

A Guide To
TAITA HILLS
Unique Natural History

By Lawrence Wagura

An aerial photograph of the Taita Hills region. The foreground is dominated by a dense, lush green forest. A dirt road winds through the forest, leading towards a valley. In the valley, there is a small settlement with several buildings and a railway line. The background shows rolling hills and mountains, some with patches of forest and others that appear more open or rocky. The sky is a clear, pale blue.

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Front cover:

- View of the Taita Hills

Back cover:

- Male *Cymothoe teita* by L. Borghesio
- *Dorstenia christenhunszii* by K. Thijs
- Taita Apalis, *Apalis fuscigularis* by P.R. Steward
- Taita Warty frog, *Callulina dawida* by P. Malonza
- *Termitomycete clypeatus*, by L. Wagura

All photos were taken by the Author apart from where indicated otherwise.

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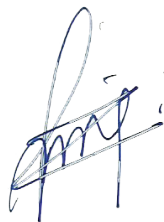
FOREWORD

Taita Hills and Taita Taveta County as a whole is an area that has a rich natural history. The County's rich natural history and natural resource base has a huge potential to propel local economic development if well tapped and utilized.

A guide to Taita Hills Unique Natural History provides a visual and compelling evidence of some of the resources available in Taita Hills and the need for the sensitization on their availability, potential value and more so their conservation.

We live in a rich and beautiful place that must have been even richer and more beautiful before our activities started destroying it. It behooves us to ensure that we leave a better place for the generation to come through appropriate and sustainable use.

The value of the information in this publication is priceless and can only be demonstrated through the action we will take to restore the integrity of this area of endemism. It is my sincere hope that the information will inspire action among the readers.



James Mwang'ombe Mwamodenyi
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Head of Biodiversity Conservation and Management
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PREFACE

The Taita Hills' uniqueness and beauty is unmatched. Cool hills tipped with huge rock outcrops that are surrounded by evergreen forests and settlement of the Taita people, offers the best landscape you can imagine. The forests are characterized by a variety of tall trees with clinging vines, strange spots of lichens, hanging mosses and a variety of orchids that are true beauty to behold. The frequent encounter with many species of all sorts found nowhere else in the entire planet is astounding. I must admit that this is one of my favorite places in the world.

Welcome to the Taita Hills. This book will give you an idea of hot spots to visit and help you identify most of the unique biodiversity that you will come across supplemented with their ecology. As you enjoy watching these beautiful creatures, always keep in mind that most of them are now listed as endangered, meaning that they are threatened with extinction. I strongly hope that as much interesting your visit to these forest can be, you will always keep the welfare of this delicate biodiversity in the first place. Please be respectful and leave it intact to guarantee its future!

Thank you.....L. Wagura

Introduction

Location of Taita Hills

The Taita Hills are located in south-east Kenya about 50km from Voi, a town along the Nairobi –Mombasa highway. The area forms part of the former Coast Province and is one of the three districts of Taita-Taveta County with Wundanyi as the major town.



A map of Kenya showing the location of the Taita Hills

Visitor Guidelines

Logistics: almost all roads here are rough and during rainy seasons there could be huge potholes filled with seepage. It can get slippery on steep areas, so it is advisable to have a well raised 4WD vehicle to be able to maneuver around. Sometimes weather is unpredictable and it can rain anytime. Temperatures can also go low especially in the month of July and August. Warm and rainproof clothes are therefore necessary.

Security: The Taita people are very friendly and reserved. It is therefore safe to drive and walk around but always remember to lock your vehicle when not around and always carry your valuables with you. There are no dangerous animals inside the forest and one can walk around without fear of any attack.

Fire: there is a risk of fire inside the forest and especially during dry seasons. Always take great care not to start fire as it can cause very serious damages.

Noise: Loud and unnecessary noise stresses and affects wildlife a lot in their natural habitat. It is advisable to minimize noise as much as possible. This will enable you to watch even the very shy animal at close range.

Litter: Take anything you bring with you in the forest back home. Some litter takes very long to decompose while others may never decompose at all, polluting water and soil, and harming wildlife.

Background History

The Taita Hills are very old mountains that geologically form the northern most part of a series of isolated ancient mountains that extend from Eastern Tanzania to south-east Kenya. These mountains were formed by a process of repeated uplifts and faults millions of years ago, causing the rising of central plateau, also known as Kenya/Tanzania highlands. The forests in these mountains have existed continuously for over 20 million years that is since Africa was part of Gondwanaland. The long life of the hills is attributed to the hard rock forming the earth surface that prevents much weathering. The forests on these mountains are isolated from other montane forests by vast semi-arid lowland plains. All this time, the forest remained intact as one entire forest until about 200 years when human encroachment began. Having been in isolation for millions of years, the plants and animals in these mountains have gradually evolved and produced a very unique and complex biodiversity. A lot of research work have been conducted revealing just how rich and unique the area is in terms of biodiversity. This chain of crystalline mountain blocks are now famously known as the 'Eastern Arc Mountains', a term that was introduced in 1985 to describe this area of extraordinary rich biodiversity that has a restricted range since about a third of its flora is composed of restricted-range species. Also a good percentage of vertebrates and invertebrates are endemic to these mountains. Eastern Arc Mountains harbor the greatest number of biological taxa and the highest degree of endemism in mainland Africa. It forms a portion of the afro-montane biodiversity hotspots.



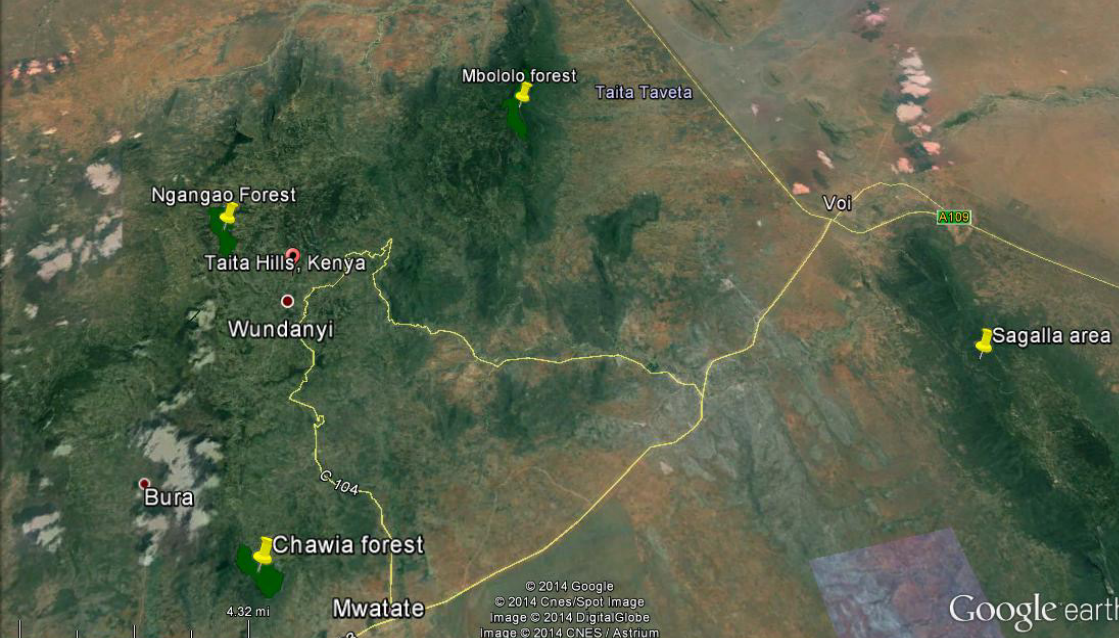
Map of the Eastern Arc mountains of Kenya and Tanzania (in green)

This entire area has been famous for its unique biodiversity richness since colonial times. The Germans first established a biological research station in Usambara, Tanzania with some agricultural and silvicultural activities and later giving way to the British regime. When Kenya and Tanzania gained independence, there was uncontrolled land use due to lack of skills and money leading to mass forest destruction. The favorable climatic conditions led to an increase in population and human settlement

and concurrently forest fragmentation. In Taita Hills today, only a few forest fragments remain on the hilltops and steep valleys but remarkably continue to support its rich biodiversity. In fact, despite having the smallest amount of closed canopy natural forest among the Eastern Arc mountains, Taita Hills have the highest number of endemics per unit area. It is surprising that in some areas of these forest fragments you can find about ten endemic species just within ten meters radius.



Portion of closed canopy of a Taita Hills forest fragment and other hills at the rear



Digital satellite image of the Taita Hills showing the location of three different blocks and the largest forest fragments.

Forest Fragments Overview

The Taita Hills comprise three main massifs: Sagalla, Mbololo and Dawida with the latter two only separated by a steep valley at 900m. Sagalla is quite far from the rest, separated by a long stretch of lowland plains and the Voi River. Dawida is composed of several forest fragments with only two large fragments larger than 50 ha and about seven other small patches that are barely more than 10ha including Fururu, Mwachora, Macha, Ndiwenyi, Kichuchenyi, Yale and Vuria. All the forest fragments are now limited to the steep hillcrests and are surrounded by human settlement mosaics. Surprisingly, these fragments continue to support incredibly rich biodiversity. The larger fragments are gazetted under Kenya Forest Service

(KFS).

The most common indigenous trees species in all the fragments are *Phoenix reclinata*, *Tabernaemontana stapfiana*, *Albizia gummifera* and *Xymalos monospora*. There are also plantations of exotic trees species such as *Pinus patula*, *Cupressus lusitanica*, *Acacia mearnsii* and *Eucalyptus saligna* that were planted to cover the severely degraded areas during colonial times.

Mbololo fragment is the largest of all covering an area of 220ha, forming a narrow and long stretch on the hillcrest at 1,779m. It is clearly visible from Mombasa road around Voi town and also easily accessible but the last stretch near the forest is steep and would require a 4WD vehicle.



Portion of forest showing typical plants ©Wagura.L

Mbololo fragment has the best preserved and richest flora and is the most important stronghold of the endemic Taita thrush. It is also famed for three plant species and a snake species endemic to this forest.

Ngangao forest fragment is the second largest. It covers an area of 147ha at an altitude of 1,952m at the highest point. The forest is located an easy 20 minute drive north of Wundanyi town. About 120ha is covered with indigenous forest on the steep eastern side while the rest is plantation and rock outcrop on the western side. This forest is particularly special in that it hosts good populations of



A local high school taking a guided nature walk at Chawia forest.

all the Taita endemic birds as well as many other endemics of other taxa. Facing west from the Ngangao rock outcrops is **Iyale** patch at about 4km. The protruding long and pointed bare rock is unmistakable. It is the second highest (2104m) after Vuria. Iyale peak offers the most spectacular 360° viewpoint and great sites for hiking and rock climbing. **Chawia** is a medium size fragment (50ha) at an altitude of 1600m. It is positioned on top of a steep cliff as is clearly seen from the nearby Mwatate lowlands. Although the forest suffered from recent massive deforestation, the local community groups have tried to restore it by planting native tree species and the canopy gaps are

rapidly closing. All the endemic species of birds are present but in extremely small numbers and therefore hard to spot. The beautiful trails are tranquil and have a lot to offer including hundreds of butterflies some of them endemic to Taita spread out from forest floor to the high canopy. **Chawia** is easily accessible from Dembwa (along Mwatate-Wundanyi road) and also from Wundanyi town.

From Chawia, you may have a spectacular view of Kilimanjaro mountain on clear days. Vuria fragment is situated on a steep ridge. It is the highest of all peaks at 2,208m. Due to extreme deforestation, only 1ha of closed canopy natural forest remain, the rest of about 51ha now consist of



The Eastern side of Ngangao forest

montane scrubland with scattered indigenous and exotic trees. However, this type of habitat has proven to be more favorable for the endemic Taita Apalis, a bird species that is now found here in considerable numbers. Due to the sharp ascent only a 4WD vehicle will make it to the top but the trip is worth it.



Iyale as viewed from Ngangao forest



Low clouds cover over the Taita Hills

Climate, Soil and Drainage

The Taita Hills proximity to the Indian Ocean largely influence the weather. The hills form the first barrier to moisture-laden wind from the Indian Ocean forming heavy cloud overhead thus providing stable climate. This aspect and the hills' high altitude ensures frequent mist and clouds precipitation that keep the forest wet all year round. The amount of rainfall average to 1,332–1,910mm per year with the long rainy season occurring from March-May and the shorter rainy season from November-December.

However, due to perhaps global warming, these weather patterns are changing and weather is becoming unpredictable. The immediate vast surrounding lowlands are very dry with a minimum yearly rainfall as low as 250mm thus contrasting sharply with the cloudy forests up the hills. The soils can be termed as excessively to well drained dusky-red to dark brown sandy clay loam and in some areas rocky and stony. They are acidic hence very low pH of 3-4.

The soil fertility status is very low due to

excessive leaching and low pH. These soils have high aluminum level, low calcium and with no potassium. However, with the boost of fertilizer and natural manure, the soil does yield. The soil is also used in bricks making by the locals for construction and about 98% of all buildings walls are made of bricks.



Very Inclined cultivated land



A section in the Taita Hills



Sprawling Taita Planes ©Mwangi Githiru



Honey harvested and processed in Taita Hills



Baskets made from *phoenix reclinata* leaves in Taita© A.Mwameso

Ecosystem Services: The Value of Nature

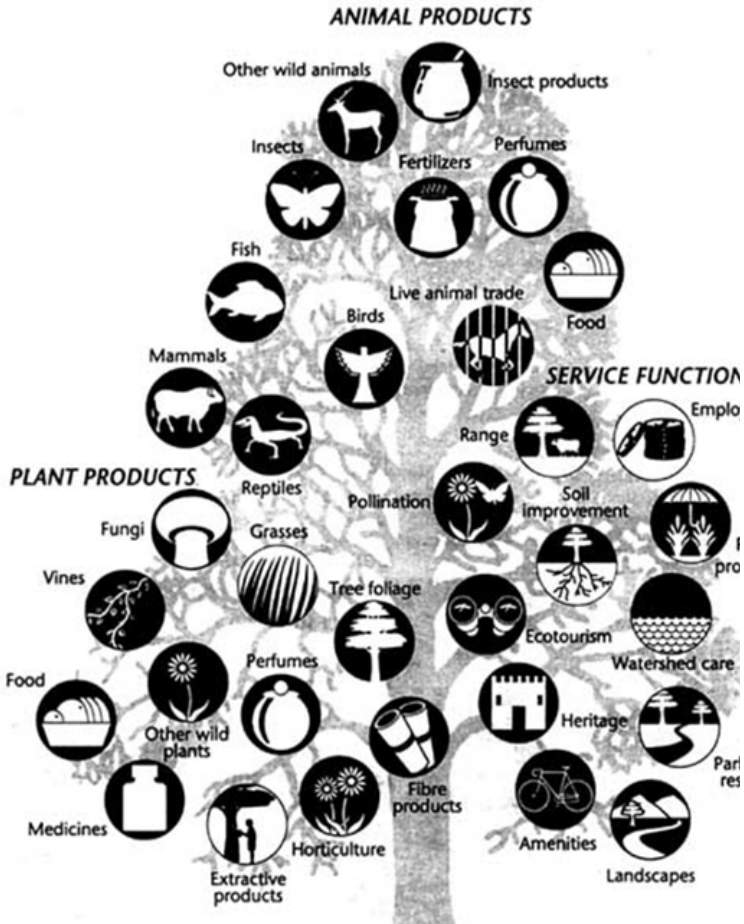
Nature has a lot to offer to people. The delicate balance between the water cycle, soil and vegetation (forests act as water catchment area and prevent soil erosion) makes the hills have a high agricultural potential. Small-scale crop agriculture flourishes and the quality and flavor of the Taita cow milk is known up to Mombasa. Bees feeding on nectar and pollen of the diverse flowers provide locals with honey for own use and for sale. At the same time, those bees are indispensable in crop pollination (many crops worldwide depend on bees for their seed set!). Not less than 80% of the trees are used by local people. Palm leaves (*Phoenix reclinata*) for instance, are used to make shopping baskets, and many species have medicinal value. The cool forests uphill are important for carbon sequestration and help in mitigating climate change effects. They provide fresh air and provide numerous possibilities for educational and recreational purposes, and tourists visit

the place with local guides, looking for endemic species. As such, the forests and surroundings provide local people with many uses as a source of livelihood, and are therefore very valuable. These forests are resilient but also delicate. They merit respect and only sustainable use will enable people and wildlife to live together as they do now. Agroforestry could be an important way to provide corridors for plants and animals



A Taita lady weaving using *phoenix reclinata*. ©A.Mwameso

on their way from one forest fragment to the other, and at the same time fulfill the local growing demands for fuelwood. Further encroachment should be avoided at all times.



The 'tree of life' representing some examples of ecosystem services provided by forests. (source: <http://www.fao.org/docrep/w8827e/w8827e03.htm>)



Kinyatta skulls cave

Community and Culture

The Taita community also known as Wadawida who inhabit the Taita Hills have settled here for several centuries. Their origin is little known for certain but being Bantus, they probably migrated with other Bantus from West Africa. This group of western Bantus first settled in the now Taita-Taveta County entering through Tanzania. The Mijikenda tribes believed to be among the group moved further down to the Kenyan coast while the Taita people settled in the hills.

Traditionally, the Taita tribe consisted of clans known as Vichuku and each lineage occupied its own territorial area of the hills. There are three sub-tribes of the Taita, the Wadawida who traditionally live in Dawida around Wundanyi, the Wasaghala who speak Kisaghala that is much closer to Mijikenda and then Wakasighau.



A Taita young lady and a girl coming from the market

Although many of Taita traditions have now faded away, they were part of their life all along. They had very strong religious beliefs and believed that their God lived in these spectacular hills. The huge rocks (Maghamba) and caves (Mbanga) were considered very sacred places for worship and for the dead. When an important community member died, the body was exhumed and six months later the head was separated from the body and then skulls arranged according to lineages inside the caves. This practice stopped not long ago and can still be witnessed in several caves like in Kenyatta, Iyale and Mwanda Caves. Kenyatta Caves also have a history as one of the hiding places of Kenya's first president, Jomo Kenyatta during colonial times hence the name for the caves. Some caves were also used as

isolation wards for people infected with dreaded diseases. Selected forest patches (Figghi) were used as sacred sites for sacrifices to their God. These forest patches are feared to date which contributed much in conservation as some still survive intact. There were also selected areas on the very steep rock outcrop (e.g Wesu, kwa Kinuku and Mwachora) which were used as punishing ground. Witchcraft practitioners and other dangerous people were thrown from the top to meet their death on the cliff floor. Incredible traditional dance performances like the famous Mwazindika, demonstration of various ceremonies and fascinating, detailed cultural narratives can be enjoyed in Taita cultural centers, an active one being Njama Mzango cultural center at Kitukunyi.



A guide at Kenyatta Caves



Sacred caves in Vuria



Saintpaulia teitensis

The Forest Flora

The Taita Hills harbor the montane cloud forest whose vegetation is much influenced by both Eastern Arc and Kenyan highlands. Despite losing about 98% of its forest cover in the last 200 years, the remaining Taita Hills forest fragments continue to extraordinarily support high number of endemics and unique flora. The vegetation structure and composition is more or less similar in all the fragments apart from Mbololo tree community that differ significantly in composition. Vuria fragment has also largely transformed to almost bush-land type of habitat due to earlier massive deforestation.

Taita Hills flora is probably the most fascinating in Kenya. The flora is very rich and full of endemism. In these small and extremely fragmented forests, more than 13 plants species are endemic to the Taita Hills, which means they occur nowhere else

in the world, and 22 species are endemic to the Eastern Arc. The uniqueness of the area can be seen and admired in all the forest fragments. During flowering periods (Nov-Mar) forests' tree canopies are awesomely painted in all sorts of flower colors. Many attractive species, medicinal species, edible and high protein fungi like mushrooms, edible herbaceous plants, sweet wild berries and fruits are what composes the forests.

Looking upon big tree trunks and the high canopy of these forests you will notice the common occurrence of tree species like *Tabernaemontana stapfiana*, *Strombosia scheffleri*, *Phoenix reclinata*, *Newtonia buchananii*, *Chrysophyllum gorungosanum*, *Albizia gummifera* and *Syzygium sclerophyllum*. *Ocotea usambarensis* and *Podocarpus* were once common but were heavily logged due to their valuable timber.

Today they have become rare . The tree canopy here can grow really tall and have a wide diameter. Examples are *Aningeria adolfi-friederici* and particularly *Newtonia buchananii* tree in Ngangao forest that is believed to be the hugest tree in the entire Taita Hills. It is said to be several hundreds of years old and has acquired the title of of ‘Mother-of-all-trees’. Many visitors to this forest visit the site to witness this splendid tree.

In the understory of these fragments some of the common low canopy trees and shrubs are *Pauridianthus paucinervis*, various species of *Psychotria*, *Dracaena steudneri* and *Dichapetalum eickii*. Common herbs include *Piper capense*, *Culcasia falcifolia*, *Asplenium holstii* and *Blotiella stipitata*. Epiphytes, literally plants growing on other plants, like *Lycopodium holstii* and *Streptocarpus montanus* are also common in almost all forests fragments. There are many fungi and other species belonging to lower plants like moss, lichens, liverworts and thornworts.

Walking along the Mbololo forest trail that run all along the hillcrest you get to discover how intact the forest is. Both sides of the path are covered by thick vegetations that may at first appear to you like a single species but are in a fact variety of hundreds of species. Among the plants deeper in the forest, you may be lucky to find



Impatiens teitensis



Psychotria petiti



***Dorstenia christenhunszii* ©K. Thijs**

three species that are only found in this forest and nowhere else in the entire world. These are: African rock violet *Saintpaulia teitensis* (also known as *Streptocarpus teitensis*) a very rare plant species restricted to only 3ha range on wet rocks, *Ypsilopus* an orchid also restricted to the wetter side of the forest and *Dorstenia christenhunzii* that was only identified in the year 2012 on the eastern slope of Mbololo along water streams. Ngangao fragment also boast three endemic plant species; *Zimmermania ovata*, *Meineckia ovata* and a *Psychotria* species which are restricted to the relatively dry northern part of Ngangao only. *Impatiens ingleri* ssp. *pupescens*, *Diphasiopsis fadenii*, and *Memecylon teitense* as well as the native coffee, *Coffea fadenii* are endemic to only Mbololo and Ngangao fragments (the latter also occurs in Pare Mountains of Tanzania). The rest of the endemic plant species occur in most of Taita hills fragments and they include; *Impatiens teitensis*, *Millettia oblata*, *Psychotria crassipetala*, *Psychotria petiti*, and *Chassalia discolor*. More endemic plant species continue to be identified by research scientists. Hopefully they will be identified before they disappear. As earlier mentioned in this book, Taita Hills have a lot of floral similarity with the rest of the Eastern Arc, especially with Usambara

forests in Tanzania. Rare and endemic species to Eastern Arc include species like: *Acridocarpus scheffleri*, *Carex castanostachius*, *Clematis dolichopoda*, *Coccinia gandiflora*, *Cola greenwayi*, *Crotalaria lukwangulensis*, *Dasylepis integra*, *Cyphostemma braunii*, *Dicranolepis usambarica* and *Euphorbia usambarica* among others. A complete list of Taita endemics and species endemic to Eastern Arc Mountains together with many other Taita Hills species is provided in the checklist at the back pages.



Meineckia ovata



Memecylon teitensis ©Wagura.L



Milletia oblata



Young *Coffea fadenii*



Chassalia discolor ssp *teitensis*

Photos of some plants endemic to the Eastern Arc



Dicranolepis usambarica ©Wagura.L



Euphorbia usambarica ©Wagura.L



Cola greenwayi



Dasylepis integra



Syzygium sclerophyllum



Polyscias stuhlmannii © K. Thijs



Taita White-eye



Taita apalis ©Peter R.Steward

Birds of Taita Hills Forests

Taita Hills is one of the most exciting bird-watching sites in Kenya for its unique, endemic, rare and very beautiful bird species. The Taita Hills forests are classified as an Important Bird Area (IBA) due to the presence of bird species with restricted ranges and globally endangered species. The Hills are ranked among global conservation priority sites for birds and other animals and plants. Taita Apalis *Apalis fuscigularis* and Taita Thrush *Turdus helleri* are endemic to Taita Hills – found nowhere else on Earth.

There is also an endemic race of the Montane White-eye, *Zosterops poliogaster silvanus*, which was until recently considered a full species (Taita White-eye *Zosterops silvanus*). The Taita Apalis too is sometimes considered a race of Bar-throated Apalis, *Apalis thoracica fuscigularis*.) Both Taita Thrush and Taita Apalis are considered critically

endangered according to BirdLife International and the IUCN Red List of threatened species. In fact, the Taita Apalis can now be considered as one of the rarest bird species in the world with its current population now estimated at only about 300 individuals. Three species being endemic and two out of them with only a few individuals existing are species you wouldn't like to miss! Getting to the forest early in the morning you are likely to spot all the three.

The Taita Apalis is shy but active, and is mostly heard making intermittent calls most of the day. In Ngangao and Vuria it is frequently seen in pairs, foraging in the dense understory of forest gaps. It also occurs at forest edges and close to water sources, especially in places with dense climbers. You can still make a rare encounter in Yale, Chawia and Fururu forest fragments.

Taita Thrush is also shy but is often heard singing its morning and evening mellow chorus. This forest specialist hops on the ground, frequently turning leaf litter on the forest floor, using its bill to forage for small invertebrates. It also occasionally flies up to the mid- and upper-canopy to feed on fruit. When not feeding, the thrushes are usually found perched on tree branches in the middle canopy, silent or singing. There are higher chances of spotting the Taita Thrush in Mbololo and Ngangao forests, which are its strongholds.

Taita White-eye is unmistakable with its large white eye-ring. It is found in all forest fragments in quite good populations. This species also

occurs in abandoned farms near the forest and in plantations of exotic trees. The white-eyes are usually seen in pairs or small flocks foraging on insects and small fruits.

In the Taita Hills forests, you will be pleased to see the Stripe-cheeked Greenbul that in Kenya has its range only in the Taita and Chyulu Hills and very few records in Mt. Monduli and Namanga hills. This species is here in plenty and is ever noisy inside the forest, making it easier to find. The very rare Taita Falcon has been spotted here a few times. For the migratory birds, be on the lookout for Grasshopper Buzzard (Nov-Mar), Tree Pipit (Oct-April), Madagascar Bee-eater (May-Sep) and Eurasian Bee-eater (around Aug-April).



Taita thrush in its natural habitat ©Mwangi Githiru



Taita apalis nest and eggs



Taita white-eye nest and eggs

Other interesting forest bird species include; Lemon Dove, Hartlaub's Turaco, Silvery-cheeked Hornbill, Orange Ground Thrush, White-starred Robin, Blue-mantled Crested Flycatcher, Evergreen Forest Warbler and Yellow-throated Woodland Warbler. On the drier side, towards the lower parts of the hills outside forests, some of the interesting species you

encounter are: Yellowbill, Golden-tailed Woodpecker, Brown-breasted Barbet, Scaly Chatterer, Grey-headed Bush-shrike, Golden Pipit, Bearded Scrub Robin and Black-cheeked Waxbill, among others. A complete list of all bird species recorded inside and outside forests from the altitude of 1200m is provided.



Stripe-cheeked Greenbul ©Peter.R. Steward



Praomys taitae © Ch Boudet - Mammals Planet

Mammals

Perhaps due to the small area of forest cover, not many mammals are found, especially the big mammals which are poorly represented. It is said that there were Leopards in 1950's but they are no more. Surprisingly, there is a primate and a rodent species that are endemic to the Taita Hills.

A species of Dwarf Galago (Bush-baby) is a recent discovery in year 2002 for now only referred to as *Galagoides* species as its proper name has not been assigned yet. It has a distinctive call and morphology; features enough to prove that it's a full species.

It is closely related to *Galagoides orinus* of the Tanzanian Eastern Arc Mountains. This 'Taita Mountains Dwarf Galago' has a cinnamon – brown color on its back and flanks, orange–brown tinge on the thighs and the shoulders and with grayish -brown to cinnamon–brown tail that is dark tipped. This is a nocturnal insectivore

that inhabits natural, deep forest and has been observed in larger Mbololo and Ngangao forests. The *Praomys taitae* (Taita Forest Rat) is a medium size rodent endemic to the Taita Hills. It is a forest dependant that is widespread in all forest fragments with the largest forest fragment supporting the highest numbers.

The shy Common Bush Pig can be seen in Mbololo. The equally shy Common Duiker is uncommonly encountered within Mbololo, Ngangao and Vuria forest fragments and rarely in few other small fragments. Primates like Sykes Monkey and Greater Galago are common in several fragments. Other small mammals include: Sengis (Elephant Shrews), Rodent species, Red-legged Sun Squirrel, Honey Badger, African Porcupine, Tree and Rock Hyraxes, Large Spotted Genets and bats specie. More are listed on the mammals checklist.

Invertebrates



Lack of a backbone is what unites Invertebrates more rather than their other shared characteristics. Invertebrates include animal groups such as spiders, flatworms, molluscs, arthropods, insects, segmented worms, scorpions, millipedes as well as many other lesser-known groups of animals. Of all species alive today, invertebrates are the most diverse comprising of an estimated 97 percent of all world's species.

The Taita Hills are very rich in terms of invertebrates and they are home to many species that are found nowhere else in the world. The most conspicuous and common invertebrates include Diptera flies, Lepidoptera (butterflies and moths), Diplopoda (millipedes), Mollusca (snails and slugs) and Araneae (spiders). These amazing creatures are found almost everywhere; inside forests, on wetlands, on farmlands and along roads. All through the

year, there are many gorgeous butterflies that will catch your eyes with their remarkable display. The two butterfly species; *Papilio desmondi teita* (Desmond's Green-banded Swallow-tail) and *Cymothoe teita* (Taita Glider) are endemic to Taita Hills while *neptis aurivillii* (Aurivillius' Sailer) is limited to Eastern Arc Mountains. The endemic *Papilio desmondi teita* appears very similar to another species called *Papilio bromius*. They however do not share habitats. Like other Swallowtails, the Desmond's Green-banded Swallowtail is an attractive big butterfly with blue bands on the wings and is commonly seen inside forest, forest fringes and outside forest visiting flowers. Its larvae feeds on plants belonging to a family called *Rutaceae* (*Clausena*, *Teclea*, *Fagara*, *Calodendron*, *citrus*).

Cymothoe teita is the darkest of all *Cymothoe* in Kenya. The male is little smaller than female and has the typical greenish-yellow tinge on forewings or Black with reddish-brown lunules (Crescent shaped markings).

The female has a conspicuous narrow white band. This is a forest species and the male is fond of flying up high on the canopy. The primary larval food source has been observed to be the Eastern Arc endemic *Dasylepsis integra*. There are many other beautiful butterflies in the Taita hills and the list and photos of some of the common ones is provided in



Male *Cymothoe teita*
©Lucas Borghisio

this book. The other close relatives of butterflies; the moths are also well represented here. There is huge selection of day and nocturnal moths like the Luna moth, emperor moth, Tiger moth among others.

Most of the Diplopoda (millipede) are found in the soil and leaf litter while some live on trees. In Taita Hills, there is an endemic millipede, *Taitastreptus flavipes* that belong to its own genus (*Taitastreptus*). This species is arboreal (tree dwelling) and is unmistakable with its many pairs of yellow legs. For the Araneae, two endemic species of spiders belonging to a new genus in Gallienillidae family have been recorded. The record here in Taita Hills was interesting as the family was only known from Madagascar and Cape area in South Africa.

Several species of Molluscs are found in these forests and few endemic have been recorded. Among the endemic snail species

is the small sized *Gullela spinosa*. It is usually found on forest floor in leaf-litter. With many other species of invertebrates, the forests are never silent. The Cicadas are very vocal and the loud calls of males attracting females for mating are heard in every forest corner. The male Crickets that surprisingly use their legs to produce the sound are equally vocal. Cicadas are said to be among insects that can survive for unbelievably many years.

If you visit the water pools inside and outside forest during rainy seasons, you will find an interesting insect known as *Nepa* (commonly known as water scorpion) for it superficially resembles the scorpions although it doesn't sting. This insect is a good swimmer and will comfortably swim under water using its tail for breathing. Whirligig beetles will also catch your eye with their incredible speed on water. If you keenly watch among tree trunks, branches and the forest undergrowth, you will be amazed at the high diversity of many other invertebrates that are well camouflaged.



Taitastreptus flavipes
©Didier Vandenspiegel



Taita Two-horned Chameleon, *Kinyongia boehmei*, male

Reptiles and Amphibians

Reptiles are cold-blooded vertebrates that include Chelonian (tortoises, terrapins and turtles), squamates (snakes and lizards), crocodiles and tuataras. There are about 8,000 species of reptiles alive today on the planet. Of the four reptile groups, the squamates (amphisbaenians, lizards and snakes) are the most diverse. Amphibians include newts, salamanders, frogs, toads, and caecilians. There are between 5,000 and 6,000 species of known amphibians on earth. Sadly, Amphibian species are in huge decline around the world due to a variety of threats including that of, habitat destruction, diseases, invasive species, climate change and toxins. Reptiles and amphibians are shy, secretive and well camouflaged creatures that may be hard to spot. They are also feared by many due to some myths and few being venomous. They are therefore much less understood by

many people and Taita Hills herpetofauna knowledge is not exceptional. However, with interest and some caution, you can enjoy these beautiful creatures that are indeed some of the most intriguing in the world.

The reptiles of Taita Hills are represented by tortoises, snakes and lizards (including chameleons) while its amphibians are comprised of frogs, toads and the little known Caecilians. There are endemics that are restricted to these montane cloud forests.

Two endemic reptiles are found here. A species of snake, Taita Hills Purple-Glossed snake (*Ambylodipsas taitana*) is endemic to Mbololo forest. It is a small (43cm long), smooth scaled, dark snake with a blunt tail. Its head is short and with a quite pointed snout. The scale at the front of the lower jaw is white. This snake is so rare that very little is known on its ecology and the only female specimen was collected more than 60 years ago. Few other species of snake can be found in these forest fragments and they

include Battersby's Green snake, African Python, White-lipped Snake, House Snake and the Eastern Vine Snake that in Kenya is only found in the Taita Hills. The Taita Two-horned Chameleon (*Kinyongia boehmei*) is another reptile endemic to Taita hills. This species is easy to identify as the male has a pair of ridged horns that protrude from the nose. The female lacks the horns and is blunt snouted instead. This species is found inside forest, in bushes and in cultivated areas where it is seen basking on the sun or feeding on insects and other invertebrates. Other lizards like Skinks can be seen on the forest floor in the leaf-litter. Yellow-throated Plated Lizard is also common in the understory especially on forest fringes. With little bit of luck, you may see Jackson Forest Lizard, a very attractive lizard that is not so common here. On the many splendid Taita Hills rocks, the Red-headed Agama Lizards are seen resting quietly, enjoying the sun and other times busy hunting arthropods. In the dry sides of the hills you may encounter the Leopard tortoise outside the forest.

There are 26 species of amphibians recorded in Taita Hills from which two species of Caecilian Sagalla Caecilian (*Boulengerula niedeni*) and Taita Hills Caecilian (*Boulengerula taitana*) and a species of frog, Taita Warty frog (*Callulina dawida*) are endemic. Caecilians are cryptic amphibians that people tend to

confuse with reptiles for their snake-like appearance and their slithery movement and they have suffered many deaths for that reason. Others tend to think they are worms because of their soft skin and their fondness to live underneath the ground. However, although they are nothing like frogs and toads in appearance, they show similarity with their amphibian relatives (e.g. moist skin and moisture dependency). They even have a back-bone and therefore cannot be classified as worms which are invertebrates! They lack limbs and are actually said to be a good example of evolving amphibians.

The *Sagalla Caecilian Boulengerula niedeni* is only found in Sagalla Hill highland area and only between altitudes of 1,000-1,500m. It is brownish in appearance and is normally seen in patches of indigenous forest and in farmland where they are fond of soil rich in organic manure and under organic debris. During dry season, they seek refuge at the edge of water streams and pools. They are listed as critically endangered due to their tiny range and they are drastically losing their habitat due to soil erosion as well as increasing exotic plantations like Eucalyptus trees.

The other Taita endemic, Taita Hills *Caecilian Boulengerula taitana* has a bluish appearance and is locally abundant in natural forests, in plantations and farmlands. It also prefers areas of moist soil rich in

organic manure as well as under decomposed leaf litter and debris. During dry season, it penetrates deep inside the soft ground or move near water streams. Both species feed on variety of invertebrates including earthworms and ants. The females lay their eggs in underground burrows where they warm them by coiling around them until they hatch into young ones. The young feed on the highly nutritious mothers' outer skin until they are able to move out and feed on their own. The endemic frog, Taita Warty Frog *Callulina dawida* has only been

observed inside forest between 1,400-2,200 in Mbololo and Dawida forests blocks. It is most active at night and live in burrow in decomposed logs. It can also be seen walking on leaf-litter or perched on plants. It inflates itself when disturbed and the skin produce sticky substance when rubbed. Other montane forest amphibians species found in Taita Hills include; *Xenopus borealis*, *Arthroleptis xenodactyloides* and *Amietia angolensis*, . Full list of reptiles and amphibians recorded in Taita Hills is given in appendix 3.



Female Taita Warty frog © P. Malonza



Callulina dawida walking from egg clutch in a ground nest © O.Mwakio



Sagala Caecilian, *Boulengerula niedeni*
© P.Malonza



Taita caecilian, *Boulengerula taitanus* coiling around its eggs. © John Measey

Natural Stones and Minerals



Natural stones that host gemstones and other minerals

Underneath the big rock outcrop and evergreen land that Taita area landscape, lie precious stones and natural minerals. Throughout history of civilization, precious stones like gemstones have been admired for their attractive natural appearance and people have always connected strong cultural attachments. In the ancient times natural stone could only be identified by colors and it was only from the mid 18th century that archaeologists have begun to identify them according to their mineral composition. Thanks to this technology now we know the formation process and mineral content.

The three districts of Taita Taveta County: Taita Hills, Mwatate and Voi all geologically lie partly or entirely within Mozambique belt.

In Taita Hills, the rocks along the Mozambique belt include Quartz Feldspargneiss, Quartzites, Graphite Gneiss, Banded Biotite Gneiss, Kyanite Sillimanite (-Garnet-Biotite)

Gneisses, Marble, Calc-silicate rocks, Amphibolites, UltraMafic rocks, Migmatites and Pegmatites. There are also superficial deposits that are revealed by three types.

Alluvium whose traces are found in gravels silts and sands mainly along rivers.

Colluvium frequently seen in heavily gullied areas and slopes of the surrounding pediplain.

Soils which include Kaolinitic or light coloured sandy soils, Residual ferralitic reddish sandy soils.

The widespread small and large scale mining in the entire Taita Taveta County is evidence that the area is packed with a variety of gemstones and industrial minerals. Gemstones mined in the area include Garnets (Tsavorite, Rhodolite, green garnets, red garnet, yellow garnet, Change colour among others.), Corundum (Ruby and Sapphire), Amethyst, Tourmaline (yellow, green, black etc.), Peridot, Iolite and Spinel. The area also boast of industrial minerals



Amethyst

like Iron ore, Limestone, Copper, Manganese, Marble, Magnetite, Asbestos, Graphite, Kaolin Clay, Mica and building stones.

Garnets

Garnets are formed through metamorphic process, that is, when metamorphic rocks such as Schist and Gneisses are heated under very high temperatures and pressure. An association of graphite gneisses and marble is a must for the formation of green garnets. For the local miners, stretching lineation appears as good guide to pockets. Garnets occurs in variety of colors that include red, orange, yellow, green, purple, brown, blue, black, pink and even colorless. They are therefore much preferred by jewelers for their variation and they have been in use since Bronze Age as gemstone. In the Taita hills, varieties of garnets are found in many areas such as Chawia, Sagala and Mbololo.



Green Garnet



Two forms of Chawia garnet cut

Corundum (Ruby and Sapphire)

Ruby and Sapphire are found in aluminous gneisses and granulites and are often associated with silimanite, kyanite and almandine garnets. Rubies normally occur in prismatic or tabular form while sapphire occurs as truncated dipyramidal crystals of blue or purple color. Corundum has been in use since 300BC traditionally in many countries of the world, Blue sapphire has been used as a gift for the 65th wedding anniversaries while other ruby and sapphire varieties for 45th wedding anniversaries. In Taita Taveta County they are found in Mwatate and Sagala areas.

Amethyst

Amethyst is a type of quartz (SiO_2) that naturally forms when quartz is subjected to high temperatures underneath the ground. The most common color of amethyst is purple that is believed to be as a result of effects of ferric iron and aluminum that form its impurities. The use of amethyst dates very many years back and was often used as jewel and as charm. The name Amethyst actually comes from the ancient Greek *amethystos* (not) and *methustos* (“intoxicated”) from their belief that the stone protected its owner from drunkenness. The Greeks and Romans therefore wore Amethyst and used beer drinking vessels made of amethyst in belief that it would protect them from intoxication. Amethyst was also largely used as jewels by the ancient Egyptians while medieval European soldiers wore amethyst charms as protection in battle in the belief that amethysts heal people.



Amethyst cut

Tourmaline

Tourmaline is formed through a process known as hypothermal process which involves cooling of magma and has a complex and varied chemical formula that is characterized by the presence of boron element. Tourmaline can also be formed through metamorphic process. In this scenario, the key geological force emanate from the folding of large rock formations within the earth’s crust rather than from the hot magma. Tourmaline is one of the most complex gemstones in the world being popular for many hues it naturally displays. Its name actually originates from the Sinhalese pair of words that translate to ‘stone with mixed colors.’ amazingly, some of these stones can display more than one color at the same time and the color of the crystal displayed in natural daylight can change if displayed on artificial light.



Yellow Tourmaline



Iron ore mining at Kishushe. ©Edward

Industrial Minerals

Magnesite ($MgCO_3$) occurs in numerous sites and is associated with dunites-serpentinite complexes. It is generally highly siliceous and not suited for high quality extraction therefore is only suitable for agricultural application. Anthophyllite asbestos occur in a serpentine complex at Mwakinyambu area, associated with some talc and vermiculite. However the fibres are short and therefore not suitable for industrial application. Numerous graphite gneisses occur in the area, for example in Chawia and Mwatate areas. Kaolin is entirely of supergene origin and is therefore restricted to the Taita hills like in Mghambonyi area. Muscovite books occur frequently in zoned tourmaline pegmatites like in Mgange area. Marble is quarried locally at small scale. Due to high

Magnesium oxide content, it is only suitable for burning to make lime and as dimension stone or aggregate. Magnetite (Iron ore) occurs in most parts of the County but the major ongoing mining is at Kishushe area.



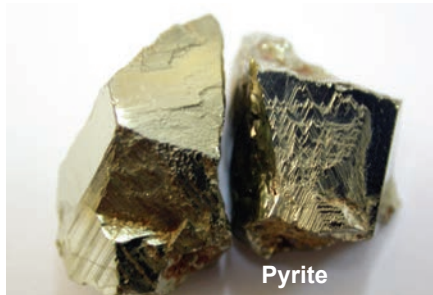
Iron Ore



Lolite



Pink Tourmaline



Pyrite



Green Tourmaline



Ruby



Rhodolite



Kyanite

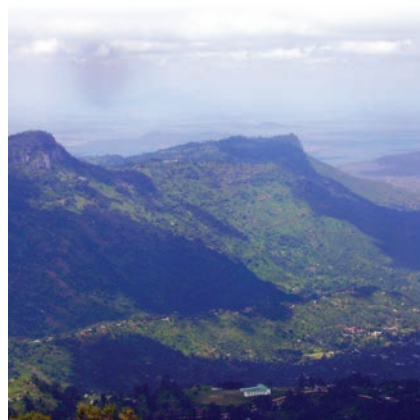
CAMPING

Nothing beats the feeling of camping in these ancient Hills of Taita that date back to many millions of years. The view of the vast sceneries right from your campsite is awesome. If you wish to camp in any of the Taita Hills forests, prior arrangement with Kenya Forest Service is required. Some forests have camping facilities and the local tour guides are very helpful. It would be even more convenient if you choose to come with your camping equipment. Other than forest campsites, there are community campsites that allow you to interact with the local people. Camping in any of the campsites gives a totally fulfilling experience. The Ngangao forest campsite situated not far from Wundanyi town is well equipped. The adjacent bare rock will offer a spectacular morning

view of Mount Kilimanjaro which is the highest mountain in Africa. Viewing the bright yellow sun disc sinking behind this mountain at sunset is undoubtedly memorable. An early morning nature walk will provide you with peace of mind and offer you an opportunity to watch variety of bird species some of them unique to the area. Vuria peak is the highest point in the entire coastal area and has a wide flat area at the summit where you can camp. The wide view of the night skies is stunning and watching the constellations from here is absolutely wonderful. Vuria peak can get really chilly sometimes especially at night and it is advisable to carry warm clothes. Other forest fragments like Mbololo, Chawia, Fururu, Yale and Wesu also offer great sites for camping.



Vuria Campsite



Nice view of lowlands from Vuria campsite



Morning and evening view of Mt Kilimanjaro-the highest mountain in Africa

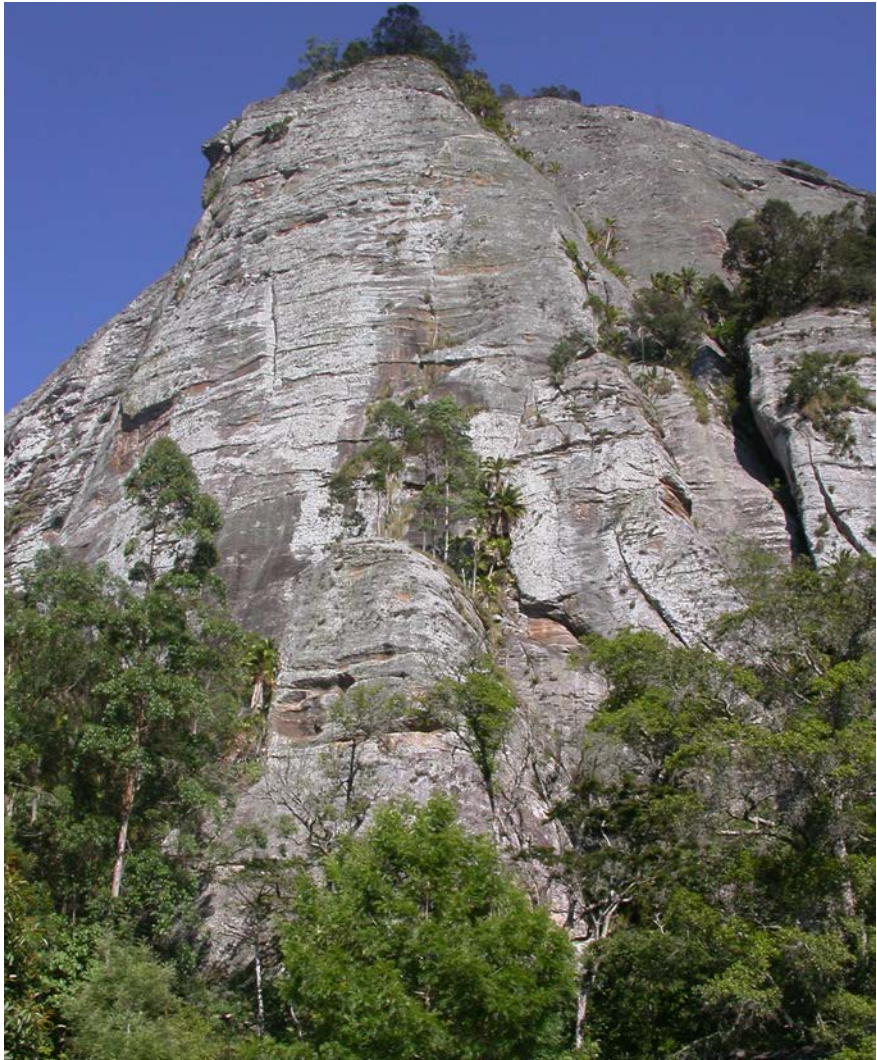


lyale bare peak

Recreational Sports

Taita Hills is the place to be for the lovers of trekking, hiking, cycling and rock climbing. Walking in pleasant weather surrounded by spectacular sceneries is breath taking. The roads have testing ascent and gentle slopes that are also perfect for the bikers. Almost all the forest fragments are located on the hilltops and some of them like lyale and Vuria have bare summits that provide a 360° viewing point of the area. Hiking under the forest shade through the natural gaps though testing, is so fulfilling. Having made it to the summit comes

with a high reward of enjoying the magnificent view of the other Taita hills and the surroundings lowlands. The enormous rock outcrops are indeed an invaluable nature gift to the rock climbers. Some of these rock outcrops like the Wesu and Yale rock outcrops are extremely inclined and huge (more than 100m high) and are ideal for the experienced rock climbers. Both armatures and professionals athlete will find the Taita Hills cool weather and topography perfect for exercising.



Wesu rock outcrop more than 100m high; Suitable for experience Climbers



Taita Skies

Taita Hills is an amazing place to watch the night sky and heavenly bodies. Being far from big cities that flood the skies with artificial lights, the Taita Hills night skies are naturally lit. And high on the hills there is a wide view of the skies. Best viewing is during the dry season, usually January to March and September to October. In any season there may be some nights with clear skies.

The moon is the brightest light in the night skies reflecting light from the sun. Our Moon is indeed interesting and special because it is the closest celestial object to earth. In just under one month, we see the moon go through its different phases. The new moon appears as a crescent in the west. It grows wider each night until it is like a half moon overhead at sunset. This is called the first quarter. The moon continues to grow until it rises as a full moon in the east

while the sun sets. Then the moon rises later each night until it looks like a half moon overhead at dawn. Finally it becomes a crescent in the east, passes between the sun and the earth, and reappears in the west. Planets are fun to watch and can be recognized among the stars because they are much closer to the earth than stars are. Planets reflect the sun's light and so glow with a steady light. Stars are seen as twinkling dots of light even when observed in powerful telescopes.

Five planets are visible from planet earth and from the Taita Hills you are able to see all the five. Mercury is a tiny bright light low on the horizon. Sometimes it is seen just after sunset and other times slightly before sunrise. Venus is the brightest. Some months bright Venus is seen in the west after sunset referred to as "evening star". Other months it may

be in the east before sunrise when it is called the “morning star.” The same planet can be seen during daytime if you know where to look. Mars, often called ‘the Red Planet’, shines with a reddish light. Both Jupiter and Saturn are bright yellow but Saturn is further from Earth and looks like a star, while Jupiter is very bright.

Ancient people, especially those who travelled by sea, gave names to the stars. They thought that some of the stars formed patterns that we call constellations. Kenya’s position at the equator allows excellent view of a large number of constellations. If you are really eager to stay outside all night long, or at least in the late evening and before dawn, you will be able to observe most of the constellations! As the earth turns towards the east, different constellations seem to emerge from the east and travel across the sky towards the west.

From December to April, look for Sirius, the brightest star, in the evening. Below Sirius in the south is the second brightest star, Canopus. Canopus cannot be seen from northern countries.

Near Sirius is the constellation that the ancient Greeks called Orion, the Hunter or Warrior. It rises due east and sets due west. Look for three bright stars in a row, and three fainter stars at an angle to it. If you look at the three

smaller stars with binoculars, you will see the Great Orion Nebula where millions of stars are born throughout time.

On May, June and July evenings, the Southern Cross is prominent, low in the south. You may also see it in December and January before dawn. At the same time, the constellation called the Plough (also called the Big Dipper and the Great Bear) can be seen towards the north.

In July, August and September, the constellation of Scorpius, the Scorpion, stretches across the southern sky in the evening. High in the north, the star Arcturus shines orange in colour.

On clear dark nights you will see the Milky Way, our galaxy, like a pale ribbon across the sky.

And on November and December evenings, look low in the south. You may see what looks like two small pale clouds. These are the Large and Small Magellanic Clouds. They are faraway galaxies, made up of millions and millions of stars. It does not require any special machine to enjoy the heavenly objects and just with your bare eyes you can enjoy a lot. However with a pair of binoculars – and if possible a stabilized pair of binoculars – you will be able to have a better view of these objects.

Taita Common Butterflies



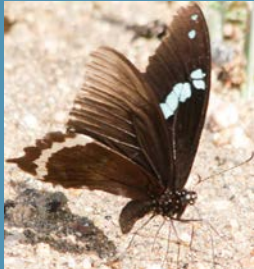
Citrus Butterfly, *Papilio demodocus*



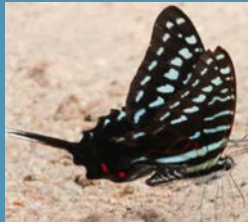
Emperor Swallowtail, *Papilio ophidicephalus*



White-banded Swallowtail, *Papilio echerioedes*



Narrow Green-banded Swallowtail, *Papilio nireus*



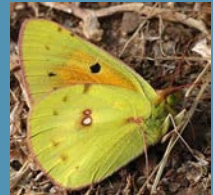
Black Swordtail, *Graphium coloma*



African emigrant, *Catopsilia florella*



Eronia leda,



African Clouded Yellow, *Colias electa*



Brown Play Boy, *Deudorix antalus*



Black Heart, *Uranotauma nubifer*



Round Winged Orange, *Colotis euippe*



African Queen, *Danaus chrysipus*



Friar, *Amauris niavius*



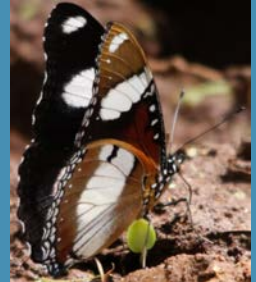
Neocoenrya gregorii



Pearl Charaxes, *Charaxes veranes*



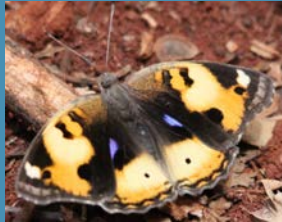
Mother of Pearl, *Salamis parhassus*



Diadem, *Hypolimnys misippus-male*



Small Spotted Sailer, *Neptis saclava*



Yellow Pansy, *Junonia hierta*



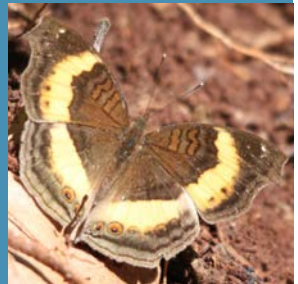
Dark Blue Pansy, *Junonia oenone*



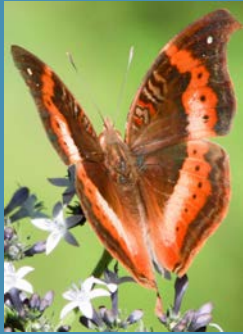
Little Commodore, *Junonia sophia*



Natal pansy, *Junonia natalica*



Soldier Commodore, *Junonia terea*



Eared Commadore, *Precis tugela*



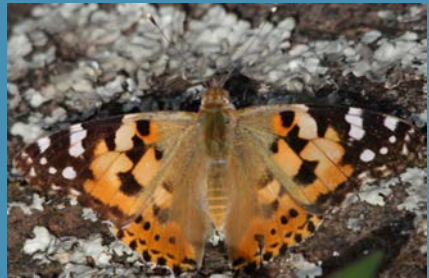
Garden Inspector, *Precis archesia*



Dimorphic Admiral, *Antanartia dimorphica*



Common Leopard Fritillary, *Phalanta phalantha*



Painted Lady, *Vanessa cardui*



Acraea lycoa



Spio Grizzled Skipper, *Spialia spio*



Metisella orientalis



Kedestes rogersi



Gegenes niso

Where to stay

If you are not camping, Wundanyi town is an ideal place to stay. The town is at a central location with respect to the forest fragments. This town is endowed with pleasant weather and breathtaking scenery. Here you will find hotels which serve variety of dishes including delicious traditional meals and also provide comfy accommodation at reasonable rates.

Some useful hotels contacts are:

Taita Rocks Hotel,

P.O. Box 1086-80304 Wundanyi

Tel: +254 (0)720 436 944

Lavender Garden Hotel,

P.O. Box 1295-80304 Wundanyi

Tel +254 (0)722 955 253

Irido Springs Hotel,

P.O. Box 1104-80304 Wundanyi

Tel: +254 (0)729 677 532

Email: iridosprings98@gmail.com

Taita Research Station Guest House,

P.O. Box 1156-80304 Wundanyi

Tel: +254 (0)722 287 486

Email: mwadimemjomba@yahoo.com

County Council Guest House,

P.O. Box 1066-80304 Wundanyi

Tel: +254 (0)723 341 146

Mbololo Guest House,

P.O. Box 395-80300 Voi.

Tel: +254 722 958 019

Email: pjkiteto@gmail.com

Plants endemic to Taita Hills Forests

Chassalia discolor ssp. *Teitensis*
Coffea fadenii
Dorstenia christenhuszii
Impatiens engleri ssp. *teitensis*
Impatiens teitensis
Memecylon teitense
Milletia oblata ssp. *Teitensis*
Psychotria crassipetala
Psychotria petitti
Psychotria sp. B
Saintpaulia teitensis
Ypsilopus sp.
Zimmermannia ovata

Plants endemic to Eastern Arc Mountain Forests

Acridocarpus scheffleri
Aningeria adolfi-friederici ssp. *usambarensis*
Carex castanostachyus
Clematis dolichopoda
Coccinia grandiflora
Cola greenwayi
Crotalaria lukwangulensis
Cynometra sp. A
Cyphostemma braunii
Dasylepis integra
Dichapetalum eickii
Dicranolepis usambarica
Euphorbia usambarica
Galium brenanii
Gymnosiphon usambaricus
Leptonychia usambarensis
Lycopodium holstii
Lycopodium ophioglossoides
Macaranga conglomerata
Ouratea schusteri
Pentas hindsioides
Podocarpus usambarensis
Polyscias stuhlmannii
Polystachya albescens
Psychotria alsophila
Psychotria pseudoplatyphylla
Senecio mirabilis
Streptocarpus kirkii
Syzygium sclerophyllum
Tridactyle cruciformis

TAITA HILLS FOREST PLANT SPECIES

PTERIDOPHYTA

LYCOPODIACEAE

Lycopodium cernuum
Lycopodium clavatum
Lycopodium dacrydioides
Lycopodium.sp.aff.dacrydioides
Lycopodium holstii
Lycopodium ophioglossoides
Lycopodium verticillatum

SELAGINELLACEAE

Selaginella kraussiana

OPHIOGLOSSACEAE

Ophioglossum vulgatum

MARATTIACEAE

Marattia fraxinea

OSMUNDACEAE

Osmunda regalis

SCHIZAEACEAE

Mohria caffrorum

GLEICHENIACEAE

Dicranopteris linearis

HYMENOPHYLLACEAE

Hymenophyllum capillare

H.kuhnii

H.sibthorpioides

Trichomanes borbonicum

T.chevalieri

T.erosum

T.melanotrichum

T.ramitrichum

T.rigidum

T.sp

DENNSTAEDTIACEAE

Blotiella hironymii

B.stipitata

Hypolepis sparsisora

H.sp.aff.rugulosa

Pteridium aquilinum

ADIANTACEAE

Cheilanthes bergiana
Cheilanthes farinosa
Cheilanthes multifida
Doryopteris concolor
Pellaea quadripinnata
Pteris catoptera
Pteris dentata
Pteris pteroides
Pteris usambarensis

DAVALLIACEAE

Arthropteris orientalis

CYATHEACEAE

Cyathea dregei
Cyathea humilis
Cyathea manniana

ASPIDIACEAE

Arachnioides foliosa
Ctenitis cirrhosa
Ctenitis lanuginosa
Didymochlaena truncatula
Dryopteris pantheri
Dryopteris kilimensis
Dryopteris manniana
Polystichum fuscipaleaceum
Tectaria gemmifera

LOMARIOPSIDACEAE

Elaphoglossum acrostichoides
Lomariopsis warneckei

THELYPTERIDACEAE

Amauropelta bergiana
Amauropelta oppositifoliformis
Christella chaseana
Christella dentata
Christella gueinziana
Christella hilsenbergii
Christella sp
Cyclosorus interruptus
Pneumatopteris unita
Pseudophegopteris cruciata
Pseudocyclosorus pulcher
Stegnogramma pozoi

ATHYRIACEAE

Diplazium hylophilum
Diplazium zanzibaricum
Dryoathyrium boryanum

BLECHNACEAE

Blechnum attenuatum
Blechnum ivohibense

ASPLENIACEAE

Asplenium adiantum-nigrum
Asplenium aethiopicum
Asplenium albersii
Asplenium sp.aff.albersii
Asplenium sp.aff.barteri
Asplenium boltanii
Asplenium sp.aff.boltanii
Asplenium buettneri
Asplenium christii
Asplenium elliottii
Asplenium erectum
Asplenium Sp
Asplenium friesiorum
Asplenium holstii
Asplenium hypomelas
Asplenium inaequilaterale
Asplenium linekii
Asplenium macrophlebium
Asplenium manii
Asplenium megalura
Asplenium normale
Asplenium paucijugum
Asplenium sandersonii
Asplenium simii
Asplenium theciferum
Asplenium unilaterale

POLYPODIACEAE

Loxogramme lanceolata
Pleopeltis excavata
Pleopeltis macrocarpa
Pleopeltis schraderi

GRAMMITIDACEAE

Grammitis nanodes
Xiphopteris strangeana

VITTARIACEAE

Vittaria isoetifolia
Vittaria guineensis
Vittaria volkensis

GYMNOSPERMAE**PODOCARPACEAE**

Podocarpus larifolius
Podocarpus usambarensis
Podocarpus sp

ANGIOSPERMAE: DICOTYLEDONES**ANNONACEAE**

Uvaria lucida

MONIMIACEAE

Xymalos manospora

LAURACEAE

Cryptocarya liebertiana
Ocotea kenyensis
Ocotea usambarensis

RANUNCULACEAE

Clematis brachiata
Clematis dolichopoda
Thalictrum rhynchocarpum

MENISPERMACEAE

Cissampelos pareirera
Tiliacora funifera

PIPERACEAE

Peperomia abyssinica
Peperomia retusa
Peperomia tetraphylla
Piper capense

CAPPARACEAE

Ritchiea albersii

CRUCIFERAE

Cardamine africana

VIOLACEAE

Rinorea angustifolia
Viola abyssinica
Viola eminii

CRASSULACEAE

Crassula alsinoides

CARYOPHYLLACEAE

Drymaria cordata

PHYTOLACCACEAE

Phytolacca dodecandra

AMARANTHACEAE

Celosia anthelmintica
Celosia Sp.
Celosia Sp.

BASELLACEAE

Basella alba

GERANIACEAE

Geranium arabicum

BALSAMINACEAE

Impatiens engleri

Impatiens pseudoviola

Impatiens sodenii

Impatiens teitensis

Impatiens walleriana

THYMELEACEAE

Dicranolepsis usambarica

FLACOURTIACEAE

Aphloia theiformis

Dasylepsis integra

Dovyalis abyssinica

Trimeria grandifolia

PASSIFLORACEAE

Passiflora edulis

CUCURBITACEAE

Coccinea grandiflora

Gerrardanthus grandiflorus

Gerrardanthus lobatus

Momordica sp

Oreosyce africana

Peponium vogelii

Zehneria emirnensis

Zehneria oligosperma

Zehneria scabra

Zehneria sp

BEGONIACEAE

Begonia johnstonii

CACTACEAE

Rhipsalis baccifera

OCHNACEAE

Ochna holstii

Ouratea schusteri

MYRTACEAE

Syzygium guineense

Syzygium sclerophyllum

MELASTOMATACEAE

Memecylon teitense

GUTTIFERAE

Garcinia volkensii

STERCULIACEAE

Cola greenwayi

Dombeya goetzenii

Leptonychia usambarensis

MALVACEAE

Pavonia urens

Sida rhombifolia

Sida schimperana

MALPHIGIACEAE

Acridocarpus scheffleri

ERYTHROXYLACEAE

Erythroxyton emarginatum

EUPHORBIACEAE

Acalypha volkensii

Argomuelleria macrophylla

Clutia abyssinica

Croton macrostachyus

Croton megalocarpus

Croton sylvaticus

Drypetes gerrardii

Euphorbia engleri

Euphorbia usambarica

Macaranga capensis

Macaranga conglomerata

Margaritaria discoidea

Neoboutonia macrocalyx

Zimmermannia ovata

ROSACEAE

Prunus africana

Rubus rosifolius

Rubus pinnatus

DICHAPETALACEAE

Dichapetalum eickii

CAESALPINIACEAE

Cassia didymobotrya

Cynometra sp

MIMOSACEAE

Albizia gummifera

Newtonia buchananii

PAPILIONACEAE

Amphicarpa africana

Antopetitia abyssinica

Craibia zimmermanii

Crotalaria axillaris

Crotalaria lukwangulensis

Crotalaria natalitia

Dalbergia lactea

Desmodium repandum

Eriosema montanum

Eriosema sp

Indigofera arrecta
Indigofera arceps
Kotschyia africana
Kotschyia aeschynomenooides
Millettia oblata
Vigna parkeri
Vigna unguiculata

MYRICACEAE

Myrica salicifolia

ULMACEAE

Celtis africana
Celtis gomphophylla
Trema orientalis

MORACEAE

Dorstenia brownii
Dorstenia denticulata
Dorstenia christenhuszii
Ficus exasperata
Ficus sur
Ficus thonningii

URTICACEAE

Elatostema orientale
Pilea johnstonii
Pilea rivularis
Pilea cf.usambarensis
Pilea veronicifolia
Pouzolzia parasitica
Urera hypselodendron

AQUIFOLIACEAE

Ilex mitis

CELASTRACEAE

Elaeodendron buchananii
Hippocratea goetzei
Maytenus acuminata
Maytenus senegalensis
Maytenus sp
Mystroxydon aethiopicum

ICACINACEAE

Apodytes dimidiata

OLACACEAE

Strombosia scheffleri

OPILIACEAE

Opilia amentacea

LORANTHACEAE

Englerina sp.
Erianthemum dregei

RHAMNACEAE

Gouania longispicata
Maesopsis eminii

VITACEAE

Cissus oliveri
Cyphostemma braunii
Cyphostemma nodiglandulosum
Cyphostemma sp

RUTACEAE

Clausena anisata
Diphasiopsis fadenii
Fagaropsis angolensis
Teclea nobilis
Teclea simplicifolia
Teclea trichocarpa
Toddalia asiatica
Vepris sp

SIMAROUBACEAE

Brucea antidysenterica

MELIACEAE

Ekebergia capensis
Lepidotrichilia volkensii
Turraea holstii
Turraea robusta

SAPINDACEAE

Allophylus abyssinicus
Allophylus ferrugineus
Allophylus rubifolius
Blighia unijugata
Dodonaea viscosa
Filicium decipiens
Haplocoelum foliolosum

MELIANTHACEAE

Bersama abyssinica

ANACARDIACEAE

Sorindeia madagascariensis

CONNARACEAE

Agelaea heterophylla
Jaundea pinnata

ARALIACEAE

Cussonia spicata
Polyscias fulva
Polyscias stuhlmanii
Schefflera myriantha

UMBELLIFERAE

Caucalis incognita
Heteromarpha trifoliolata
Peucedanum linderi
Sanicula elata

ERICACEAE

Agauria salicifolia
Philippia pallidiflora

EBENACEAE

Diospyros abyssinica

SAPOTACEAE

Aningeria adolfi-friedericii
Bequaertiodendron natalense
Chrysophyllum gorungosanun

MYRSINACEAE

Maesa lanceolata
Rapanea melanophloeos

LOGANIACEAE

Anthocleista grandiflora
Buddleia pulchella
Mostuea brunonis
Nuxia congesta
Nuxia floribunda
Strychnos henningsii
Strychnos mitis

OLEACEAE

Chionanthus mildbraedii

APOCYNACEAE

Acokanthera oppositifolia
cf. Baissea sp.
Landolphia buchananii
cf. Pleiocarpa sp.
Rauvolfia mannii
Tabernaemontana stapfiana

ASCLEPIADACEAE

Ceropegia sp.
Pentarrhinum cf. insipidum
Secamone punctulata
Secamone sp.
Tecazzea galaetogaga
cf. Tylophora sp.
Unidentified

RUBIACEAE

Anthospermum herbaceum
Aulacocalyx diervillioides
Canthium oligocarpum

Chassalia discolor
Chassalia parviflora
Coffea fadenii
Cremaspora triflora
Galiniera coffacoides
Galium brenanii
Galium spurium
Keetia gueinzii
Lasianthus kilimandscharicus
Mitragyne rubrostipulata
Oxyanthus speciosus
Oxyanthus goetzei
Pauridiantha paucinervis
Pavetta crebrifolia
Pavetta sp.
Pentas hindsioides
Pentas lanceolata
Pentas pubiflora
Pentas schimperana
Pentas zanzibarica
Psychotria crassipetala
Psychotria lauraceae
Psychotria petiti
Psychotria sp. aff
Psychotria pseudoplatyphylla
Psychotria riparia
Psychotria sp. B.
Psychotria sp.
Psychotria sp.
Psydrax parviflora
Rytigynia eickii
Rytigynia uhligii
Spermaceoce princeae
Tricalysia ovalifolia
Vangueria volkensii
Vangueria sp.

COMPOSITAE

Adenostemma mauritianum
Anisopappus oliveranus
Bidens taitensis
Blumea brevipes
Crassocephalum mannii
Microglossa cf. pyrifolia
Senecio cf. mirabilis
Senecio syringifolius
Vernonia auriculifera

Vernonia holstii
Vernonia jugalis
Vernonia usambarensis
Vernonia sp.
Vernonia sp. aff. *urticifolia*

LOBELIACEAE

Lobelia gibberoa

BORAGINACEAE

Ehretia cymosa
Paracynoglossum geometricum

SOLANACEAE

Solanum aculeatissimum
Solanum giganteum
Solanum indicum
Solanum schumannianum
Solanum terminale

CONVULVULACEAE

Ipomoea involucreta
Ipomoea wightii

SCROPHULARIACEAE

Alectra sessiliflora
Veronica abyssinica

GESNERIACEAE

Saintpaulia teitensis
Streptocarpus caulescens
Streptocarpus glandulosissimus
Streptocarpus kirkii
Streptocarpus montanus

ACANTHACEAE

Crossandra friesiorum
Crossandra tridentata
Isoglossa gregorii
Isoglossa lactea
Isoglossa laxa
Isoglossa substrobilina
Justicia pseudorungia
Phaulopsis imbricata
Thunbergia alata

VERBENACEAE

Clerodendrum capitatum
Clerodendrum johnstonii
Clerodendrum sp.
Lippia ukambensis
Vitex keniensis
Vitex strickeri

LABIATAE

Accolanthus densiflorus
Plectranthus laxiflorus
Plectranthus langipes
Plectranthus cf. *sereti*
Plectranthus sp.

Solenostemon sylvaticus

Stachys aculeolata

ONCOTYLEDONES

COMMELINACEAE

Anellema aequinoctiale
Anellema leiocaula
Commelina benghalensis

MUSACEAE

Ensete ventricosum

ZINGIBERACEAE

Aframomum angustifolium

LILIACEAE

Asparagus asparagoides
Asparagus falcatus
Asparagus setaceus
Chlorophytum comosum
Chlorophytum limurense
Chlorophytum sparsiflorum
Dracaena afromontana
Dracaena laxissima
Dracaena steudneri

SIMILACACEAE

Smilax kraussiana

ARACEAE

Culcasia falcifolia

LEMNACEAE

Wolffia arrhiza

AMARYLLIDA

Scadoxus multiflorus

DIOSCOREACEAE

Dioscorea asteriscus

PALMAE

Phoenix reclinata

BURMANNIACEAE

Gymnosiphon usambaricus

ORCHIDACEAE

Angraecum cf. *sacciferum*
Bulbophyllum intertextum
Calanthe sylvatica

Cheirostylis lepida
Cynorkis sp.
Disperis nemorosa
Eulophia streptopetalum
Platylepis grandulosa
Polystachya albescens
Polystachya caespitifica
Polystachya cultriformis
Polystachya lindblomii
Polystachya spatella
Polystachya transvaalensis
Polystachya sp.
Polystachya sp.
Stolzia repens
Tridactyle cruciformis
Ypsilopus sp.

CYPERACEAE

Carex castanostachya
Cyperus maranguensis
Cyperus pseudoleptocladus
Mariscus sp.

GRAMINEAE

Digitaria pearsonii
Ehrharta erecta
Hyparrhenia cymbaria
Isachne mauritania
Melinis minutiflora
Oplismenus undulatifolius
Panicum calvum
Panicum trichocladum
Pennisetum trachyphyllum
Pseudechinolaena polystachya
Pseudobromus sylvaticus
Setaria plicatilis
Setaria poiretiana
Sporobolus natalensis



Termitomyces clypeatus
(Edible Mushroom)

Birds of the Taita Hills (above 1,200m asl)

Family and common name	Scientific name	
Numididae: guinea fowl		
Crested Guinea fowl	<i>Guttera pucherani</i>	LC
Phasianidae: quails, francolins, spurfowl and allies		
Harlequin Quail	<i>Coturnix delegorguei</i>	LC
Ciconiidae: storks		
Woolly-necked Stork	<i>Ciconia episcopus</i>	LC
Ardeidae: herons, egrets and bitterns		
Dwarf Bittern	<i>Ixobrychus sturmii</i>	LC
Grey Heron	<i>Ardea cinerea</i>	LC
Scopidae: Hamerkop		
Hamerkop	<i>Scopus umbretta</i>	LC
Falconidae: falcons		
Common Kestrel	<i>Falco tinnunculus</i>	LC
Sooty Falcon	<i>Falco concolor</i>	NT
Eurasian Hobby	<i>Falco subbuteo</i>	LC
African Hobby	<i>Falco cuvieri</i>	LC
Lanner Falcon	<i>Falco biarmicus</i>	LC
Peregrine Falcon	<i>Falco peregrinus</i>	LC
Taita Falcon	<i>Falco fasciinucha</i>	NT
Accipitridae: diurnal birds of prey other than falcons		
Bat Hawk	<i>Macheiramphus alcinus</i>	LC
Black Kite	<i>Milvus migrans</i>	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	EN
Hooded Vulture	<i>Necrosyrtes monachus</i>	EN
Lappet-faced Vulture	<i>Torgos tracheliotus</i>	VU
Black-chested Snake Eagle	<i>Circaetus pectoralis</i>	LC
Brown Snake Eagle	<i>Circaetus cinereus</i>	
Southern Banded Snake Eagle	<i>Circaetus fasciolatus</i>	NT
Pallid Harrier	<i>Circus macrourus</i>	NT
African Harrier Hawk	<i>Polyboroides typus</i>	
African Goshawk	<i>Accipiter tachiro</i>	LC
Little Sparrowhawk	<i>Accipiter minullus</i>	LC
Rufous-breasted Sparrowhawk	<i>Accipiter rufiventris</i>	LC
Great Sparrowhawk	<i>Accipiter melanoleucus</i>	
Common Buzzard	<i>Buteo buteo</i>	LC
Mountain Buzzard	<i>Buteo oreophilus</i>	LC
Augur Buzzard	<i>Buteo augur</i>	LC
Tawny Eagle	<i>Aquila rapax</i>	LC
Verreaux's Eagle	<i>Aquila verreauxii</i>	LC
Wahlberg's Eagle	<i>Aquila wahlbergi</i>	LC
African Hawk Eagle		LC
Martial Eagle	<i>Polemaetus bellicosus</i>	NT
Long-crested Eagle	<i>Lophaelus occipitalis</i>	LC
Crowned Eagle	<i>Stephanoaetus coronatus</i>	EN

Rallidae: rails and relatives		
Buff-spotted Flufftail	<i>Sarothrura elegans</i>	LC
Black Crake	<i>Amaurornis flavirostra</i>	LC
Columbidae: pigeons and doves		
African Olive Pigeon	<i>Columba arquatrix</i>	LC
Lemon Dove	<i>Aplopelia larvata</i>	LC
Red-eyed Dove	<i>Streptopelia semitorquata</i>	LC
Tambourine Dove	<i>Turtur tympanistria</i>	LC
African Green Pigeon	<i>Treron calvus</i>	LC
Musophagidae: turacos		
Hartlaub's Turaco	<i>Tauraco hartlaubi</i>	LC
Cuculidae: cuckoos and coucals		
Thick-billed Cuckoo	<i>Pachycoccyx audeberti</i>	LC
Red-chested Cuckoo	<i>Cuculus solitarius</i>	LC
Black Cuckoo	<i>Cuculus clamosus</i>	LC
Common Cuckoo	<i>Cuculus canorus</i>	LC
African Cuckoo	<i>Cuculus gularis</i>	LC
Klaas's Cuckoo	<i>Chrysococcyx klaas</i>	LC
African Emerald Cuckoo	<i>Chrysococcyx cupreus</i>	LC
Yellowbill	<i>Ceuthmochares aereus</i>	LC
White-browed Coucal	<i>Centropus superciliosus</i>	LC
Strigidae: typical owls		
African Wood	<i>Owl Strix woodfordii</i>	LC
Caprimulgidae: nightjars		
Freckled Nightjar	<i>Caprimulgus tristigma</i>	LC
Apodidae: swifts		
Scarce Swift	<i>Schoutedenapus myoptilus</i>	LC
African Palm Swift	<i>Cypsiurus parvus</i>	LC
Alpine Swift	<i>Tachymartia melba</i>	LC
Mottled Swift	<i>Tachymartia aequatorialis</i>	LC
Common Swift	<i>Apus apus</i>	LC
African Black Swift	<i>Apus barbatus</i>	LC
Little Swift	<i>Apus affinis</i>	LC
Coliidae: mousebirds		
Speckled Mousebird	<i>Colius striatus</i>	LC
Trogonidae: trogons		
Narina Trogon	<i>Apaloderma narina</i>	LC
Alcedinidae: kingfishers		
Grey-headed Kingfisher	<i>Halcyon leucocephala</i>	LC
Brown-hooded Kingfisher	<i>Halcyon albiventris</i>	LC
African Pygmy Kingfisher	<i>Ceyx pictus</i>	LC
Malachite Kingfisher	<i>Alcedo cristata</i>	LC
Meropidae: bee-eaters		
Eurasian Bee-eater	<i>Merops apiaster</i>	LC
Bucerotidae: hornbills		
Silvery-cheeked Hornbill	<i>Bycanistes brevis</i>	LC

Capitonidae: barbets and tinkerbirds		
White-eared Barbet	<i>Stactolaema leucotis</i>	LC
Moustached Tinkerbird	<i>Pogoniulus leucomystax</i>	LC
Yellow-rumped Tinkerbird	<i>Pogoniulus bilineatus</i>	LC
Red-fronted Tinkerbird	<i>Pogoniulus pusillus</i>	LC
Spot-flanked Barbet	<i>Tricholaema lacrymosa</i>	LC
Brown-breasted Barbet	<i>Lybius melanopterus</i>	LC
Indicatoridae: honeyguides		
Wahlberg's Honeybird	<i>Prodotiscus regulus</i>	
Lesser Honeyguide	<i>Indicator minor</i>	LC
Scaly-throated Honeyguide	<i>Indicator variegatus</i>	LC
Platysteiridae: batises, wattle-eyes and relatives		
Chin-spot Batis	<i>Batis molitor</i>	
Black-throated Wattle-eye	<i>Platysteira peltata</i>	LC
Malaconotidae: helmetshrikes, bushshrikes, tchagras and puffbacks		
Grey-headed Bushshrike	<i>Malaconotus blanchoti</i>	LC
Black-fronted Bushshrike	<i>Chlorophoneus nigrifrons</i>	LC
Sulphur-breasted Bushshrike	<i>Chlorophoneus sulfureopectus</i>	LC
Brown-crowned Tchagra	<i>Tchagra australis</i>	LC
Black-crowned Tchagra	<i>Tchagra senegalus</i>	LC
Black-backed Puffback	<i>Dryoscopus cubla</i>	LC
Slate-coloured Boubou	<i>Laniarius funebris</i>	LC
Campephagidae: cuckooshrikes		
Grey Cuckooshrike	<i>Coracina caesia</i>	LC
Laniidae: shrikes		
Taita Fiscal	<i>Lanius dorsalis</i>	LC
Common Fiscal	<i>Lanius collaris</i>	LC
Oriolidae: orioles		
African Golden Oriole	<i>Oriolus auratus</i>	LC
Dicruridae: drongos		
Common Drongo	<i>Dicrurus adsimilis</i>	
Monarchidae: monarch flycatchers		
Blue-mantled Crested Flycatcher	<i>Trochocercus cyanomelas</i>	LC
African Paradise Flycatcher	<i>Terpsiphone viridis</i>	LC
Corvidae: crows and allies		
Pied Crow	<i>Corvus albus</i>	LC
White-necked Raven	<i>Corvus albicollis</i>	LC
Paridae: tits		
White-bellied Tit	<i>Parus albiventris</i>	LC
Hirundinidae: saw-wings, swallows and martins		
White-headed Saw-wing	<i>Psalidoprocne albiceps</i>	LC
Black Saw-wing	<i>Psalidoprocne pristoptera</i>	LC
Barn Swallow	<i>Hirundo rustica</i>	LC
Rock Martin	<i>Ptyonoprogne fuligula</i>	LC
Common House Martin	<i>Delichon urbicum</i>	LC
Lesser Striped Swallow	<i>Cecropis abyssinica</i>	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	LC

Cisticolidae: cisticolas and allies

Singing Cisticola	<i>Cisticola cantans</i>	LC
Rock-loving Cisticola	<i>Cisticola aberrans</i>	LC
Tiny Cisticola	<i>Cisticola nanus</i>	LC
Tawny-flanked Prinia	<i>Prinia subflava</i>	LC
Bar-throated Apalis	<i>Apalis thoracica</i>	LC
Taita Apalis	<i>Apalis fuscigularis</i>	CR
Black-headed Apalis	<i>Apalis melanocephala</i>	LC
Grey-backed Camaroptera	<i>Camaroptera brachyura</i>	

Pycnonotidae: bulbuls

Common Bulbul	<i>Pycnonotus barbatus</i>	LC
Mountain Greenbul	<i>Andropadus nigriceps</i>	LC
Stripe-cheeked Greenbul	<i>Andropadus milanjensis</i>	LC
Little Greenbul	<i>Andropadus virens</i>	LC
Zanzibar Greenbul	<i>Andropadus importunus</i>	
Yellow-bellied Greenbul	<i>Chlorocichla flaviventris</i>	LC
Cabanis's Greenbul	<i>Phyllastrephus cabanisi</i>	LC
Eastern Nicator	<i>Nicator gularis</i>	LC

Sylviidae: Old World warblers

Evergreen Forest Warbler	<i>Bradypterus lopezi</i>	LC
Lesser Swamp Warbler	<i>Acrocephalus gracilirostris</i>	LC
Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	LC
Eastern Olivaceous Warbler	<i>Hippolais pallida</i>	LC
Dark-capped Yellow Warbler	<i>Chloropeta natalensis</i>	LC
Yellow-throated Woodland Warbler	<i>Phylloscopus ruficapilla</i>	LC
Willow Warbler	<i>Phylloscopus trochilus</i>	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	LC
Blackcap	<i>Sylvia atricapilla</i>	LC
Garden Warbler	<i>Sylvia borin</i>	LC
Barred Warbler	<i>Sylvia nisoria</i>	LC
Common Whitethroat	<i>Sylvia communis</i>	LC

Timaliidae: illadopses, babblers and chatters

African Hill Babbler	<i>Pseudoalcippe abyssinica</i>	LC
Zosteropidae: white-eyes		
Abyssinian White-eye	<i>Zosterops abyssinicus</i>	LC
Taita White-eye	<i>Zosterops silvanus</i>	

Sturnidae: starlings and oxpeckers

Greater Blue-eared Starling	<i>Lamprotornis chalybaeus</i>	LC
Superb Starling	<i>Lamprotornis superbus</i>	LC
Abbott's Starling	<i>Cynniricinclus femoralis</i>	VU
Violet-backed Starling	<i>Cynniricinclus leucogaster</i>	LC
Red-winged Starling	<i>Onychognathus morio</i>	LC
Sharpe's Starling	<i>Pholia sharpii</i>	LC

Turdidae: thrushes

Orange Ground Thrush	<i>Zoothera gurneyi</i>	LC
Taita Thrush	<i>Turdus helleri</i>	CR

Muscicapidae: chats, wheatears and Old World flycatchers

White-starred Robin	<i>Pogonocichla stellata</i>	LC
Thrush Nightingale	<i>Luscinia luscinia</i>	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	LC
Cape Robin Chat	<i>Cossypha caffra</i>	LC
Rüppell's Robin Chat	<i>Cossypha semirufa</i>	LC
White-browed Robin Chat	<i>Cossypha heuglini</i>	LC
Red-capped Robin Chat	<i>Cossypha natalensis</i>	LC
Spotted Palm Thrush	<i>Cichladusa guttata</i>	LC
Bearded Scrub Robin	<i>Cercotrichas quadrivirgata</i>	LC
Common Stonechat	<i>Saxicola torquatus</i>	LC
Mocking Cliff Chat	<i>Thamnolaea cinnamomeiventris</i>	LC
Southern Black Flycatcher	<i>Melaenornis pammelaina</i>	LC
Pale Flycatcher	<i>Bradornis pallidus</i>	LC
African Grey Flycatcher	<i>Bradornis microrhynchus</i>	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	LC
Ashy Flycatcher	<i>Muscicapa caerulescens</i>	LC
African Dusky Flycatcher	<i>Muscicapa adusta</i>	LC
Lead-coloured Flycatcher	<i>Myioparus plumbeus</i>	LC

Nectariniidae: sunbirds

Collared Sunbird	<i>Hedydipna collaris</i>	LC
Olive Sunbird	<i>Cyanomitra olivacea</i>	LC
Amethyst Sunbird	<i>Chalcomitra amethystina</i>	LC
Hunter's Sunbird	<i>Chalcomitra hunteri</i>	LC
Eastern Double-collared Sunbird	<i>Cinnyris mediocris</i>	LC
Variable Sunbird	<i>Cinnyris venustus</i>	LC

Passeridae: sparrow weavers, Old World sparrows and petronias

House Sparrow	<i>Passer domesticus</i>	LC
Kenya Rufous Sparrow	<i>Passer rufocinctus</i>	LC
Grey-headed Sparrow	<i>Passer griseus</i>	LC

Ploceidae: weavers, bishops and widowbirds

Grosbeak Weaver	<i>Amblyospiza albifrons</i>	LC
Baglafaecht Weaver	<i>Ploceus baglafaecht</i>	LC
Spectacled Weaver	<i>Ploceus ocularis</i>	LC
Eastern Golden Weaver	<i>Ploceus subaureus</i>	
Holub's Golden Weaver	<i>Ploceus xanthops</i>	LC
Village Weaver	<i>Ploceus cucullatus</i>	LC
Yellow Bishop	<i>Euplectes capensis</i>	LC

Estrildidae: waxbills

Yellow-bellied Waxbill	<i>Coccyzygia quartinia</i>	
Green-backed Twinspot	<i>Mandingoa nitidula</i>	LC
Common Waxbill	<i>Estrilda astrild</i>	LC
Red-cheeked Cordon-bleu	<i>Uraeginthus bengalus</i>	LC
Purple Grenadier	<i>Granatina ianthinogaster</i>	LC
Peters's Twinspot	<i>Hypargos niveoguttatus</i>	LC
African Firefinch	<i>Lagonosticta rubricata</i>	LC
Jameson's Firefinch	<i>Lagonosticta rhodopareia</i>	LC
Bronze Mannikin	<i>Spermestes cucullatus</i>	LC
Black-and-white Mannikin	<i>Spermestes bicolor</i>	LC

Viduidae: Parasitic Weaver, indigobirds and whydahs		
Pin-tailed Whydah	<i>Vidua macroura</i>	LC
Motacillidae: wagtails, longclaws and pipits		
Grey Wagtail	<i>Motacilla cinerea</i>	LC
Mountain Wagtail	<i>Motacilla clara</i>	LC
African Pied Wagtail	<i>Motacilla aguimp</i>	LC
Long-billed Pipit	<i>Anthus similis</i>	LC
Tree Pipit	<i>Anthus trivialis</i>	LC
Striped Pipit	<i>Anthus lineiventris</i>	LC
Fringillidae: canaries, citrils, seedeaters and relatives		
Reichenow's Seedeater	<i>Crithagra reichenowi</i>	LC

STATUS

LC= least concern

NT= near-threatened

CR= Critically endangered

VU= vulnerable

EN= endangered

Mammals of Taita Hills Forest (Above 1,200m asl)

Family and Scientific Name

Common Name

Macroscelidinae

Petrodromus tetradactylus

Four-toed Sengi

Procaviidae

Dendrohyrax arboreus

Southern Tree Hyrax

Procavia capensis

Rock Hyrax

Galagidae

Galago s. braccatus

Kenya Lesser galago

Otolemur garnettii

Small-eared Greater Galago

Galagoide sp.

Taita Mountains Dwarf Galago

Cercopithecidae

Cercopithecus mitis

Sykes's Monkey

Chlorocebus pygerythrus

Vervet Monkey

Papio cynocephalus

Yellow Baboon

Sciuridae

Heliosciurus rufobrachium

Red-legged Sun Squirrel

Paraxerus ochraceus

Ochre Bush Squirrel

Muridae

Aethomys chrysophilus

Red Veld Rat

Arvicanthis niloticus

African Grass Rat

Grammomys dolichurus

Woodland Thicket Rat

Mastomys natalensis

Natal Multimammate Mouse

Mus 1

Mus triton

Gray-bellied Pygmy Mouse

Mus minutoides

Tiny Pygmy Mouse

Pelomys

Creek Rat

Praomys taitae

Taita forest rat

Myoxidae

Graphiurus murinus

Forest African Dormouse

Graphiurus 2

Cricetomyinae

Cricetomys gambianus

Gambian Giant pouched rat

Dendromurinae

Dendromus insignis

Montane African Climbing Mouse

Dendromus 2

Hystricidae

Atherurus africanus

African Brush-tailed Porcupine

Soricidae

Crocidura olivieri

African Giant Shrew

Crocidura varia

Savanna Path Shrew

Crocidura cf. selina

Ugandan Lowland Shrew

Crocidura nigrofusca

African Black Shrew

Crocidura jacksoni

Jackson's Shrew

Crocidura hildegardeae

Hildegarde's Shrew

Crocidura fuscomurina

Bicoloured Shrew

Crocidura luna

Moonshine Shrew

Suncus aequatorius

Taita Dwarf Shrew

Sylvisorex megalura

Climbing Shrew

Pteropodidae*Epomophorus wahlbergii**Rousettus aegypticus***Rhinolophidae***Rhinolophus darlingii**Rhinolophus hildebrandtii***Molossidae***Chaerephon pumilus**Mops midas**Tadarida ventralis***Vespertilionidae***Scotoecus albigula**Neoromicia capensis**Neoromicia nana***Viverridae***Genetta tigrina***Herpestidae***Bdeogale nigripes**Galerella sanguineus**Herpestes ichneumon**Ichneumia albicauda***Mustelidae***Mellivora capensis***Suidae***Potamochoerus larvatus***Bovidae***Sylvicapra grimmia*

Wahlberg's Epauletted Fruit Bat

Egyptian Rousette

Darling's Horseshoe Bat

Hildebrandt's Horseshoe Bat

Little Free-tailed Bat

Midas Free-tailed Bat

Giant Free-tailed Bat

White-throated Lesser House Bat

Cape pipistrelle

Banana pipistrelle

Large spotted genet

Black-legged Mongoose

Slender Mongoose

Egyptian Mongoose

White-tailed Mongoose

Honey Badger

Bushpig

Common Duiker

BUTTERFLIES OF TAITA HILLS (Above 1,200m asl)

Scientific name and Family

Papilionidae

Papilio dardanus

Papilio desmondi teita

Papilio nireus

Papilio ophidicephalus

Papilio demodocus

Papilio echerioedes

Graphium colonna

Graphium polycene

Pieridae

Catopsilia florella

Colias electo

Eurema hecabe

Eurema mandarinula

Pinacopteryx eriphia

Nepheronia thalassina

Eronia cleodora

Eronia leda

Colotis regina

Colotis euippe

Belenois margaritacea

Potia helice

Dixeia pigea

Dixeia spilleri

Appias lasti

Mylothris Sagala

Mylothris ruppelli

Lycaenidae

Baliochila fragilis

Baliochila lipara

Baliochila amanica

Lachnocnema Bibulus

Myrina silenus

Lolaus Pallene

Lolaus poultoni

Deudorix antalus

Deudorix vansomerini

Lycaena phlaeas

Anthene princeps

Anthene butteri

Pseudonacaduba sichela

Lampides boeticus

Uranotauma nubifer

Uranotauma vansomereni

Uranotauma falkenstelni

Cacyreus Lingeus

Cacyreus palemon

Leptotes pirithous

Common name

Mocker Swallowtail

Desmond's Green-banded Swallowtail

Narrow Green-banded Swallowtail

Emperor Swallowtail

Citrus Butterfly

White-banded Swallowtail

Black Swordtail

Small Striped Swordtail

African emigrant

African Clouded Yellow

Common Grass yellow

Mandarin Grass yellow

Zebra White

Blue or Cambridge Vagrant

Vine Leaf Vagrant

Orange and Lemon

Queen or regal Purple Tip

Round Winged Orange

Margarita's Caper White

Meadow White

Antheap White

Spiller Yellow

Last's Albatross

Dusky Dotted Border

Rupell's Dotted Border

Amani Buff

Woolly Legs

Fig Tree Blue

Saffron Sapphire

Poulton's Sapphire

Brown Play Boy

Vansomerens's Play Boy

Small Copper

Butter's Ciliate Blue

Africa Line Blue or Dusky Blue

Pea Blue

Black Heart

Common Bush Blue

Water Geranium Blue

Common Zebra Blue

Tuxentius melaena
Zizula hylax
Eicochrysops nandianus

Nymphalidae

Danaus chrysippus
Tirumala formosa
Amauris niavius
Amauris echeria
Amauris albimaculata
Melanitis leda
Bicyclus campinus
Ypthima jacksoni
Physcaeneura leda
Neocoenyra gregorii
Charaxes veranes
Charaxes acuminatus
Charaxes candiope
Charaxes pollux
Charaxes druceanus
Charaxes bohemani
Charaxes cithaeron
Charaxes xiphares
Charaxes etesipe
Charaxes jahlusa
Charaxes baumanni
Charaxes aubyni
Charaxes ethalion
Charaxes zoolina
Euphaedra neophron
Cymothoe teita
Pseudacraea lucretia
Neptis saclava
Neptis carcassoni
Neptis goochi
Neptis aurivillii
Cyrestis camillus
Byblia anvatar
Eurytela hiarbas
Hypolimnas misippus
Salamis parhassus
Junonia oenone
Junonia hierta
Junonia sophia
Junonia natalica
Junonia terea
Precis octavia
Precis antilope
Precis archesia
Precis limnoria

Dask Pied Pierrot
Tiny Grass Blue
Cupreous Blue

Common Tiger or African Queen
Beautiful Tiger
Friar
Chief
Layman
Common Evening Brown

Pearl Charaxes
Mountain Charaxes
Green Vained Charaxes
Black Bordered Charaxes
Silver Barred Charaxes
Divebomber or Large Blue Charaxes
Blue Spotted Charaxes
Forest King Charaxes
Savana Charaxes
Pearl Spotted Charaxes
Baumann's Charaxes
Aubyn's Charaxes
Satyr Charaxes
Club-tailed Charaxes
Gold Banded forest
Taita Glider
False Diadem or False Chief
Small Spotted Sailer
Carcasson's Streaked Sailer
Small Streaked Sailer
Aurivillius' Sailer
Africa Map Butterfly
African Jocker
Pied Piper
Diadem or Danaid Eggfly
Forest Mother of Pearl
Dark Blue Pansy
Yellow Pansy
Little Commodore
Natal Pansy
Soldier Commodore
Gaudy Commodore
Darker Commodore
Garden Inspector
White-spotted Commodore

<i>Precis tugela</i>	Eared Commodore
<i>Vanessa cardui</i>	Painted Lady
<i>Antanartia dimorphica</i>	Dimorphic Admiral
<i>Lachnoptera ayresii</i>	Eastern Blotched Leopard
<i>Phalanta phalantha</i>	Common Leopard Fritillary
<i>Acraea baxteri</i>	Baxter's Acraea
<i>Acraea conradti</i>	
<i>Acraea servona</i>	
<i>Acraea pharsalus</i>	
<i>Acraea esebria</i>	Dusky Acraea
<i>Acraea lycoa</i>	
<i>Acraea johnstoni</i>	Johnston's Acraea
<i>Acraea acerata</i>	Talls Acraea
<i>Acraea zonata</i>	
<i>Acraea rabbaiae</i>	Clear Wing Acraea
<i>Acraea satis</i>	Coast Acraea
<i>Acraea zetes</i>	Large Spotted Acraea
<i>Acraea anemosa</i>	Broad Bordered Acraea
<i>Acraea insignis</i>	
Hesperiidae	
<i>Coeliades forestan</i>	Striped Policeman
<i>Coeliades pistratus</i>	Two Pip Policeman
<i>Eagris Sabadius</i>	
<i>Eretis melania</i>	
<i>Spialia spio</i>	Spio Grizzled Skipper
<i>Metisella Orientalis</i>	
<i>Kedestes rogersi</i>	Roger's Ranger
<i>Goryra bibulus</i>	
<i>Acada biseriatus</i>	Axehead Skipper
<i>Parasmodes morantii</i>	Morant's Skipper
<i>Aderos mackenii</i>	Macken's Skipper
<i>Chondrolepis telisignata</i>	
<i>Artitropa Erinnyes</i>	Bush Night Fighter
<i>Zenonia zeno</i>	Orange Spotted Skipper
<i>Borbo detecta</i>	
<i>Borbo borbonica</i>	
<i>Gegenes niso</i>	Plain Hottentot

REPTILES OF TAITA HILLS (Above 1,200m asl)

Family and Scientific Name	Common Name
Typhlopidae	
<i>Rhinotyphlops unitaeniatus</i>	Yellow-striped Blind Snake
Leptotyphlopidae	
<i>Leptotyphlops scutifrons</i>	Peters 's worm snake
Boidae	
<i>Python natalensis</i>	African Rock Python
Colubridae	
<i>Lamprophis fuliginosus</i>	Brown House Snake
<i>Lycophidion capense</i>	Cape Wolf Snake
<i>Philophannus battersbyi</i>	Battersby's Green Snake
<i>Crotaphopeltis hotamboeia</i>	White-Lipped Snake
<i>Dispholidus typus</i>	Boomslang
<i>Thelotornis usambaricus</i>	Eastern Vine Snake
<i>Elapsoidea loveridgei</i>	East Africa Garter Snake
<i>Atractaspis bibroni</i>	Bibron's Burrowing Asp
<i>Aparallactus lunulatus</i>	Plumbeous Centipede-eater
<i>Aparallactus guntheri</i>	Black centipede-eater
<i>Amblyodipsas teitana</i>	Taita Hills Purple-glossed Snake
Lizards	
Gekkonidae	
<i>Cnemaspis africana</i>	Usambara forest gecko
<i>Hemidactylus mabouia</i>	Tropical House Gecko
<i>Cnemaspis sp.</i>	
Lacertidae	
<i>Adolfus jacksonii</i>	Jackson's Forest Lizard
<i>Chamaeleonidae</i>	
<i>Chamaeleo dilepis</i>	Flap-necked Chameleon
<i>Kinyongia boehmei</i>	Taita two-horned chameleon
Scincidae	
<i>Leptosiaphos kilimense</i>	Kilimanjaro four-toed skink
<i>Mabuya striata</i>	Common striped skink
<i>Mabuya varia</i>	Variable skink
<i>Lygosoma afrum</i>	Peter's Writhing skink
<i>Lygosoma sundevalli</i>	Sundevall's Writhing Skink
Gerrhosauridae	
<i>Gerrhosaurus flavigularis</i>	Yellow Throated Plated Lizard
Agamidae	
<i>Agama agama lionatus</i>	Red-headed Rock Agama

Amphibians of Taita Hills (Above 1,200m asl)

Family and Scientific Name	Common Name
Ceaciliidae	
<i>Boulengerula niedeni</i>	Sagalla Caecilian
<i>Boulengerula taitana</i>	Taita Hills Caecilian
Pipidae	
<i>xenopus borealis</i>	Northern Clawed Frog
Bufo	
<i>Amietophrymus garmani</i>	German's Toad
<i>Amietophrymus gutturalis</i>	Guttural Toad
<i>Mertensophryne taitana</i>	Taita Dwarf Toad
Microhylidae	
<i>Phrynomantis bifasciatus</i>	
Brevicipitidae	
<i>Callulina dawida</i>	Taita Warty Frog
Hemisotidae	
<i>Hemisis marmoratus</i>	Pig-nosed Frog
Arthroleptidae	
<i>arthroleptis xenodactyloides</i>	Eastern Dwarf Squeaker
<i>Leptopelis concolor</i>	Pale Coloured Tree Frog
Hyperoliidae	
<i>Hyperolius glandicolor peters</i>	Reed Frog
<i>Hyperolius tuberilinguis</i>	
<i>Kassina senegalensis</i>	Common Bubbling Kassina
Ptychadenidae	
<i>Ptychadena anchietae</i>	Anchietta's Ridged Frog
<i>Ptychadena cf mascareniensis</i>	Mascarene Ridged Frog
Phrynobatrachidae	
<i>Phrynobatrachus scheffleri</i>	Scheffler's Puddle Frog
Pyxicephalidae	
<i>Amietia angolensis</i>	Angola River Frog
<i>Tomopterna cryptotis</i>	
Rhacophoridae	
<i>Chiromatis petersii</i>	Peter's Foam-nest Tree Frog

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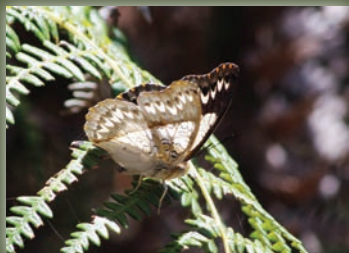
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A Guide To
TAITA HILLS
Unique Natural History



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