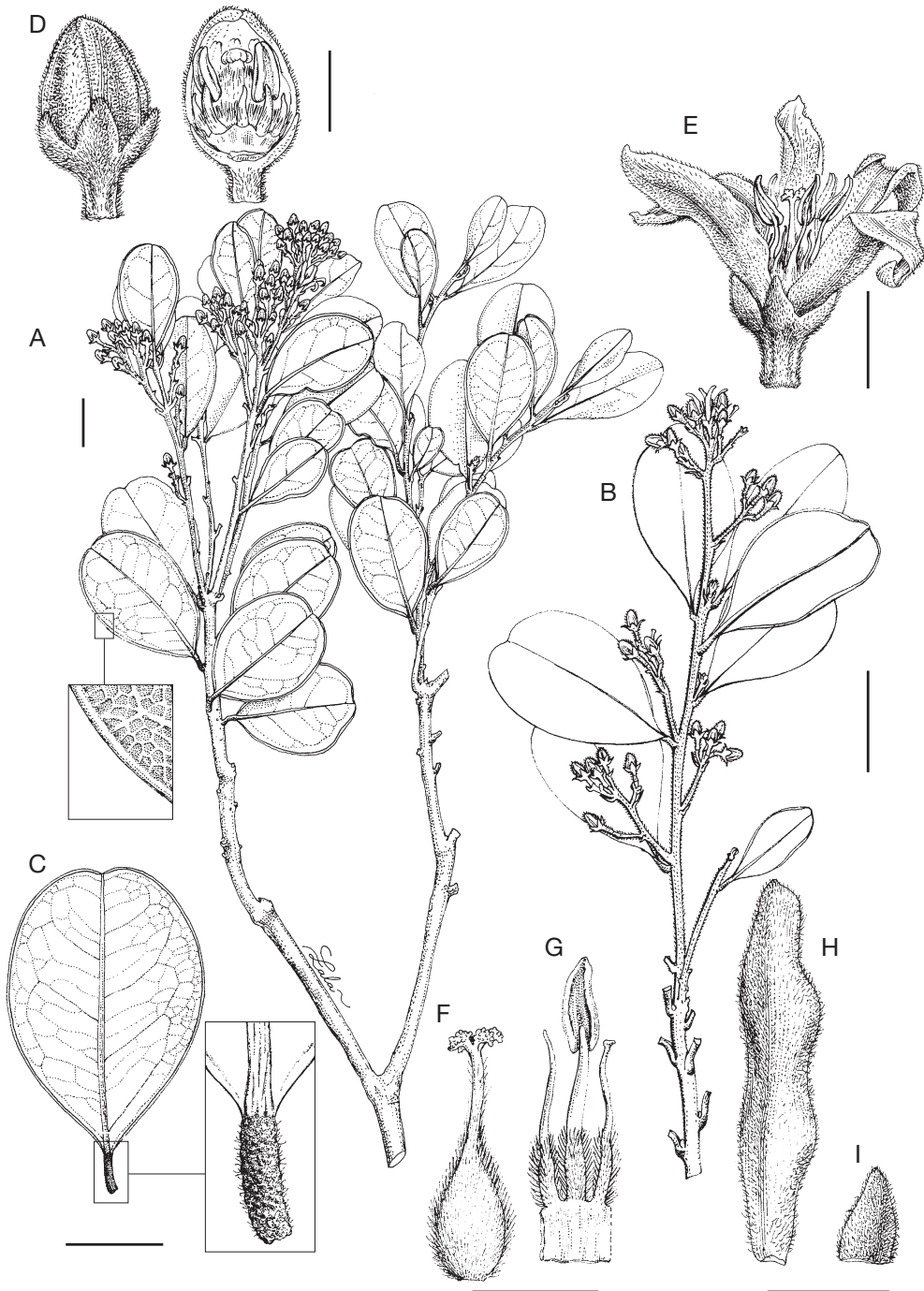


FIG. 1. — *Ellipanthus razanatsimae* Randrian. & Lowry: **A, B**, branches with buds and open flowers; **C**, detail of leaf venation and indument on petiole; **D**, unopened floral buds, with perianth removed (right); **E**, flower at anthesis; **F**, gynoecium; **G**, portion of androecium showing a stamen and two staminodia; **H**, petal; **I**, sepal. *Razanatsima et al.* 378. Scale bars: A-C, 1 cm; D, E, 3 mm; F-I, 2 mm.

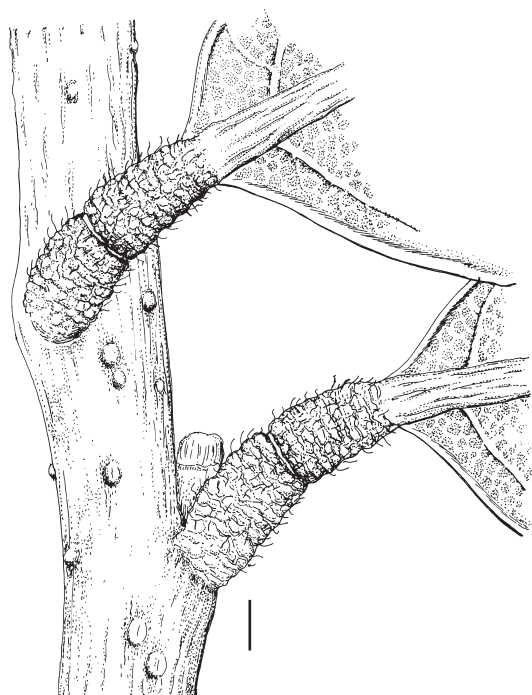


FIG. 2. — *Ellipanthus razanatsimae* Randrian. & Lowry: detail of articulated petioles. *Razanatsima et al.* 378. Scale bar: 1 mm.

sericeous, secondary veins impressed adaxially, slightly prominent abaxially, 4 or 5 pairs, arcuate, tertiary veins reticulate, forming regular polygons. Petiole short, 2–3 mm, articulate, glabrescent, shallowly canaliculate adaxially. Inflorescences paniculate, rusty-brown pubescent, clustered at the ends of branches, axillary or subterminal, 2–4 cm long. Flowers hermaphrodite, pentamerous; pedicel *c.* 1.5 mm long, pubescent; sepals 1.5 × 1 mm, ovate, densely pubescent abaxially, much less so adaxially, valvate; petals 6 × 2 mm, lanceolate, reflexed at anthesis, pubescent on both surfaces, imbricate; stamens 10, 5 fully functional and antepetalous, 5 non-functional (staminodes) and antepetalous, lacking anthers; filaments 2.5–3 mm long in functional stamens, *c.* 1.5 mm in staminodes, broadened and flattened toward the base, proximal half villous; anthers 1–1.3 mm long, dorsifixed, introrse, ovate, glabrous, opening by longitudinal slits; ovary 1.5 mm long, 1 mm broad, ovoid to ellipsoid, villous, 1-locular, with 2 hemi-anatropous ovules; style

short, *c.* 1 mm long, partly villous; stigma capitate and irregularly lobed. Fruit not seen.

REMARKS

Ellipanthus razanatsimae is only known from a single collection in flower made in low- to mid-elevation humid forest at Ankeniheny (Fig. 3), which forms part of the Ankeniheny-Zahamena corridor in Moramanga district. This species differs markedly from the material currently assigned to *E. madagascariensis* by its small leaves (2.6–3.2 × 2–2.3 vs. [2.5–]4–14 × 2.8–6 cm) that are obovate to widely obovate (vs. ovate to lanceolate) with an emarginate or rounded apex (vs. acuminate in all but a single specimen of *E. madagascariensis*).

ETYMOLOGY

The species epithet honours Aina Razanatsima, a young field botanist working for the Missouri Botanical Garden who is passionate about the Malagasy flora and has tirelessly conducted botanical expeditions in many parts of the island, often working in very difficult field conditions.

CONSERVATION STATUS

Only a single individual of *Ellipanthus razanatsimae* was observed at the type locality situated in partially degraded forest adjacent to an area that was being cleared for shifting cultivation. Based on the IUCN Red List criteria (IUCN 2001), we assign a provisional conservation status of Critically Endangered (CR B1ab (iii)+2ab(iii)).

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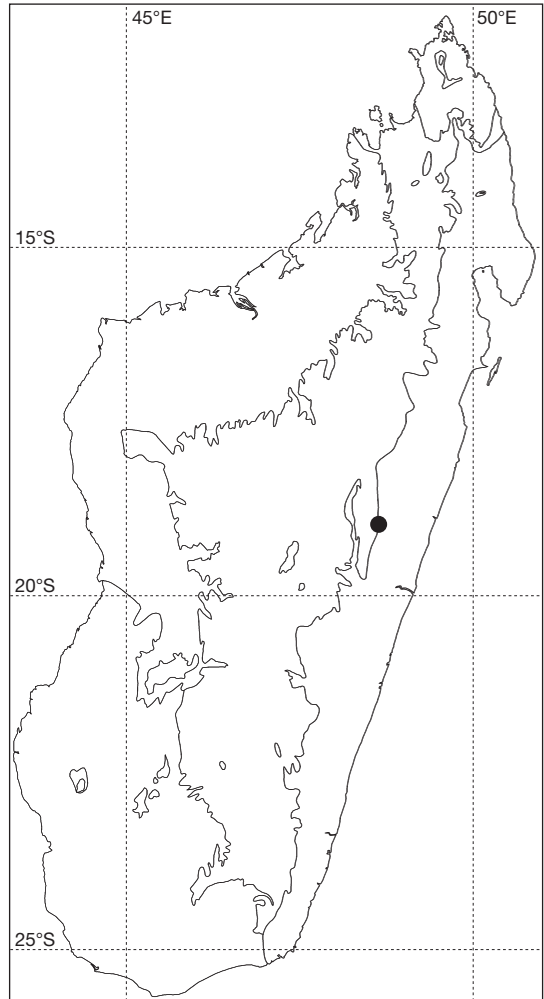


Fig. 3. — Distribution of *Ellipanthus razanatsimae* Randrian. & Lowry, mapped on the bioclimatic zones of Madagascar (after Cornet 1974; see Schatz 2000).

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