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Short communication

# New records of *Ficus* (Moraceae) species emphasize the conservation significance of inselbergs in Mozambique

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**Abstract**

*Ficus modesta* F. White and *Ficus cyathistipula cyathistipula* Warburg are recorded for the first time from Mozambique. The new records from Mount Namuli in Zambezia Province extend the known distribution of *F. modesta* 160 km east and that of *F. cyathistipula* 550 km southeast. Fig species richness for Mozambique is elevated to 35 species, which thus compares favourably with neighbouring countries. A revised checklist is provided for Mozambique and fig species richness of central and southern African countries is compared. The Mount Namuli inselberg is likely to be a biodiversity hotspot and urgently requires biological exploration and conservation.


*Keywords:* Biodiversity; Conservation; *Ficus cyathistipula*; *Ficus modesta*; Inselberg; Moraceae; Mozambique; Namuli

## 1. Introduction

*Ficus* species richness is centered in the tropics with about 755 fig tree species worldwide. Around 511 species are Indo-Australasian (Asia, Malesia, Pacific islands and Australia), with the Malesia centre (359 spp.) being the hotspot of species richness (Asian mainland: 67 spp.; Pacific: 67 spp.; Australia: 18 spp.) (C.C. Berg personal communication; Berg and Corner, 2005; Dixon, 2003; Ungricht et al., 2003). Approximately 132 species occur in the Neotropical region (Central and South America) (C.C. Berg personal communication). In the Afro-tropical region (Africa south of the Sahara, including Madagascar), there are currently 112 recognized species, 36 of which are indigenous to southern Africa (Berg, 1990, 1991; Berg and Wiebes, 1992; Burrows and Burrows, 2003).

As would be expected, countries in tropical areas of Africa boast high fig species richness. Given the pan-tropical distribution of *Ficus*, it is predictable that temperate countries such as South Africa (26 spp.), Namibia (11 spp.) and Botswana (15 spp.) support a lower diversity (Berg, 1990; Burrows and Burrows, 2003; Germishuizen et al., 2006). Conversely, Mozambique lying on the wetter eastern side of south-central Africa would be expected to have fairly high fig species richness. Da Silva et al. (2004) in their preliminary checklist of the vascular plants of Mozambique record 29 species of *Ficus*. However, three of these are considered to be invalid records: *Ficus congensis* Engl. is a synonym of *Ficus trichopoda* Bak. (Berg and Wiebes, 1992; Burrows and Burrows, 2003); *Ficus platyphylla* Delile is a northeast African species allied to *Ficus bussei* Mildbr. Burret; and *Ficus thonningii* Bl. *sensu stricto* is a West African taxon (see discussion in Burrows and Burrows, 2003). The checklist also leaves out seven additional species known to occur in Mozambique: *Ficus salicifolia* Vahl, *Ficus nigropunctata* Warb., *Ficus tettensis* Hutch., *Ficus muelleriana* C.C. Berg, *Ficus fischeri* Warb., *Ficus chirindensis* C.C. Berg and *Ficus ovata* Vahl (Burrows and Burrows, 2003), resulting in a total of 33 species confirmed to date.

Most of the interior of northern Mozambique consists of a relatively flat plateau (700–800 m alt.) with numerous, isolated granite inselbergs rising above the surrounding plains. These

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inselbergs are considered to be biodiversity hotspots (Izidine and Bandeira, 2002) yet very few biological collections have been made from them. Birds were first collected from these inselbergs during a British Museum expedition to Northern Mozambique in 1931–1932 (Vincent, 1933). More recently, Ryan et al. (1999) carried out a short survey of the avifauna of Mount Namuli, which harbours an endemic bird species, and established two new lizard species records for Mozambique (Branch and Ryan, 2001). During a recent combined Iziko South African Museum and South African National Biodiversity Institute (SANBI) expedition, we recorded two new *Ficus* species distributions for Mozambique. In this paper, we document these records and provide a revised checklist of the fig trees occurring in Mozambique. The discovery of these species has direct relevance in the assessment of inselbergs as a priority for conservation and on their status as biodiversity hotspots.

## 2. Methods

### 2.1. Study site

Mount Namuli at an elevation of 2412 m is Mozambique's second highest mountain after Mt. Binga (2436 m), with the latter situated in the Chimanimani range on the eastern border with Zimbabwe. The Namuli inselberg (15°22′S, 37°02′E) is situated approximately 12 km northeast of Gurué and 160 km east of Mt. Mulanje. The mountain is a conglomeration of impressive granite outcrops with several other peaks over 2200 m. Presently, tea plantations and to a lesser extent *Eucalyptus* plantations dominate the lower slopes of the mountain, whereas the mid slopes are occupied chiefly by subsistence agriculture. On these slopes, indigenous forest is now confined to narrow bands along rocky river courses, a substrate precluding plantations or agricultural activity. We surveyed remnant riparian forest for fig species across an approximate elevation range of 800 to 1200 m on the southern slopes of Mount Namuli over a two-day period (Fig. 1).

## 3. Results

We record an additional two fig species from section *Galoglychia* for Mozambique, *Ficus cyathistipula* (subsection *Cyathistipulae*) and *Ficus modesta* (subsection *Caulocarpae*). These additional records elevate the fig species richness for this country to 35 (Table 1), a richness on a par with the neighbouring countries Zimbabwe, Malawi, Zambia and Tanzania (Fig. 2). Seventy-four percent of the 47 described *Ficus* species indigenous to south-central Africa occur in Mozambique (Table 2). Photographs were taken of the trees in the field from which voucher herbarium specimens were collected (Fig. 3).

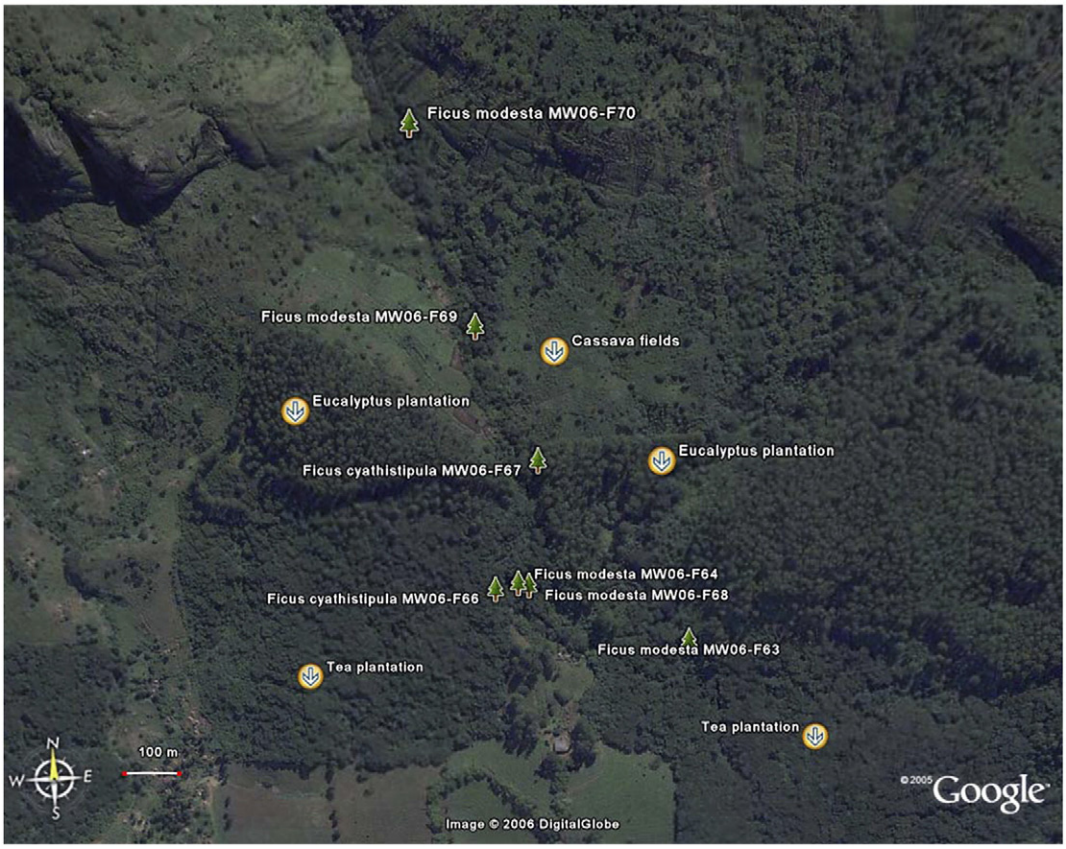


Fig. 1. Satellite image of sampling area on Mount Namuli illustrating localities of recorded fig tree individuals for *F. cyathistipula cyathistipula* and *F. modesta*.

Table 1
Checklist of indigenous *Ficus* species recorded from Mozambique (compiled from Berg, 1991; Burrows and Burrows, 2003; Da Silva et al., 2004 and records presented in this paper)

| *Ficus* species | Provincial distribution |
|---|---|
| Subgenus: *Sycidium* | |
| Section: *Sycidium* | |
| 1. *F. capreifolia* Delile | All provinces |
| 2. *F. exasperata* Vahl | All provinces except Tete, Gaza, Maputo |
| Subgenus: *Sycomorus* | |
| Section: *Sycomorus* | |
| 3a. *F. sycomorus sycomorus* L. | All provinces |
| 3b. *F. sycomorus gnaphalocarpa* (Miq.) C.C. Berg. | All provinces except Gaza, Maputo |
| 4. *F. sur* Forsk. | All provinces |
| 5. *F. vallis-choudae* Delile | Niassa, Zambezia, Sofala, Manica |
| Subgenus: *Urostigma* | |
| Section: *Urostigma* | |
| Subsection: *Urostigma* | |
| 6. *F. ingens* (Miq.) Miq. | Niassa, Nampula, Zambezia, Tete, Sofala, Manica |
| 7. *F. salicifolia* Vahl | Tete, Maputo |
| 8. *F. verruculosa* Warb. | All provinces except Cabo Delgada |
| Section: *Galoglychia* | |
| Subsection: *Galoglychia* | |
| 9. *F. lutea* Vahl | All provinces |
| Subsection: *Platyphyllae* | |
| 10. *F. bussei* Mildbr. and Burret | All provinces except Maputo |
| 11. *F. glumosa* Delile | All provinces except Manica, Sofala, Inhambane |
| 12. *F. stuhlmannii* Warb. | All provinces |
| 13. *F. nigropunctata* Mildbr. and Burret | Niassa, Cabo Delgado, Nampula, Tete |
| 14. *F. tettensis* Hutch. | All provinces except Cabo Delgado, Nampula, Zambezia |
| 15. *F. muelleriana* Berg | Manica |
| 16. *F. abutilifolia* (Miq.) Miq. | All provinces except Inhambane |
| 17. *F. trichopoda* Baker | All provinces except Niassa, Manica |
| Subsection: *Chlamydodorae* | |
| 18. *F. fischeri* Mildbr. and Burret | Niassa, Zambezia, Manica |
| 19. *F. craterostoma* Mildbr. and Burret | Manica |
| 20. *F. linqua depauperata* (Sim) C.C. Berg | All provinces except Niassa, Manica |
| 21. *F. natalensis natalensis* Hochst. | All provinces except Niassa, Cabo Delgado |
| 22. *F. burtt-davyi* Hutch. | Maputo |
| 23. *F. burkei* (Miq.) Miq. | Niassa, Zambezia, Tete, Manica |
| 24. *F. petersii* Warb. | All provinces except Gaza, Inhambane, Maputo |
| 25. *F. rokko* Warb. and Schweinf. | Zambezia, Manica |
| Subsection: *Crassicostae* | |
| 26. *F. usambarensis* Warb. | Nampula |
| Subsection: *Cyathistipulae* | |
| 27. *F. cyathistipula cyathistipula* Warb. | Zambezia |
| 28. *F. scassellatii scassellatii* Pamp. | Zambezia, Manica, Sofala |
| Subsection: *Caulocarpae* | |
| 29. *F. tremula tremula* Warb. | All provinces except Niassa, Manica |
| 30. *F. polita polita* Vahl | All provinces except Niassa, Manica |
| 31. *F. chirindensis* C.C. Berg | Tete, Zambezia, Manica, Sofala |
| Subsection: *Caulocarpae* | |
| 32. *F. modesta* F. White | Zambezia |
| 33. *F. sansibarica sansibarica* Warb. | All provinces |
| 34. *F. bubu* Warb | All provinces except Cabo Delgado |
| 35. *F. ovata* Vahl | Niassa |

### 3.1. *F. cyathistipula* Warb. subsp. *cyathistipula*

#### 3.1.1. Distribution, habitat, dispersal and pollination

*Ficus cyathistipula* subsp. *cyathistipula* is widely distributed in tropical Africa from Liberia in West Africa across to Tanzania in the east and northern Zambia in the south with an outlying population in northern Malawi (Fig. 4) (Berg and Wiebes, 1992; Burrows and Burrows, 2003). Our records add an additional population in Mozambique 550 km south east of the known distribution (Fig. 4). This fig is associated with high rainfall areas, nearly always occurring in riverine forest, swamp forest or along lake margins. On Mount Namuli the species was growing as either a lithophyte or strangler in boulder-strewn riparian forest. The figs are large, spongy and buoyant suggesting a hypothesis of water dispersal (Berg and Wiebes, 1992; Burrows and Burrows, 2003). Animals, however, are also dispersal agents as chimpanzees in Uganda eat them and passage through their digestive tract increases germination viability of the seeds (Wrangham et al., 1994). Foundress female pollinators, *Agaon fasciatum* Waterston, the recorded pollinator of the main population of *F. cyathistipula*, were extracted from B-phase figs collected on Mt. Namuli.

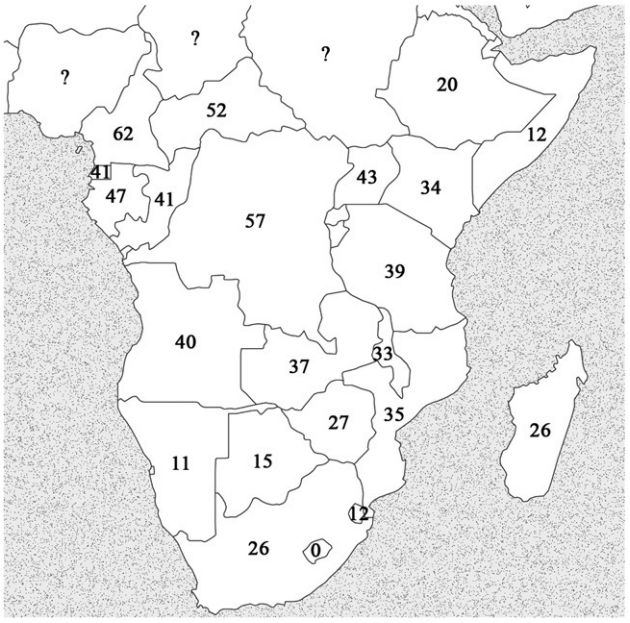


Fig. 2. *Ficus* species richness per country (from Berg and Hijman, 1989; Berg et al., 1984, 1985; Berg and Wiebes, 1992; Burrows and Burrows, 2003; Van Noort, 2004; Van Noort and Rasplus, 2004–2006).

Table 2
Distribution of fig tree species in south-central and southern Africa (after Berg, 1990, 1991; Burrows and Burrows, 2003)

| Host *Ficus* species | | Botswana | Malawi | Mozambique | Namibia | South Africa | Swaziland | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|---|
| *Sycidium* (subgenus) | | | | | | | | | |
| *Sycidium* (section) | | | | | | | | | |
| 1 | *F. exasperata* Vahl | | * | * | | | | * | * |
| 2 | *F. asperifolia* Miq. | | | | | | | * | |
| 3 | *F. pygmaea* Hiern | * | | | * | | | * | |
| 4 | *F. capreifolia* Delile | * | * | * | * | * | * | * | * |
| *Sycomorus* (subgenus) | | | | | | | | | |
| 5a | *F. sycomorus sycomorus* L. | * | * | * | * | * | * | * | * |
| 5b | *F. sycomorus gnaphalocarpa* (Miq.) C.C. Berg | | * | * | * | * | | * | * |
| 6 | *F. sur* Forssk. | * | * | * | * | * | * | * | * |
| 7 | *F. vallis-choudae* Delile | | * | * | | | | * | * |
| *Pharmacosycea* (subgenus) | | | | | | | | | |
| *Oreosycea* (section) | | | | | | | | | |
| 8 | *F. dicranostyla* Mildbr. | | | | | | | * | |
| *Urostigma* (subgenus) | | | | | | | | | |
| *Urostigma* (section) | | | | | | | | | |
| 9 | *F. verruculosa* Warb. | * | * | * | * | * | | * | * |
| 10 | *F. salicifolia* (Vahl) Berg | * | * | * | | * | * | * | * |
| 11 | *F. cordata cordata* Thunb. | * | | | * | * | | | |
| 12 | *F. ingens* (Miq.) Miq. | * | * | * | | * | * | * | * |
| *Galoglychia* (section) | | | | | | | | | |
| *Galoglychia* (subsection) | | | | | | | | | |
| 13 | *F. lutea* Vahl | | * | * | ? | * | | * | * |
| *Platyphyllae* (subsection) | | | | | | | | | |
| 14 | *F. bussei* Mildbr. and Burret | | * | * | | | | * | * |
| 15 | *F. wakefieldii* Hutch. | | | | | | | * | |
| 16 | *F. glumosa* Delile | * | * | * | | * | * | * | * |
| 17 | *F. stuhlmannii* Warb. | | * | * | | * | * | * | * |
| 18 | *F. nigropunctata* Mildbr. and Burret | * | * | * | | | | * | * |
| 19 | *F. tettensis* Hutch. | * | * | * | | * | | * | * |
| 20 | *F. muelleriana* Berg | | | * | | | | | |
| 21 | *F. abutilifolia* (Miq.) Miq. | * | * | * | | * | * | * | * |
| 22 | *F. trichopoda* Baker | | * | * | | * | | * | |
| *Chlamydodorae* (subsection) | | | | | | | | | |
| 23 | *F. fischeri* Mildbr. and Burret | * | | * | * | | | * | * |
| 24 | *F. craterostoma* Mildbr. and Burret | | * | * | | * | * | * | * |
| 25 | *F. linqua depauperata* (Sim) C.C. Berg | | | * | | * | | | |
| 26a | *F. natalensis natalensis* Hochst. | | * | * | | * | | * | * |
| 26b | *F. natalensis leprieurii* (Miq.) C.C. Berg | | | | | | | * | |
| 26c | *F. natalensis graniticola* Burrows | | | | | * | | | * |
| 27 | *F. burtt-davyi* Hutch. | | | * | | * | | | |
| 28 | *F. ilicina* (Sonder) Miq. | | | | * | * | | | |
| 29 | *F. rokko* Warb. and Schweinf. in Warb. | | * | * | | | | | * |
| 30 | *F. psilopoga* Ficalho | | | | | | | * | |
| 31 | *F. persicifolia* Warb. | | | | | | | * | |
| 32 | *F. petersii* Warb. | * | * | * | * | * | * | * | * |
| 33 | *F. burkei* (Miq.) Miq. | * | * | * | | | | | |
| *Crassicostae* (subsection) | | | | | | | | | |
| 34 | *F. usambarensis* Warb | | | | | | | * | |
| *Cyathistipulae* (subsection) | | | | | | | | | |
| 35 | *F. ardisioides camptoneura* (Mildbr.) C.C. Berg | | | | | | | * | |
| 36 | *F. cyathistipula cyathistipula* Warb. | | * | * | | | | * | |
| 37 | *F. scassellatii scassellatii* Pamp. | | * | * | | | | | * |
| 38 | *F. barteri* Sprague | | | | | | | * | |

(continued on next page)

Table 2 (*continued*)

| Host *Ficus* species | | Botswana | Malawi | Mozambique | Namibia | South Africa | Swaziland | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|---|
| *Caulocarpae* (subsection) | | | | | | | | | |
| 39a | *F. ottoniifolia ulugurensis* (Mildbr. and Burret) C.C. Berg | | * | | | | | | |
| 39b | *F. ottoniifolia macrosyce* C.C. Berg | | | | | | | * | |
| 40 | *F. tremula tremula* Warb. | | * | * | | * | | | |
| 41a | *F. polita polita* Vahl | | * | * | | * | | | |
| 41b | *F. polita brevipedunculata* C.C. Berg | | * | | | | | * | |
| 42 | *F. bizanae* Hutch. and Burtt-Davy | | | | | * | | | |
| 43 | *F. modesta* White | | * | * | | | | | * |
| 44 | *F. chirindensis* C.C. Berg | | * | * | | | | | * |
| 45a | *F. sansibarica sansibarica* Warb. | | * | * | | * | * | * | * |
| 45b | *F. sansibarica macrosperma* (Mildbr. and Burret) | | | | | | | * | |
| 46 | *F. bubu* Warb. | | * | * | * | * | * | | * |
| 47 | *F. ovata* Vahl | | * | * | | | | * | |

No fig species have been recorded from Lesotho.

*3.1.2. Specimens collected*

Mozambique: Zambezia Province, Mount Namuli, 3 km NE Gurué, 27 May 2006, 15°26′38.8″S 37°09′21.4″E, 897 m, Van Noort, Gardiner and Tolley, *MW06-F67* (NBG, PRE).

*3.1.3. Additional specimens recorded*

Mozambique: Zambezia Province, Mount Namuli, 3 km NE Gurué, 15°26′44.8″S 37°09′19.5″E, 866 m, Van Noort, Gardiner and Tolley, *MW06-F66*.

*3.2. F. modesta* F. White

*3.2.1. Distribution, habitat and pollination*

*Ficus modesta* was regarded by Berg (in Berg and Wiebes, 1992) as a junior synonym of *Ficus ottoniifolia* subsp. *ulugurensis* (Warb.) C.C. Berg, but Burrows and Burrows (2003) reinstated the taxon as a separate species. *Ficus modesta* was recorded from four adjacent mountains in southern Malawi (Mt. Mulanje [15°58′S 35°38′E], Mchese Mt. [15°48′S 35°42′E], Machemba Hill [15°44′S 35°38′E], Phalombe Hill [15°47′S 35°33′E) as well as in the Aberfoyle area (18°29′S 32°54′E) on the eastern and south-eastern base of Mt. Inyangani in eastern Zimbabwe (Burrows and Burrows, 2003; Dowsett-Lemaire and White, 1990) (Fig. 5). This fig species was surmised to also occur on similar mountains in western Mozambique (Dowsett-Lemaire and White, 1990), but no records have been confirmed from there. Our records add an additional population in Mozambique 160 km east of the nearest known population (Fig. 5). *Ficus modesta* either occurs as a small spreading tree associated with boulders or rock crevices in open mixed woodland and in riparian forest along rocky river beds, or in wetter forest as a lithophyte usually growing near rivers (Burrows and Burrows, 2003). The specimens we observed on Mt. Namuli were either stranglers or lithophytes growing in boulder-strewn riparian forest. The associated fig wasp faunal assemblage was reared for *F. modesta* from figs collected on Mt. Namuli. The pollinator of *F. modesta* is an undescribed species of *Courtella*, remnants of which were originally collected in B-phase figs in southern Malawi (Mikomwa Hill and Mount Mulanje) by John and Sandie Burrows (Van Noort and Rasplus, in preparation).

*3.2.2. Specimens collected*

Mozambique: Zambezia Province, Mount Namuli, 3 km NE Gurué, 15°26′48.9″S 37°09′29.3″E, 817 m, 27.v.2006, Van Noort, Gardiner and Tolley, *MW06-F63* (NBG, PRE).

*3.2.3. Additional specimens recorded*

Mozambique: Zambezia Province, Mount Namuli, 3 km NE Gurué, 15°26′44.8″S 37°09′19.5″E, 866 m, Van Noort, Gardiner and Tolley, *MW06-F64*; 15°26′44.8″S 37°09′19.5″E, 866 m, Van Noort, Gardiner and Tolley, *MW06-F65*; 15°26′45.6″S 37°09′20.6″E, 886 m, Van Noort, Gardiner and Tolley, *MW06-F68*; 15°26′31.8″S 37°09′18.4″E, 941 m, Van Noort, Gardiner and Tolley, *MW06-F69*; 15°26′22.2″S 37°09′15.6″E, 1057 m, Van Noort, Gardiner and Tolley, *MW06-F70*.

## 4. Discussion

*Ficus cyathistipula* and *F. modesta* are likely to be rare in Mozambique, although we expect that further populations will be discovered in suitable habitat on the numerous granite inselbergs in northern Mozambique, in particular Mt. Mabu and Mt. Chiperone. These fig species belong to two subsections, *Cyathistipulae* and *Caulocarpae* respectively, of section *Galoglychia* that are centered in West and Central Africa (Rønsted et al., 2007). *Ficus cyathistipula* is one of only two species belonging to subsection *Cyathistipulae* that extend their distribution as far south as Mozambique. The other is *Ficus scassellatii* Pamp. The isolated Mozambique population of *F. cyathistipula* is at the extreme southern limit of the species distribution and its continued existence is likely to be exceptionally prone to any adverse environmental changes. The presence of populations of *F. modesta* and *F. cyathistipula* on Mount Namuli supports a hypothesis of continuous populations in historically wetter periods. The fig–fig wasp mutualism is an ancient one, at least 60 million years old (Rønsted et al., 2005), and hence has been subjected to

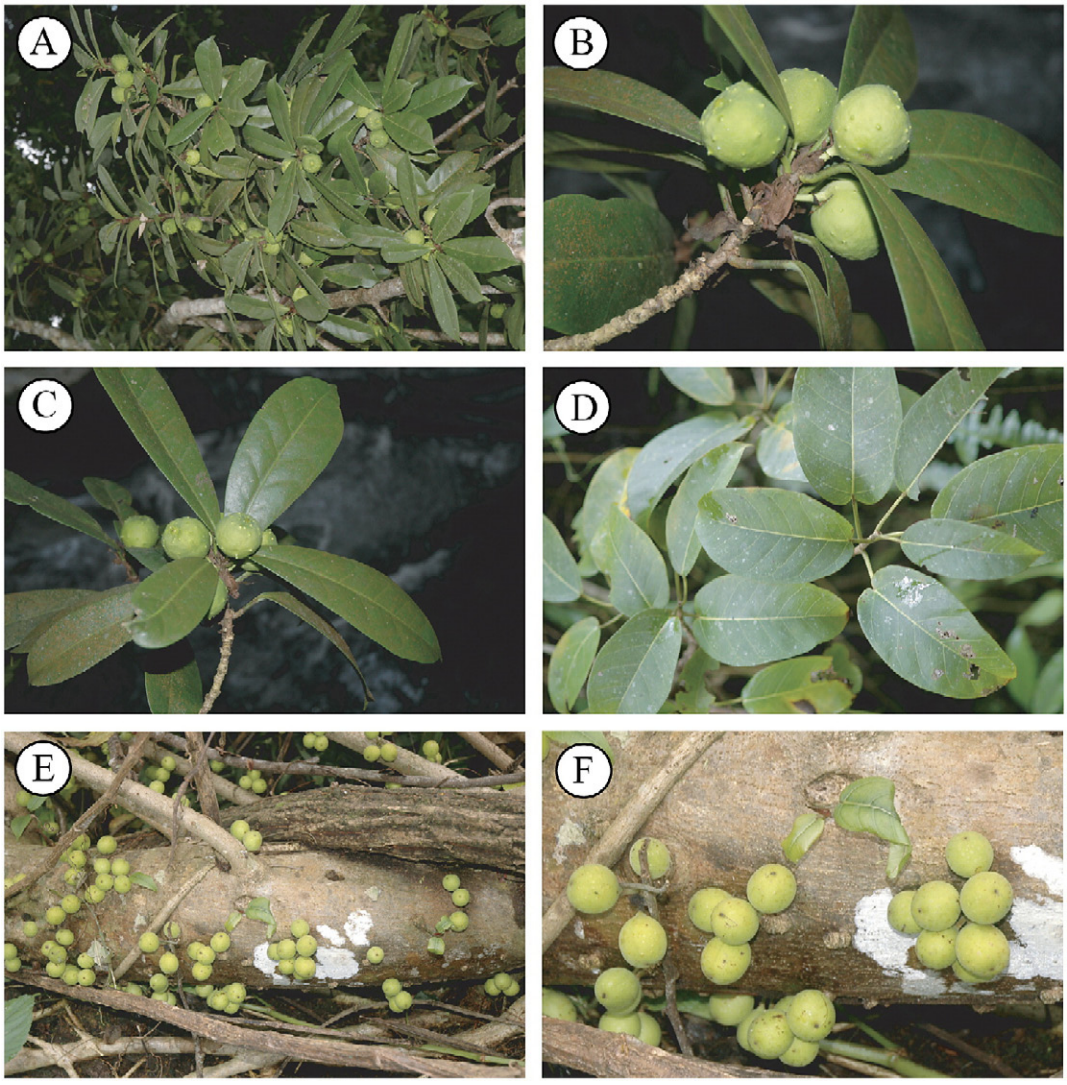


Fig. 3. *F. cyathistipula cyathistipula* (A–C, Van Noort, Gardiner and Tolley, *MW06-F67*) and *F. modesta* (D–F, Van Noort, Gardiner and Tolley, *MW06-F63*).

extreme climatic variation during this period. During the repeated glacial maxima of the Pleistocene epoch, forests in tropical Africa contracted considerably with a corresponding expansion of more xeric environments (Axelrod and Raven, 1978; Denton, 1999). This presumably formed refugia for figs that are restricted to wet habitats. The degree of gene flow between these isolated populations and the main distributional area is unknown but fig wasps are capable of travelling hundreds of kilometres in upper air currents (Compton, 2002; Nason et al., 1996; Van Vuuren et al., 2006). Given the dispersal abilities of the pollinators and the possible presence of the host fig species on other inselbergs, the populations of these two fig species on Mount Namuli may not be genetically isolated.

Mozambique with its rich fig flora not only harbours the extremely localized *F. modesta*, but is also home to *F. muelleriana*, which is probably the rarest and most vulnerable African fig species. This Mozambique endemic, although listed as data deficient in the Southern African Plant Red Data lists (Izidine and Bandeira, 2002), is listed as endangered in the IUCN Red list of threatened species (World Conservation Monitoring Centre, 1998), as it faces a very high risk of extinction in the wild. This species is only known from two localities at the southeastern base of the Chimanimani Mountains in western Mozambique. The two known populations are extremely small (one locality containing in the region of 20 individuals) and unprotected (Burrows and Burrows, 2003). Although this area has yet to be explored and other populations may be discovered the species is under threat from human encroachment. Major threats are habitat loss and degradation as a result of clear cutting of the moist deciduous woodland and infrastructural development for human habitation (World Conservation Monitoring Centre, 1998; A.J. Gardiner, personal observation). Mozambique has an obligation to ensure the protection of the environments wherein these species occur.

The granite inselbergs in northern Mozambique are considered to be centres of biodiversity (Izidine and Bandeira,

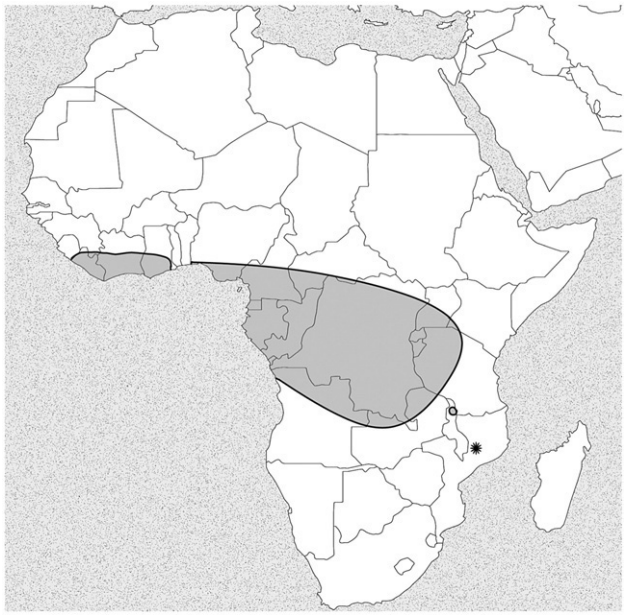

Fig. 4. Distribution of *F. cyathistipula cyathistipula*. Grey shaded area represents known distribution. *New record from Mt. Namuli.

2002) but are extremely threatened by habitat transformation. The forest habitat on the Namuli inselberg historically suffers from encroachment by tea and eucalyptus plantations, and by subsistence agricultural practices with the forest being cleared for banana and cassava cultivation. Despite these anthropogenic impacts, the Namuli inselberg harbours three globally threatened bird species including the endemic Namuli Apalis (*Apalis* (*Thoracica*) *lynesi*) and is considered to be a critically Important Bird Area in Mozambique urgently requiring formal conservation protection (BirdLife International, 2005). Furthermore, the indigenous forest on Namuli was ranked 37th of 76 important key forests in a review of threatened birds in the Afrotropical and Malagasy regions (Collar and Stuart, 1988; Ryan et al., 1999). While the majority of existing knowledge is confined to birds, a brief visit to the inselberg produced range extensions for the two *Ficus* species shown here, and the discovery of a new pygmy chameleon (*Rhampholeon*) species (Branch, Van Noort, Bayliss and Tolley, in preparation). In the latter case, this species is possibly an endemic, confined to the small patches of remaining indigenous forest, making it susceptible to habitat destruction or degradation. These records clearly underline the conservation importance of Mt. Namuli and indicate that other inselbergs in northern Mozambique will also be of great biological interest.

## 5. Conclusion

The Namuli inselberg urgently needs a complete species inventory and recognition as a biodiversity hotspot. Thus far, little attention from the scientific community has been given to the mountain, yet even brief exploratory visits produce new discoveries. The lack of basic biological knowledge of inselbergs in northern Mozambique, but the potential for their uniqueness, highlights the critical conservation status that should be afforded these mountains especially in light of the degree of habitat transformation.

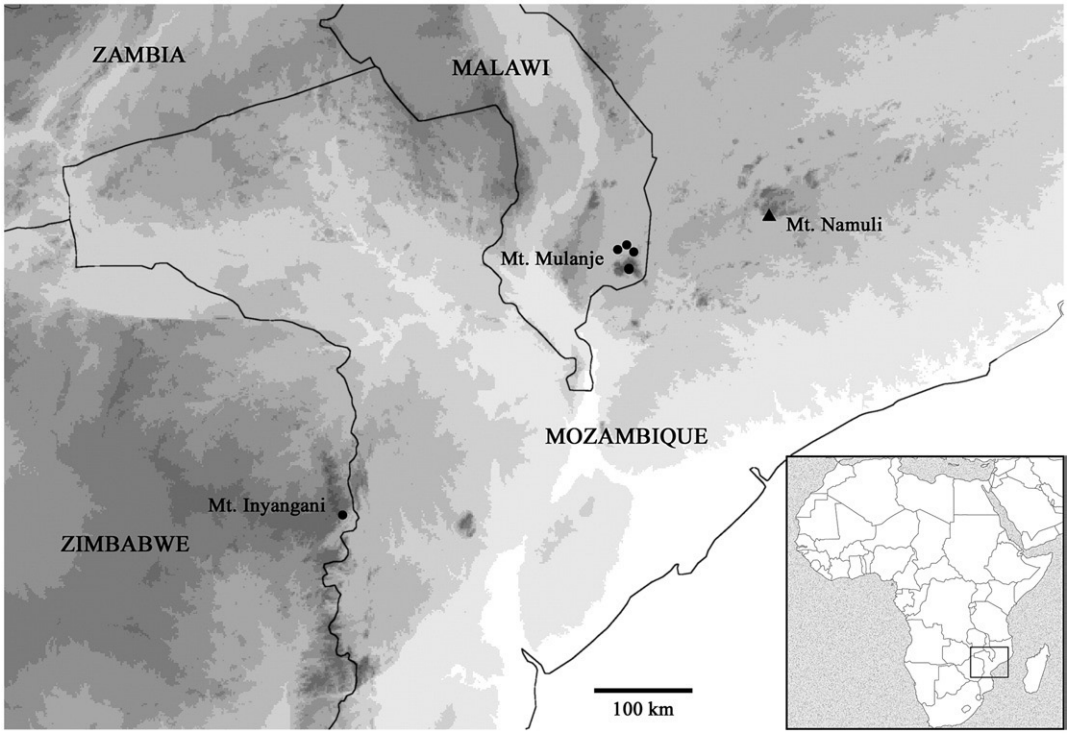


Fig. 5. Distribution of *F. modesta*. ● previous records; ▲ new record from Mt. Namuli. Map generated from Jarvis et al. (2006).

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