

ADDITIONS TO THE MOSS FLORA OF THE TAITA HILLS AND MOUNT KASIGAU, KENYA

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Abstract. Based on our recent collections we report 43 moss species as new to the Taita Hills and Mount Kasigau in SE Kenya, 15 of the species being also new to the country. The number of moss species known from the region rises from the previously reported 85 to 128, and from 506 to 521 for the whole country. The most noteworthy findings are *Fissidens splendens* Brugg.-Nann., previously known only from Tanzania, and *Barbella capillicaulis* (Renauld & Cardot) Cardot var. *capillicaulis* (Renauld & Cardot) Cardot, previously reported from Mauritius, Madagascar and Uganda. The taxa reported represent the families Anomodontaceae (1 sp.), Brachytheciaceae (3 spp.), Calymperaceae (3 spp.), Dicranaceae (8 spp.), Erpodiaceae (1 sp.), Fissidentaceae (3 spp.), Hedwigiaceae (1 sp.), Hookeriaceae (1 sp.), Hypnaceae (3 spp.), Leucodontaceae (1 sp.), Meteoriaceae (3 spp.), Neckeraceae (5 spp.), Orthotrichaceae (1 sp.), Pilotrichaceae (1 sp.), Polytrichaceae (1 sp.), Pterigynandraceae (1 sp.), Pterobryaceae (2 spp.), Pylaisiadelphaceae (1 sp.), Sematophyllaceae (1 sp.), Stereophyllaceae (1 sp.), and Thuidiaceae (1 sp.).

Key words: bryofloristics, mosses, Africa

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INTRODUCTION

The Taita Hills and Mt. Kasigau in south-eastern Kenya form the northernmost section of the Eastern Arc Mountains (Fig. 1A). Together with the coastal forests of Tanzania and Kenya the moist montane forests of the Eastern Arc Mountains form a hotspot of global biodiversity (EACF, Myers *et al.* 2000) with a high number of endemic animals and vascular plants (e.g., Beentje 1988; Bytebier 2001; Burgess *et al.* 2007), but also some endemic and subendemic bryophyte species (e.g., Pócs 1998; Bytebier & Chuah-Petiot 2002).

The Taita Hills rise abruptly from the surrounding plains at ca 600–1000 m to a series of ridges, reaching 2208 m at the highest peak Vuria (Fig. 1A & 3A). Semiarid plains isolate the Taita Hills from other mountain blocks, including Mount

Kasigau some 50 km to the southeast (Fig. 1B). Mt. Kasigau rises very steeply from the surrounding plains: from ca 600 to 1641 m in less than two kilometres.

The upper slopes of mountains in the Taita region benefit from moisture brought by the trade winds from the Indian Ocean and capture enough moisture to sustain moist evergreen montane forests (Aerts *et al.* 2011). The windward slopes of the summits receive the most rain, and even during the dry months the mountain summits are often surrounded in cloud and fog (Fig. 2A). The western rainshadow side of the Taita Hills is very distinctive with *Euphorbia* species even at 1700 m a.s.l., while the smaller Mount Kasigau does not have a significant rainshadow effect. The moist and relatively cool climate provides favourable conditions for the development of species-rich bryophyte communities, and, in places, considerable epiphyte biomass (Fig. 2B & 4). At lower elevations (<1000 m) there

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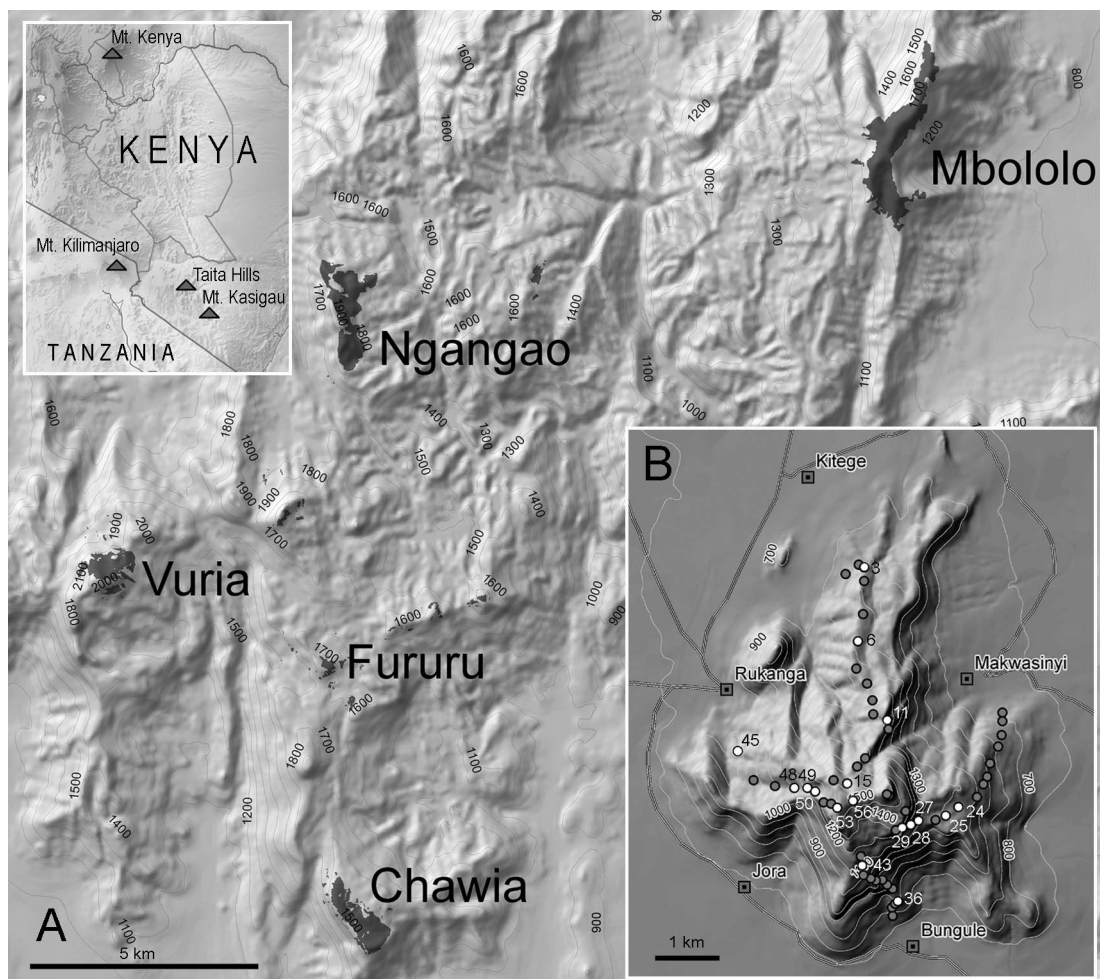


Fig. 1. The collecting localities. A – indigenous forest fragments in the Taita Hills (shaded), B – sample plots on Mount Kasigau; the plots mentioned in the text are in white.

is a gradual transition from mixed evergreen forests (Fig. 2C) and deciduous woodlands (Fig. 2D) on the foothills to *Acacia-Commiphora* bushland on the surrounding plains.

While the potential natural vegetation on the upper slopes of the Taita Hills consists of closed montane forest, long-lasting and intensive human influence has split the indigenous forest into remnant patches (Fig. 1A). The largest remaining patches of indigenous moist montane forests in the Taita Hills are Mbololo (220 ha), Ngangao (120 ha), Chawia (86 ha), Yale (16 ha), Fururu (8 ha), Macha (3 ha), Mwachora (2 ha), and Vuria

(1 ha). In addition to these patches, there are numerous smaller fragments of indigenous forest vegetation, many of them in traditionally protected sites (Himberg 2011). The upper slopes of Mt. Kasigau support 203 ha of moist evergreen forest (Kallio 2011). In contrast to most forests in the Taita Hills, this gazetted forest has remained in relatively pristine condition.

Many forest patches in the Taita Hills are heavily disturbed and surrounded or partly mixed with exotic plantation trees like *Eucalyptus saligna* Sm., *Pinus patula* Schtdl. & Cham., *Cupressus lusitanica* Mill., and *Acacia mearnsii* De Wild.

The forests are embedded in an intensively used agricultural landscape, with mangoes, cassava, banana, maize and beans among the main crops (Pellikka *et al.* 2009).

Here we report 43 moss species as new to the Taita Hills and Mount Kasigau, 15 of them being new to Kenya. All the specimens were collected during two recent field excursions (2010 and 2011) focusing on the diversity and ecology of bryophytes and lichens in the region. Voucher specimens of the species are kept at the East African Herbarium (EA) in Nairobi, with duplicates at the Botanical Museum (H) of the University of Helsinki. The names of vascular plants were checked from the Tropicos database (<http://www.tropicos.org/Home.aspx>).

COLLECTING LOCALITIES IN THE TAITA HILLS

WUNDANYI

Trees in the Forest Station yard. 20 Jan. 2011. *Nyqvist 111748*.

CHAWIA

Plot E18. Mature moist plantation forest of *Eucalyptus saligna* and *Cupressus lusitanica* with understorey of *Tabernaemontana stapfiana*, *Strombosia scheffleri*, *Syzygium guineense*, *Macaranga conglomerata*, and *Piper capense*. UTM 426794, 9616008. 1572 m. 22 Jan. 2011. *Nyqvist 111752, 111753, 111756, 111758, 111759*. *Rikkinen 010072, 010073, 010075*.

Plot I22. Mature moist forest with *Macaranga conglomerata*, *Polyscias fulva*, *Celtis gomphophylla*, *Pleiocarpa pycnantha*, *Strombosia scheffleri*, and *Dracaena steudneri*. UTM 427172, 9614776. 1596 m. 22 Jan. 2011. *Nyqvist 111762, 111763*.

Plot I24. Moderately open mature moist forest with *Albizia gummifera*, *Syzygium guineense*, *Tabernaemontana stapfiana*, *Pleiocarpa pycnantha*, and *Strombosia scheffleri*. UTM 427430, 9614991. 1529 m. 22 Jan. 2011. *Nyqvist 111767*.

Plot I27. Mature moist forest with *Macaranga conglomerata*, *Albizia gummifera*, *Tabernaemontana stapfiana*, *Syzygium guineense*, *Pleiocarpa pycnantha*, and *Dracaena steudneri*. UTM 426790, 9615267. 1580 m. 22 Jan. 2011. *Nyqvist 111343*.

Plot I29. Mature moist forest with *Tabernaemontana stapfiana*, *Albizia gummifera*, and *Dracaena steudneri*.

UTM 426555, 9615695. 1586 m. 22 Jan. 2011. *Nyqvist 111339*.

Plot I30. Mature mixed forest of *Eucalyptus saligna* and *Cupressus lusitanica* with understorey of *Tabernaemontana stapfiana*, *Strombosia scheffleri*, *Syzygium guineense*, *Macaranga conglomerata*, and *Piper capense*. UTM 426713, 9615983. 1610 m. 22 Jan. 2011. *Nyqvist 111335*.

Plot I31. Mature moist forest with *Newtonia buchananii*, *Albizia gummifera*, *Tabernaemontana stapfiana*, *Polyscias fulva*, *Lepidotrichilia volkensii*, *Pleiocarpa pycnantha*, *Strombosia scheffleri*, and *Dracaena steudneri*. UTM 427100, 9615309. 1618 m. 22 Jan. 2011. *Nyqvist 111355*.

Plot I34. Mature moist forest with *Tabernaemontana stapfiana*, *Albizia gummifera*, *Strombosia scheffleri*, and *Macaranga conglomerata*. On base of old *Macaranga*. UTM 427197, 9615172. 1573 m. 22 Jan. 2011. *Nyqvist 111353*.

Near link tower at southern rim of Bura Bluff. Edge of *Eucalyptus* stand with sparse understorey of indigenous trees and shrubs. On trunk of *Maesa lanceolata*. UTM 425507, 9625323. 1591 m. 22 Jan. 2011. *Nyqvist 111766*. *Rikkinen 010090*.

FURURU

Towards maize fields from the 'skull cave'. 20 Jan. 2011. *Nyqvist 111788*.

Plot E58. Mature semi-open *Eucalyptus* plantation. UTM 425584, 9621540. 1673–1685 m. 24 Jan. 2011. *Nyqvist 111303, 111305*.

Plot 8. Semi-open moist forest with *Tabernaemontana stapfiana*, *Phoenix reclinata*, and *Dracaena steudneri*. UTM 426354, 9620835. 1733 m. 20 Jan. 2011. *Nyqvist 111798*.

Plot E59. *Eucalyptus* plantation with understorey of *Plectranthus sylvestris* and some *Phoenix reclinata*. On branch of *Eucalyptus*. UTM 425837, 9621394. 1724 m. 24 Jan. 2011. *Nyqvist 111322*.

Plot E67. *Eucalyptus* plantation with understorey of indigenous species like *Maesa lanceolata* and *Phoenix reclinata*. UTM 426551, 9621266. 1630 m. 24 Jan. 2011. *Nyqvist 111317, 111326, 111327*.

Plot I38. Small patch of open moist forest with *Prunus africana*, *Phoenix reclinata*, *Albizia gummifera*, *Lepidotrichilia volkensii*, *Maesa lanceolata*, *Dodonaea viscosa*, *Lantana camara*, and *Plectranthus* sp. UTM 425626, 9621224. 1637 m. 24 Jan. 2011. *Nyqvist 111314*.

Plot I39. Small patch of moist indigenous forest with *Albizia gummifera*, *Tabernaemontana stapfiana*,

Phoenix reclinata, *Rauvolfia mannii*, *Psychotria lauracea*, and *Piper capense*, mixed with *Eucalyptus saligna*. UTM 426432, 9620374. 1606 m. 24 Jan. 2011. *Nyqvist 111333*.

MBOLOLO

Yard of 'teacher's house'. UTM 438744, 9631342. 29 Jan. 2011. *Nyqvist 010454, 111358*.

Plot E29. *Cupressus lusitanica* plantation. On the ground (fallen). UTM 439596, 9634288. 1631 m. 27 Jan. 2011. *Nyqvist 111396*.

Plot E30. *Grevillea robusta* plantation with *Schefflera myrinatha*. On fallen log. UTM 439646, 9634299. 1658 m. 27 Jan. 2011. *Nyqvist 111400*.

Plot E38. *Pinus* plantation with understorey of indigenous species like *Tabernaemontana stapfiana*, *Phoenix reclinata*, *Nuxia congesta*, and *Ocotea usambarensis*. UTM 439559, 9633377. 1742 m. 29 Jan. 2011. *Nyqvist 010436, 010437*.

Plot E40. *Eucalyptus* plantation with some *Acacia mearnsii*, *Maesopsis eminii*, and *Macaranga* sp. On trunk base. UTM 438541, 9631273. 1531 m. 26 Jan. 2011. *Nyqvist 111362, 111363*.

Plot I44. Mature moist forest with *Strombosia scheffleri*, *Newtonia buchananii*, *Chrysophyllum gorungosanum*, *Garcinia volkensii*, *Lasianthus kilimandscharicus*, and *Cyathea manniana*. On sandy ground. UTM 438798, 9632182. 1661 m. 26 Jan. 2011. *Nyqvist 111386*.

Plot I45. Mature moist forest with *Chrysophyllum gorungosanum*, *Syzygium sclerophyllum*, *Newtonia buchananii*, *Garcinia volkensii*, *Lasianthus kilimandscharicus*, and *Craibia zimmermannii*. On rotten log. UTM 438509, 9632065. 1645 m. 26 Jan. 2011. *Nyqvist 111379*.

Plot I46. Mature moist forest with *Ficus sur*, *Tabernaemontana stapfiana*, *Chrysophyllum gorungosanum*, *Strombosia scheffleri*, *Drypetes gerrardii*, and *Garcinia volkensii*. On trunk base. UTM 438705, 9631917. 1620 m. 26 Jan. 2011. *Nyqvist 111377*.

Plot I48. Mature moist forest with *Strombosia scheffleri*, *Craibia zimmermannii*, *Newtonia buchananii*, *Garcinia volkensii*, *Chassalia discolor*, and *Strychnos mitis*. UTM 438752, 9632357. 1664 m. 26 Jan. 2011. *Nyqvist 111388*.

Plot I50. Mature moist forest with *Newtonia buchananii*, *Macaranga conglomerata*, *Strombosia scheffleri*, *Craibia zimmermannii*, *Psychotria lauracea*, and *Lasianthus kilimandscharicus*. UTM 439286, 9633170. 1780 m. 29 Jan. 2011. *Nyqvist 010443*.

Between Plots I50 and I67. Mature moist forest

with e.g., *Macaranga capensis*. UTM 439296, 9633160. 1752 m. 29 Jan. 2011. *Nyqvist 010444*.

Plot I67. Mature moist forest with *Strombosia scheffleri*, *Newtonia buchananii*, *Macaranga conglomerata*, *Garcinia volkensii*, and *Strombosia scheffleri*. UTM 439021, 9633026. 1674 m. 29 Jan. 2011. *Nyqvist 010445*.

Plot I68. Mature moist forest with *Strombosia scheffleri*, *Newtonia buchananii*, *Macaranga conglomerata*, *Garcinia volkensii*, and *Strombosia scheffleri*. UTM 439082, 9632516. 1614 m. 28 Jan. 2011. *Nyqvist 010422*.

Plot I71. Mature moist forest with *Strombosia scheffleri*, *Craibia zimmermannii*, *Garcinia volkensii*, and *Rothmania urcelliformis*. UTM 438848, 9632699. 1660 m. 29 Jan. 2011. *Nyqvist 010447*.

Plot I72. Mature moist forest on rocky slope with *Syzygium sclerophyllum*, *Newtonia buchananii*, *Strombosia scheffleri*, *Garcinia volkensii*, and *Chassalia discolor*. UTM 439862, 9633999. 1707 m. 28 Jan. 2011. *Nyqvist 010411*.

Plot I74. Mature moist forest with *Cola greenwayi*, *Strombosia scheffleri*, *Chrysophyllum gorungosanum*, *Craibia zimmermannii*, and *Draceana steudneri*. UTM 439579, 9633900. 1714 m. 27 Jan. 2011. *Nyqvist 111392*.

Plot I76. Semi-open moist forest with *Tabernaemontana stapfiana*, *Albizia gummifera*, *Draceana steudneri*, and *Psychotria petiti*. On fallen log. UTM 438719, 9631759. 1546 m. 28 Jan. 2011. *Nyqvist 010420*.

Plot I78. Mature moist forest on rocky slope with *Aningeria adolfi-friedericii*, *Newtonia buchananii*, *Craibia zimmermannii*, *Garcinia volkensii*, and *Draceana steudneri*. UTM 439269, 9632667. 1602 m. 28 Jan. 2011. *Nyqvist 010424*.

Plot I79. Open moist forest with *Tabernaemontana stapfiana*, *Albizia gummifera*, *Draceana steudneri*, and *Psychotria petiti*; ground almost covered by *Culcasia falcifolia*. UTM 438719, 9631759. 1562 m. 26 Jan. 2011. *Nyqvist 111376*.

Plot I82. Moist indigenous forest at edge of plantation with *Phoenix reclinata*, *Macaranga capensis*, *Psychotria lauracea*, *Pauridiantha paucinervis*, and *Piper capense*. UTM 438843, 9631422. 1507 m. 26 Jan. 2011. *Nyqvist 111371*.

Plot I83. Mature moist forest with *Syzygium sclerophyllum*, *Garcinia volkensii*, and *Craibia zimmermannii*. UTM 439506, 9633149. 1675 m. 28 Jan. 2011. *Nyqvist 010431*.

Near plot I83. Mature moist forest with e.g., *Teclea trichocarpa*. 1731 m. 28 Jan. 2011. *Nyqvist 010433*.

Plot I84. Mature moist forest with *Cola greenwayi*,

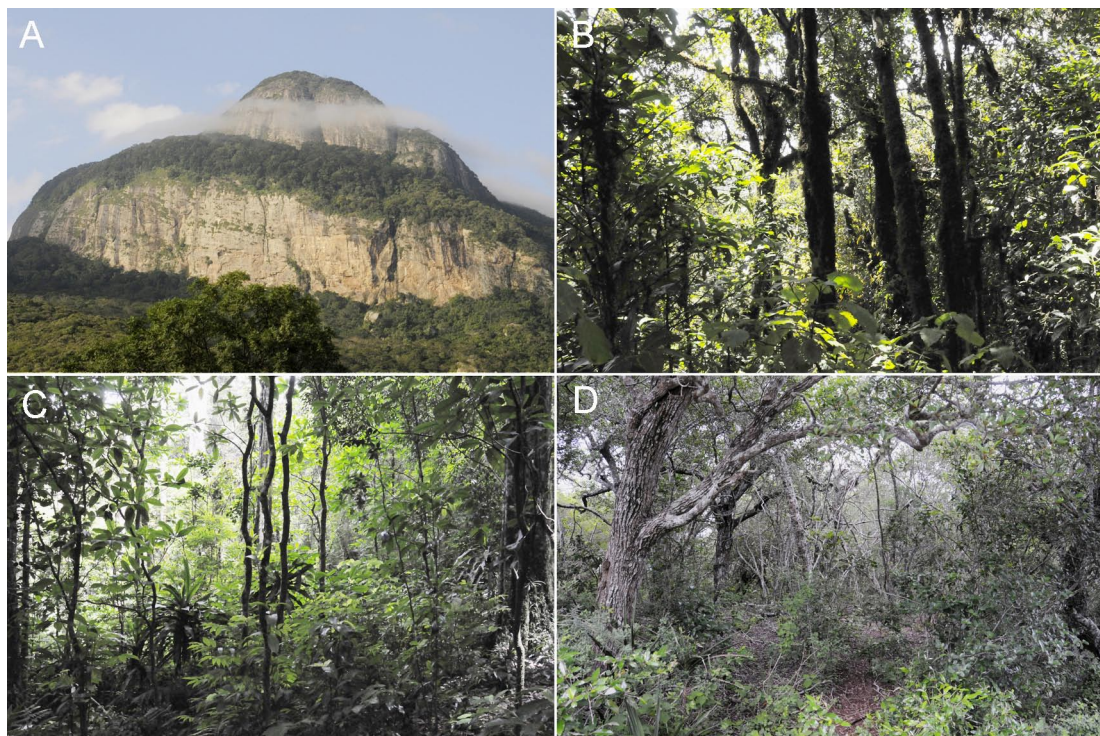


Fig. 2. Mount Kasigau. A – mist around the summit of Mount Kasigau, B – moss-rich mist forest on plot 56 near the mountain summit, C – moist forest on plot 53 on the western slope, D – dry woodland on plot 6 on the northern slope.

Albizia gummifera, *Strombosia scheffleri*, *Garcinia volkensii*, *Craibia zimmermanii*, *Dicranolepis usambarica*, and *Piper capense*. UTM 439624, 9634150. 1688 m. 28 Jan. 2011. *Nyqvist 111395*.

Plot I85. Mature moist forest with *Aningeria adolfriederici*, *Cola greenwayi*, *Craibia zimmermanii*, *Garcinia volkensii*, and *Draceana steudneri*. On the ground (fallen). UTM 439435, 9633367. 1608 m. 28 Jan. 2011. *Nyqvist 010423*.

NDIWENYI

Plot I40. Semi-open moist forest with *Albizia gummifera*, *Syzygium guineense*, *Rauwolfia mannii*, *Lasianthus kilimandscharicus*, and *Ritchiea albersii*. UTM 426890, 9620020. 1598 m. 24 Jan. 2011. *Nyqvist 111328*.

NGANGAO

Plot E15. *Cupressus lusitanica* plantation. UTM 426810, 9629594. 1775 m. 1 Feb. 2011. *Nyqvist 010486*.

Plot I1. Moist indigenous forest. UTM 426784, 9629590. 1783 m. 1 Feb. 2011. *Nyqvist 010467*.

Plot I15. Mature moist forest with *Macaranga conglomerata*, *Rapanea melanophloeos*, and *Albizia gummifera*. UTM 426601, 9629000. 1893 m. 1 Feb. 2011. *Nyqvist 010482*.

Plot I57. Mature moist forest with *Newtonia buchananii*, *Rapanea melanophloeos*, *Albizia gummifera*, *Garcinia volkensii*, *Lasianthus kilimandscharicus*, and *Chassalia discolor*. UTM 426789, 9628000. 1894 m. 1 Feb. 2011. *Nyqvist 010475*.

Plot 32. Mature moist forest with *Macaranga conglomerata*, *Polyscias fulva*, *Chrysophyllum gorungosanum*, *Lasianthus kilimandscharicus*, *Tabernaemontana stapfiana*, *Dasylepis integra*, and *Psychotria pseudoplatyphylla*. UTM 426746, 9627685. 1820 m. 18 Jan. 2011. *Nyqvist 111714*.

Along forest trail. Mature moist forest with *Macaranga conglomerata*, *Tabernaemontana stapfiana*, and *Psychotria petiti*. UTM 426732, 9627889. 1824 m. 18 Jan. 2011. *Nyqvist 111716, 111718, 111719, 111722, 111723, 111742, 111743, 112202*.

Near forest guard's hut. Moist forest with *Macaranga conglomerata*, *Polyscias fulva*, *Chrysophyllum*

gorungosanum, *Tabernaemontana stapfiana*, and *Psychotria* sp. On trunk base. UTM 426600, 9627581. 1824 m. 18 Jan. 2011. *Nyqvist 111739*.

RONGE

Plot E34. Dry pine forest on steep slope. UTM 437766, 9630440. 1357 m. 1 Feb. 2011. *Nyqvist 010457*.

Plot I63. Small patch of mixed forest with *Maesopsis eminii*, *Agelaea heterophylla*, and *Pauridiantha paucinervis*, surrounded by burnt *Pinus* plantation. UTM 436722, 9629246. 1327 m. 1 Feb. 2011. *Nyqvist 010460*.

VURIA

Plot I90. Disturbed semi-open forest and grazed grassland on mountain ridge. UTM 421852, 9623285. 1968 m. 19 Jan. 2011. *Nyqvist 111807, 111809, 111810*.

Plot I91. Disturbed forest in moist gully with *Xymalos monospora* and a dense lower canopy of *Cyathea manniana*. UTM 421560, 9623093. 2056 m, 19 Jan. 2011. *Nyqvist 111813–111816*.

Plot I92. Dense moist forest with *Maesa lanceolata*, *Nuxia congesta* and *Dracaena afromontana*. UTM 421443, 9623094. 2072 m. 19 Jan. 2011. *Nyqvist 111818*.

Plot I93. Dense moist *Maesa lanceolata* forest with small *Psychotria* sp. and one large *Eucalyptus* tree. UTM 421201, 9622857. 2187 m. 19 Jan. 2011. *Nyqvist 111789, 111790, 111791*.

Forest trail to mountain summit (north of road). Semi-open moist forest with *Macaranga conglomerata*, *Maesa lanceolata*, *Nuxia congesta*, *Psychotria* sp., and *Lobelia gibberoa* intermixed with *Acacia mearnsii* and *Eucalyptus*. Sandy soil at tree base. UTM 421664, 9623137. 1957 m. 19 Jan. 2011. *Nyqvist 111819, 111820*.

Near mountain summit (north of road). Closed moist secondary forest with *Maesa lanceolata*, *Nuxia congesta*, *Psychotria* sp., *Prunus africana*, *Rapanea melanophloeos*, *Xymalos monospora*, and *Dracaena afromontana* (Fig. 3B). On branches of evergreen trees. UTM 421273, 9623012. 2150 m. 19 Jan. 2011. *Nyqvist 111822, 111825*.

WERUGHA

North end of Werugha ridge. Small roadside patch of mesic indigenous secondary forest. On branch of evergreen tree. UTM 477245, 9614518. 1710 m. 19 Jan. 2011. *Nyqvist 111802*.

COLLECTING LOCALITIES ON MOUNT KASIGAU

NORTHERN SLOPE, MWAKULOMBA – KASIGAU

Plot 3. Rocky dry scrubland with *Acacia senegal*, *Euphorbia* sp., *Manilkara sulcata*, and *Croton dichogamus*. UTM 462069, 9580622. 850 m. 14 Jan. 2010. *Rikkinen 10K035*.

Plot 6 (Fig. 2B). Dry semi-open woodland with *Commiphora baluensis*, *Manilkara sulcata*, *Commiphora africana*, and *Acacia mellifera*. UTM 461975, 9579515. 1000 m. 14 Jan. 2010. *Rikkinen 10K063*.

Plot 11. Very dense low forest with *Rhus natalensis*, *Croton* sp., and *Psychotria* sp. UTM 462417, 9578342. 1250 m. 14 Jan. 2010. *Rikkinen 10K118*.

Plot 15. Mature moist forest with *Tabernaemontana stapfiana*, *Strombosia scheffleri*, *Sorindeia madagascariensis*, *Newtonia buchananii*, and *Pauridiantha paucinervis*. UTM 461815, 9577390. 1440 m. 14 Jan. 2010. *Rikkinen 10K155*.

EASTERN SLOPE, MAKWASINYI – KASIGAU

Plot 24. Dense low forest with *Manilkara sulcata*, *Grewia* sp., *Cussonia spicata*, and *Euphorbia candelabrum*. UTM 463477, 9577039. 1050 m. 15 Jan. 2010. *Rikkinen 10K249*.

Plot 25. Very dense low forest with *Polyscias stuhlmannii*, *Albizia gummifera*, and *Psychotria* sp. UTM 463287, 9576907. 1100 m. 15 Jan. 2010. *Rikkinen 10K254A*.

Plot 27. Dense vine-rich forest with *Newtonia buchananii*, *Pleiocarpa pycnantha*, *Cola greenwayi*, and *Teclea trichocarpa*. UTM 462878, 9576834. 1200 m. 15 Jan. 2010. *Rikkinen 10K273*.

Plot 28. Mature moist forest with *Newtonia buchananii*, *Cola greenwayi*, *Pleiocarpa pycnantha*, *Strombosia schlefferi*, *Pauridiantha paucinervis*, and *Coffea fadenii*. UTM 462769, 9576772. 1250 m. 15 Jan. 2010. *Rikkinen 10K286*.

Plot 29. Mature moist forest with *Newtonia buchananii*, *Cola greenwayi*, *Pleiocarpa pycnantha*, *Strombosia schlefferi*, and *Pauridiantha paucinervis*. UTM 462644, 9576728. 1300 m. 15 Jan. 2010. *Rikkinen 10K295*.

SOUTHERN SLOPE, BUNGULE – KASIGAU

Plot 36. Very dense low forest with *Manilkara sulcata*, *Euphorbia quinquecostata*, *Acacia brevispica*, and *Strychnos* sp. UTM 462578, 9575622. 800 m. 16 Jan. 2010. *Rikkinen 10K365*.

Plot 43. Dense vine-rich forest with *Newtonia bucha-*



Fig. 3. Taita Hills. A – the mountains as seen from the southwest during the dry season in September 2012, B – moss-rich montane forest near the summit of Vuria, the highest peak of the Taita Hills.

nanii, *Sorindeia madagascarensis*, *Teclea trichocarpa*, *Xymalos monospora*, and *Ficus* sp. UTM 462044, 9576252. 1150 m. 16 Jan. 2010. *Rikkinen 10K433*.

WESTERN SLOPE, RUKANGA – KASIGAU

Plot 45. Rocky dry forest with *Polyscias stuhlmannii*, *Commiphora baluensis*, *Euphorbia quinquecostata*, *Manilkara sulcata*, and *Ficus* sp. UTM 460180, 9577873. 750 m. 17 Jan. 2010. *Rikkinen 10K455*.

Plot 48. Semi-open moist forest with *Albizia gumifera*, *Teclea trichocarpa*, *Tabernamontana stapfiana*, *Nuxia congesta*, and *Newtonia buchananii*. UTM 461026, 9577322. 1050 m. 17 Jan. 2010. *Rikkinen 10K485*.

Plot 49. Dense vine-rich forest with *Manilkara sulcata*, *Syzygium guineense*, *Garcinia volkensii*, and *Ochna holstii*. UTM 461227, 9577322. 1200 m. 17 Jan. 2010. *Rikkinen 10K498*.

Plot 50. Dense vine-rich forest with *Strombosia scheffleri*, *Newtonia buchananii*, *Cussonia spicata*, *Cola greenwayi*, and *Sorindeia madagascarensis*. UTM 461339, 9577266. 1250 m. 17 Jan. 2010. *Rikkinen 10K504*.

Plot 53 (Fig. 2C). Mature moist forest with *Newtonia buchananii*, *Strombosia schefflerii*, *Coffea fadenii*, *Syzygium guineense*, and *Tabernamontana stapfiana*. UTM 461669, 9577024. 1500 m. 17 Jan. 2010. *Rikkinen 10K533*.

Plot 56 (Fig. 2D). Moss-rich moist forest with *Syzygium guineense*, *Newtonia buchananii*, *Ochna holstii*, *Psychothria petiti*, and *Tabernamontana stapfiana*. UTM 461908, 9577127. 1500 m. 17 Jan. 2010. *Rikkinen 10K565, 10K566*.

FLORISTIC NOVELTIES

A preliminary checklist of the Taita Hills bryophytes was published by Bytebier and Chuah-Petiot (2002). They reported 85 mosses species and 39 liverwort species. The present contribution adds 43 species to the Taita Hills' moss flora, raising the number of moss species known from the Taita Hills to 128.

According to O'Shea (2006) 493 moss species were known from Kenya. The report by Pócs and Luke (2007) from the Chyulu Range close to the Taita Hills included 13 species new to Kenya, and we here add a further 15, which makes a total of 521. Some essential reports on the Kenyan moss flora are by Chuah-Petiot (1995, 1997, 2001); she has also published a very useful, illustrated book that treats the bryophyte species more or less common in Kenya (Chuah-Petiot 2003).

The distribution data by countries is from O'Shea (2006). The taxa that are new to Kenya are marked with an asterisk (*). Those lacking an asterisk are new to the Taita region (Taita Hills and Mount Kasigau). The same collecting number may appear more than once as in many cases several bryophyte species were collected into the same paper bag.

ANOMODONTACEAE

Anomodon pseudotristis (Müll. Hal.) Kindb.

This species is widely distributed in the warm to tropical regions (Granzow-de la Cerda 1997). Although not common in Africa, it is known from Kenya (Mt. Kenya, Nairobi), Tanzania, Swaziland, South Africa, Rodriguez, Réunion, and Mauritius. O'Shea (2000) discussed its status in Africa especially relative to *A. tristis*, a morphologically quite similar species. The specimen cited below was mixed with *Papillaria africana*.

SPECIMEN EXAMINED: KASIGAU (plot 24): *Rikkinen JR10K249* (tree trunk)

BRACHYTHECIACEAE

Aerolindigia capillacea (Hornsch.) M. Menzel

This epiphyte, the single species of its genus (cf. Menzel 1991), is distributed in the Neotropics and Africa (Menzel 1991). In mainland Africa it occurs in the East and Central African mountain regions, and is also known from Madagascar. First reported from Kenya (Chyulu Range) by Pócs and Luke (2007).

ILLUSTRATION: Menzel (1991: tab. 4).

SPECIMENS EXAMINED: VURIA: *Nyqvist 111809* (plot 190, *Macaranga* trunk), *111810* (plot 190, hardwood trunk), *111825* (no plot number, near summit, evergreen tree branches).

**Rhynchostegium comorae* (Müll. Hal.) A. Jaeger

Reported from Comoros, Madagascar, Réunion, Tanzania and Zaire.

SPECIMEN EXAMINED: WUNDANYI (no plot number): *Nyqvist 111748* (hardwood trunk). FURURU (plot 8): *111798* (stump). NGANGAO (plot E15): *Nyqvist 010486* (*Cupressus* trunk).

Schimperella bello-intricata (Müll. Hal. ex Broth.) W. R. Buck

This genus of just two species was revised by Buck (1985), and a nomenclatural correction concerning the present species was included in a later paper by him (Buck 1993). This species is known from many Central and East African countries, and from the island of Bioko. In Kenya it has been reported under a synonymous name from the Aberdare Range and Mt. Kenya (cf. Kis 1985; Chuah-Petiot 1997).

ILLUSTRATION: Buck (1985: figs 13–20, as *S. katalensis*).

SPECIMEN EXAMINED: CHAWIA (plot E18): *Nyqvist 111759* (*Cupressus* trunk).

CALYMPERACEAE

Octoblepharum albidum Hedw.

This is a pantropical lowland species distributed throughout tropical Africa. It was first

reported from Kenya by Egunyomi (1978), but he did not cite any specimens. It is with certainty known from the Shimba Hills near Mombasa and quite close to the Taita Hills (Chuah-Petiot 2001).

ILLUSTRATION: Chuah-Petiot (2003: fig. 39).

SPECIMEN EXAMINED: RONGE (plot I63): *Nyqvist 010460* (hardwood trunk).

Syrrhopodon asper Mitt.

A widely distributed Afrotropical species (Orbán 1993), apparently not rare in the Taita Hills either. According to Orbán (1993) it is encountered between 1000 and 2500 m.

ILLUSTRATION: Chuah-Petiot (2003: fig. 40, as *S. usambaricus*).

SPECIMENS EXAMINED: MBOLOLO: *Nyqvist 111379* (plot I45, rotten log), *111386* (plot I44, terricolous). NGANGAO (no plot number, along forest trail): *Nyqvist 111716* (hardwood trunk), *111718* (saxicolous), *111723* (saxicolous).

**Syrrhopodon gaudichaudii* Mont.

Widely distributed in the neotropics and Africa. Orbán (1993) considered it 'one of the commonest species in tropical Africa'. Nevertheless, it has not been reported from Kenya before. It thrives between 1300 and 2700 m, mainly as an epiphyte but also on rocks (Orbán 1993).

ILLUSTRATION: Sharp *et al.* (1994: fig. 147).

SPECIMENS EXAMINED: FURURU (plot E67): *Nyqvist 111327* (rotten stump). VURIA (plot I90): *Nyqvist 111807* (rotten stump and trunk)

DICRANACEAE

Campylopus specimens were identified using the key in Frahm and O'Shea (1996).

**Campylopus arctocarpus* (Hornsch.) Mitt. subsp. *madercassus* (Besch.) J.-P. Frahm

Previously known from Comoros, Madagascar, Mauritius, Malawi, Reunion, Rio Muni, South Africa, Seychelles, and Tanzania. According to

Frahm and O'Shea (1996) it is not common in continental Africa.

SPECIMENS EXAMINED: VURIA (no plot numbers): *Nyqvist 111819* (forest trail to mountain summit, rotten stump), *111822* (near mountain summit, evergreen tree branches).

Campylopus crateris Besch.

Previously known from Uganda, Kenya, Comoros, Madagascar and Reunion. According to O'Shea (2006) this species was first reported from Kenya by Frahm (1985).

SPECIMEN EXAMINED: MBOLOLO (no plot number): *Nyqvist 010454* (yard of 'teacher's house', hardwood trunk).

Campylopus hildebrandtii (Müll. Hal.) A. Jaeger

Widely distributed in tropical Africa, and also morphologically variable. It mainly grows on soil above ca 2000 m (Frahm & O'Shea 1996). According to Chuah-Petiot (2003) it also thrives on deadwood and rotting wood between 1700 and 2000 m.

ILLUSTRATION: Chuah-Petiot (2003: fig. 15).

SPECIMEN EXAMINED: VURIA (no plot number): *Nyqvist 111820* (forest trail to mountain summit, terricolous).

Campylopus johannis-meyeri (Müll. Hal.) Kindb.

This is a Central – East African species, reported from Cameroon, Zaire, Malawi, Tanzania and Kenya. According to Frahm and O'Shea (1996) it is an alpine and subalpine species, but in open places thrives also at lower elevations.

SPECIMEN EXAMINED: FURURU (plot E58): *Nyqvist 111305* (saxicolous).

**Campylopus nanophyllus* Müll. Hal. *ex* Broth.

This is a fairly widely distributed species of tropical Africa, closest to Kenya in Malawi and Rwanda, but 'infrequently collected' (Frahm & O'Shea 1996).

SPECIMEN EXAMINED: NGANGAO (no plot number): *Nyqvist 112202* (along forest trail, *Cupressus* trunk).

**Campylopus thwaitesii* (Mitt.) A. Jaeger

Distributed in East Africa and the islands in western Indian Ocean. On the continent it occurs scattered from Lesotho to Rwanda and eastern Zaire, but it has not been reported from Tanzania for example.

SPECIMEN EXAMINED: FURURU (plot E59): *Nyqvist 111322* (*Eucalyptus* branch).

**Leucoloma rutenbergii* (Geh.) C. H. Wright
var. *elatum* Renault

Previously known from Madagascar, Reunion and Tanzania.

SPECIMEN EXAMINED: MBOLOLO (near plot I83): *Nyqvist 010433* (fallen on the ground).

Leucoloma zuluense Broth. & Bryhn
var. *zuluense*

Reported from Kenya, South Africa, Tanzania and Zimbabwe. In Kenya previously known from Mt. Kenya (LaFarge 2002) and SE parts of the country (Chuah-Petiot 2003, but without exact locality).

ILLUSTRATION: LaFarge (2002: fig. 28; map. fig. 29).

SPECIMENS EXAMINED: CHAWIA (plot E18): *Rikkinen 010073* (*Eucalyptus* trunk), *010075* (*Eucalyptus* trunk). MBOLOLO (plot E38): *Nyqvist 010436* (*Psychotria petiti* trunk), *010437* (*Pinus* trunk). NGANGAO (no plot number): *Nyqvist 111719* (along forest trail, hardwood trunk base).

ERPODIACEAE

Erpodium beccarii Müll Hal. ex Venturi

This species is known from tropical America, Africa and Australia; it has a wide distribution in east Africa. It was characterized as 'xerophytic epiphyte' by Pócs and Luke (2007). According to Chuah-Petiot (2003) it grows between 550 and 2700 m and is 'common even on roadside and park trees in urban areas'.

ILLUSTRATION: Chuah-Petiot (2003: fig. 101).

SPECIMEN EXAMINED: KASIGAU (plot 6): *Rikkinen JR10K063* (tree trunk).

FISSIDENTACEAE

Fissidens borgenii Hampe

This species has a wide distribution in tropical Africa. It was first reported from Kenya (Cherangani Hills, Kerio, Shimba Hills) by Chuah-Petiot (2001). According to Chuah-Petiot (2003) it grows on decaying wood or soil near waterfalls or streams in lowland and montane forests between 75 and 2550 m.

ILLUSTRATION: Chuah-Petiot (2003: fig. 29).

SPECIMENS EXAMINED: KASIGAU: *Rikkinen 10K035* (plot 3, terricolous), *10K433* (plot 43, tree base).

Fissidens leucocinctus Hampe

Distributed from Cameroon and Gabon to East Africa and Madagascar. According to Bruggemann-Nannenga (1993) it is 'saxicolous in places that are regularly inundated at altitudes from 850 to 2000 m'. In Kenya it was previously reported from Massaoia, Sappa, Ighembe (Gura Valley), and Mt. Kenya (Kis 1985, as *F. crispopachyloma*).

SPECIMENS EXAMINED: MBOLOLO (plot E40): *Nyqvist 111362* (tree base). VURIA (plot I91): *Nyqvist 111816* (terricolous, ditch).

**Fissidens splendens* Brugg.-Nann.

This species was previously known only from Morogoro in NE Tanzania (Bruggeman-Nannenga 1978). The identity of the present specimen was verified from a duplicate by Ida Bruggeman-Nannenga.

SPECIMEN EXAMINED: MBOLOLO (plot I45): *Nyqvist 111379* (rotten log).

HEDWIGIACEAE

Braunia camptoclada P. de la Varde & Thér.

A Central African species, known from Kenya, Tanzania and Zaire. Reported from Mt. Kenya, the Aberdare Range and from the Cherangani Hills (Kis 1985 and the references therein; Chuah-Petiot 1995, 1997, 2001). According to Chuah-Petiot (2003) it is a very common epiphyte between 1350 and 3260 m.

ILLUSTRATION: Chuah-Petiot (2003: fig. 113).

SPECIMEN EXAMINED: FURURU (plot I39): *Nyqvist 111333* (tree trunk).

HOOKERIAACEAE

**Hookeriopsis ambigua* P. de la Varde

Previously known from Burundi, Gabon, Rwanda and Zaire.

ILLUSTRATION: De Sloover (1975: fig. 57–64).

SPECIMENS EXAMINED: CHAWIA (plot I34): *Nyqvist 111353* (fallen on the ground). KASIGAU (plot 29): *Rikkinen 10K295* (vertical cliff face).

HYPNACEAE

**Ectropothecium regulare* (Brid.) A. Jaeger

This is a widely distributed species in tropical Africa.

SPECIMEN EXAMINED: NGANGAO (plot E15): *Nyqvist 010486* (*Cupressus* trunk).

**Rhacopilopsis trinitensis* (Müll. Hal.) E. Britton *ex* Dixon.

Widely distributed in Central and eastern Africa etc. Apparently not rare in the Taita Hills either. The genus *Rhacopilopsis* was revised by Watling and O'Shea (2000), resulting in an extensive synonymy and two accepted species.

ILLUSTRATION: Watling & O'Shea (2000: fig. 2).

SPECIMENS EXAMINED: MBOLOLO: *Nyqvist 010444* (between plots I50 and I67, *Macaranga* trunk), *111362* (plot E40, *Eucalyptus* trunk and base). NGANGAO: *Nyqvist 010467* (plot I1, fallen on the ground), *010475* (plot I57, *Oxyanthus* trunk), *111718* (no plot number, along forest trail, saxicolous).

**Rhacopilopsis variegata* (Welw. & Duby) M. C. Watling & O'Shea

Also this species has a wide distribution in tropical Africa (Watling & O'Shea 2000).

ILLUSTRATION: Watling & O'Shea (2000: fig. 3).

SPECIMENS EXAMINED: MBOLOLO (plot I48):

Nyqvist 111388 (vine). NGANGAO (no plot number, near forest guard's hut): *Nyqvist 111739* (terricolous on trail).

LEUCODONTACEAE

Leucodon sciuroides (Hedw.) Schwägr. var. *sciuroides*

A widely distributed Northern Hemisphere species (cf. Akiyama 1988). In Africa it is only known from a few mountains in Tanzania and Kenya (Tinderet in SW Kenya and Mt. Maralal in central Kenya; cf. Kis 1985).

ILLUSTRATION: Ignatov & Ignatova (2004: fig. 451).

SPECIMEN EXAMINED: VURIA (plot I90): *Nyqvist 111809* (*Macaranga* trunk).

METEORIAACEAE

**Barbella capillicaulis* (Renauld & Cardot) Cardot var. *capillicaulis* (Renauld & Cardot) Cardot

Previously known from Mauritius, Madagascar and Uganda. The Ugandan record (Porley *et al.* 1999) comes from Rukungiri in the SW corner of the country.

SPECIMENS EXAMINED: CHAWIA (plot I29): *Nyqvist 111339* (fallen on the ground). NGANGAO (plot I15): *Nyqvist 010482* (*Macaranga* base).

**Trachypus bicolor* Reinw. & Hornsch. var. *viridulus* (Mitt.) Zanten.

Three varieties of *T. bicolor* are recognized in Africa, but none of them was recorded for Kenya before. *Trachypus bicolor* var. *viridulus* was known from Madagascar, Reunion, South Africa, São Tome and Tanzania. In the latter country it has been reported from Mt. Meru, Uluguru Mts., Usambara Mts. and Rungwe Mts (Kis 1985).

ILLUSTRATION: Magill & van Rooy (1998: Fig. 156: 9–16).

SPECIMEN EXAMINED: MBOLOLO (plot I85): *Nyqvist 010423* (fallen on the ground).

Floribundaria vaginans (Welw. & Duby) Broth.

Widespread in tropical Africa. The previous report from Kenya was from Nzoia near Lake Victoria (Townsend 1987, as *F. patentissima*).

SPECIMENS EXAMINED: CHAWIA (plot E18): *Rikkinen 010072* (*Cupressus* trunk). MBOLOLO: *Nyqvist 111377* (plot I46, *Tabernaemontana* trunk and base), *111396* (plot E29, *Cupressus* trunk), *111400* (plot E30, fallen log).

NECKERACEAE

Alleniella remota (Müll. Hal.) S. Olsson, Enroth & D. Quandt Fig. 4B

A fairly common central and East African species (De Sloover 1977, as *Neckera remota*). In Kenya it has been reported from various parts of the country (Kis 1985).

ILLUSTRATIONS: De Sloover (1977: figs 22–44, as *Neckera remota*); Chuah-Petiot (2003: fig. 141, as *Neckera remota*).

SPECIMENS EXAMINED: CHAWIA: *Nyqvist 111756* (plot E18, *Tabernaemontana* trunk), *Rikkinen 010090* (no plot number, near link tower at southern rim of Bura Bluff, *Maesa* trunk). FURURU (plot I38): *Nyqvist 111314* (hardwood trunk). MBOLOLO: *Nyqvist 111358* (no plot number, yard of ‘teacher’s house’, hardwood trunk), *111762* (plot I22, vine). NDIWENYI (plot I40): *Nyqvist 111328* (hardwood trunk). NGANGAO: *Nyqvist 010467* (plot I1, fallen on the ground), *111743* (no plot number, along forest trail, tree trunk). VURIA: *Nyqvist 111809* (plot I90, *Macaranga* trunk), *111813* (plot E91, terricolous, path side).

Homaliodendron piniforme (Brid.) Enroth

A widely distributed tropical amphi-Atlantic species, reported from Africa under several synonymous names (Enroth 1990).

ILLUSTRATION: Enroth (1990: fig. 1).

SPECIMENS EXAMINED: CHAWIA (plot I29): *Nyqvist 111339* (fallen on the ground). MBOLOLO: *Nyqvist 010420* (plot I76, fallen log), *010431* (plot I83, *Strombozia* trunk), *010443* (plot I50, tree trunk). KASIGAU: *Rikkinen JR10K155* (plot 15, tree trunk), *10K565* (plot 56, tree trunk).

Orthostichella capillicaulis (Müll. Hal. ex Kindb.) B. H. Allen & Magill Fig. 4A

Widely distributed in eastern tropical Africa (Allen & Magill 2007). Bytebier and Chuah-Petiot (2002) reported *O. pandurifolia* from several places in the Taita Hills, but probably at least some of the specimens represent *O. capillicaulis*. The two species do, however, occur together in Kenya (Allen & Magill 2007). All of the specimens here reported as *O. capillicaulis* had caducous leaves in the branch tips, a character that best distinguishes this species from *O. pandurifolia*.

ILLUSTRATION: Allen & Magill (2007: fig. 1).

SPECIMENS EXAMINED: FURURU: *Nyqvist 111788* (no plot number, towards maize fields from the ‘skull cave’, rotten wood), *111789* (plot I93, *Prunus africana* trunk), *111790* (plot I93, *Lobelia*), *111791* (plot I93, hardwood trunk), *111798* (plot 8, stump). MBOLOLO: *Nyqvist 010411* (plot I72, tree branches), *010422* (plot I68, *Strombozia* trunk). NGANGAO: *Nyqvist 111722*, *111723* (no plot number, along forest trail, saxicolous), *111742* (no plot number, along forest trail, hardwood trunk), *111743* (no plot number, along forest trail, hardwood trunk). VURIA: *Nyqvist 111815* (plot I91, fallen on the ground), *111818* (plot I92, hardwood trunk). KASIGAU: *Rikkinen 10K118* (plot 11, tree branches), *10K254A* (plot 25, twigs), *10K273* (plot 27, twigs), *10K504* (plot 50, fallen twig).

Porotrichodendron madagassum (Kiaer ex Besch.) S. Olsson, Enroth & D. Quandt

The single African species of an essentially Neotropical genus, but widely distributed in tropical Africa (De Sloover 1983, as *Porotrichum madagassum*). Known from several places in Kenya (Kis 1985).

ILLUSTRATION: De Sloover (1983: figs 193–216, as *Porotrichum madagassum*).

SPECIMENS EXAMINED: VURIA: *Nyqvist 111815* (plot I91, fallen on the ground), *111818* (plot I92, hardwood trunk).

Porotrichum elongatum (Welw. & Duby) A. Gepp

Widely distributed in Central and tropical Africa (De Sloover 1983). In Kenya reported from



Fig. 4. Epiphytic mosses in the Taita Hills. A – *Orthostichella capillicaulis* (Müll. Hal. ex Kindb.) B. H. Allen & Magill (Neckeraceae), B – *Alleniella remota* (Müll. Hal.) S. Olsson, Enroth & D. Quandt (Neckeraceae), C – *Squamidium brasiliense* (Hornsch.) Broth. (Meteoriaceae), D – *Neorutenbergia usagarae* (Dixon) Bizot & Pócs (Rutenbergiaceae), endemic in the Eastern Arc Mountains.

Mt. Kenya, Kiduha and Chaya (Kis 1985, Chuah-Petiot 1995).

ILLUSTRATION: De Sloover (1983: figs 1–22, 23–53).

SPECIMENS EXAMINED: CHAWIA (plot I30): *Nyqvist 111335* (fallen on the ground). MBOLOLO (plot 178): *Nyqvist 010424* (*Newtonia* trunk). NGANGAO (no plot number, along forest trail): *Nyqvist 111723* (saxicolous). VURIA (plot I91): *Nyqvist 111814* (tree fern trunk). KASIGAU: *Rikkinen 10K498* (plot 49, tree trunk), *10K533* (plot 53, tree trunk).

ORTHOTRICHACEAE

Schlotheimia percuspidata Müll. Hal.

Known from South Africa, Zimbabwe, Malawi, Tanzania, Uganda and Kenya. The previous Kenyan reports were from the Kakamega Forest Reserve in the North Kavirondo District, near Lake Victoria (Wilbraham 2008).

ILLUSTRATION: Wilbraham (2008: fig. 8).

SPECIMENS EXAMINED: MBOLOLO (plot I82): *Nyqvist 111371* (tree roots). FURURU (plot I39): *Nyqvist 111333* (hardwood trunk).

PILOTTRICHACEAE

Lepidopilum lastii Mitt.

Widely distributed in tropical Africa. Reported from W Kenya by Chuah-Petiot (2003), who described the species as 'usually epiphytic on trees and shrubs in submontane forest at 1650 m'.

ILLUSTRATION: De Sloover (1975: fig. 83–91).

SPECIMEN EXAMINED: VURIA (no plot number, near summit): *Nyqvist 111825* (evergreen tree branches).

POLYTRICHACEAE

Pogonatum belangeri (Müll. Hal.) A. Jaeger.

Widely distributed in tropical Africa. In Kenya reported from Mt. Kenya (De Sloover 1986).

ILLUSTRATION: De Sloover (1986: figs 358–394).

SPECIMEN EXAMINED: MBOLOLO (plot E40): *Nyqvist 111363* (terricolous).

PTERIGYNANDRACEAE

Trachyphyllum inflexum (Harv.) A. Gepp

A paleotropical species, which according to Pócs and Luke (2007) prefers relatively dry habitats. In Kenya previously known from the SW part of the country (Chuah-Petiot 2003).

ILLUSTRATION: Chuah-Petiot (2003: fig. 191).

SPECIMEN EXAMINED: KASIGAU (plot 45): *Rikkinen 10K455* (tree base).

PTEROBRYACEAE

**Hildebrandtiella phleoides* (Desv. ex Brid.) B. H. Allen & Magill

Hildebrandtiella pachyclada Besch. (cf. Allen & Magill 2007).

Previously known from Mauritius, Reunion,

Rodrigues and Tanzania. It is quite common in the Taita Hills.

ILLUSTRATION: Argent (1973: fig. 11, as *H. pachyclada*).

SPECIMENS EXAMINED: CHAWIA: *Nyqvist 111752* (plot E18, *Eucalyptus* trunk), *111753* (plot E18, rotten tree trunk), *111756* (plot E18, *Tabernaemontana* trunk), *111759* (plot E18, *Cupressus* trunk), *111767* (plot I24, fallen twigs); *Rikkinen 010073* (plot E18, *Eucalyptus* trunk). MBOLOLO: *Nyqvist 010443* (plot I50, hardwood trunk), *111376* (plot I79, *Albizia* base), *111377* (plot I46, *Tabernaemontana* trunk and base), *111392* (plot I74, *Cedrus* trunk), *111395* (plot I84, fallen on the ground). NGANGAO: *Nyqvist 010482* (plot I15, *Macaranga* base), *111742* (no plot number, along forest trail, hardwood trunk).

Calyptothecium planifrons (Renauld & Paris) Argent

Reported from Chad, Central African Republic, Kenya, Zaire, Zambia, Tanzania and Madagascar. In Kenya reported from the Nyambeni Hills near Meru (Chuah-Petiot 2001). According to Chuah-Petiot (2003) it grows on bark between 2000 and 2300 m.

ILLUSTRATIONS: Argent (1973: fig. 1); Chuah-Petiot (2003: fig. 129).

SPECIMENS EXAMINED: MBOLOLO: *Nyqvist 010431* (plot I83, *Strombozia* trunk), *010433* (near plot I83, hardwood trunk). NGANGAO (plot 32): *Nyqvist 111714* (hardwood trunk).

PYLAIASDELPHACEAE

**Isopterygium mbangae* (Müll. Hal.) A. Jaeg.

Previously reported from Gabon, Sudan, Tanzania, Uganda and Zaire. It is apparently not rare in the Taita Hills. The present material matches the description of *I. mbangae* provided by Buck (1993).

SPECIMENS EXAMINED: CHAWIA (plot I27): *Nyqvist 111343* (*Macaranga* trunk). FURURU (plot E67): *Nyqvist 111326* (*Eucalyptus* trunk), *111327* (rotten stump). MBOLOLO: *Nyqvist 010445* (plot I67, hardwood trunk), *010447* (plot I71, hardwood trunk). VURIA (plot I90): *Nyqvist 111807* (rotten stump and trunk). KASIGAU (plot 28): *Rikkinen 10K286* (hardwood trunk).

SEMATOPHYLLACEAE

Sematophyllum elgonense (Dixon) Broth.

Known from Ethiopia, Kenya, Rwanda, Tanzania, Uganda, Zaire, and Zambia. In Kenya previously reported from the Aberdare Range (Kis 1985).

SPECIMENS EXAMINED: FURURU: *Nyqvist 111303* (plot E58, *Cedrus* trunk), *111317* (plot E67, *Eucalyptus* trunk), *111333* (plot I39, hardwood trunk). RONGE (plot E34): *Nyqvist 010457* (*Pinus* trunk).

STEREOPHYLLACEAE

Entodontopsis nitens (Mitt.) W. R. Buck & Ireland

Widely distributed in the tropics, being known from Central and South America, Africa and India. In Kenya previously reported from the Kakamega Forest Reserve in the North Kavirondo District (Townsend 1987).

ILLUSTRATION: Sharp *et al.* (1994: fig. 720).

SPECIMENS EXAMINED: CHAWIA: *Nyqvist 111355* (plot I31, *Celtis africana* trunk), *111756* (plot E18, *Tabernaemontana* trunk), *111758* (plot E18, *Tabernaemontana* trunk), *111763* (plot I22, vine), *111766* (no plot number, near link tower at southern rim of Bura Bluff, fallen on the ground).

THUIDIACEAE

Pelekium varians (Welw. & Duby) Touw

A widespread tropical African species (see Touw 1976, as *Thuidium varians*, for a distribution map). First reported in Kenya from Shimba Hills near Mombasa (Chuah-Petiot 2001).

ILLUSTRATION: Touw (1976: fig. 19).

SPECIMEN EXAMINED: KASIGAU (plot 48): *Rikkinen 10K485* (saxicolous).

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