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MELVILLE KOPPIES NATURE RESERVE

GUIDE BOOK.

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GUIDE BOOK

Published by

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FOREWORD.

The presentation of this Guide Book marks another link in the chain of developments which will make it possible for more people to enjoy the amenities and interests provided by the Melville Koppies Nature Reserve.

This Nature Reserve, situated only three miles from the centre of Johannesburg, received official recognition in 1959 in terms of the Administrator's Proclamation No.14. This declaration stands as a tribute to the energetic and determined efforts made and to the interest shown by many people, and, in particular, by Prof. N.P. Badenhuizen, then Professor of Botany at the University of the Witwatersrand; by Councillor H.M.J. van Rensburg, the City Councillor for that area; by Dr. A.O.D. Mogg, also of the Botany Department and a keen member of the Tree Society of Southern Africa; and by Mr. J.W. du Preez, a resident of the area in which the koppies are located.

The Reserve consists of about 127 acres which lie to the East of the Muldersdrift Road. This adjoins a further 43 acres, to the West of this road, which were bequeathed to the city by the late Mr. Frans Geldenhuys. His foresight and the action of the Johannesburg City Council have helped to provide 170 acres of land which are of unique interest in this city.

Here one can still find the vegetation and the geological formations which have existed in this area for thousands of years. These koppies are part of our national heritage. The Reserve, therefore, provides a valuable introduction to the study of ecology, botany, zoology and geology, and is already being used by students of the University of the Witwatersrand and of the Johannesburg College of Education to

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further/.....

further their knowledge of Nature, and to give them opportunities in the city to do field work. For every citizen of Johannesburg it can provide relaxation and enrichment. A ramble on these koppies can bring not only the opportunity to learn about our local flora and fauna, but also pleasant exercise and the chance to enjoy scenic beauty. We hope that this Nature Reserve will also provide interests for the amateur photographer and bird-watcher and for all those who are seeking solace from the rush and pressure of city life. Here one can leave behind the blare of hooters, the scream of brakes, the rush of feet and exchange them for the peace and beauty of Nature.

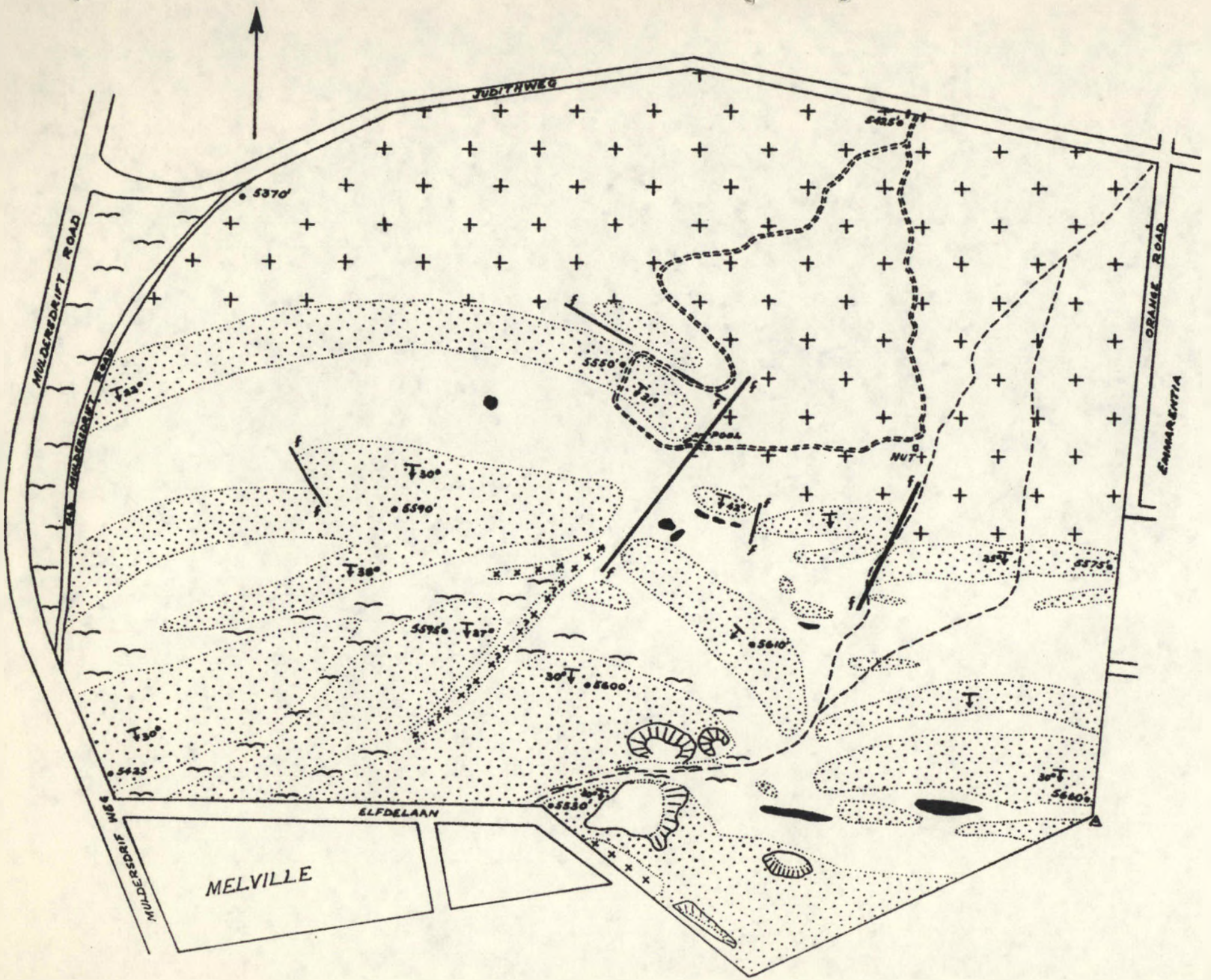
In order to make the Reserve more accessible to the public a Nature Trail has now been laid out by the Parks Department. This winds its way from the entrance in Judith Road (Emmarentia) through a small wood and up on to the rocky ridges and the grassy plateau above. From this vantage point on the koppies the view opens out over the hilly, wooded Northern suburbs of the city, across the Emmarentia Dam, to the blue expanses of the Magaliesberg mountains beyond. The trees and shrubs along the Nature Trail have been marked with their botanical and common names. For this and many other duties a tribute must be paid to the Secretary of the Johannesburg Council for Natural History, Dr. H. Friede, an indefatigable worker for the conservation of Nature, who has worked in close collaboration with the Tree Society and members of the staff of the Botany Department of the University of the Witwatersrand. Signs draw the attention of visitors to the interesting botanical and educational features. A wide variety of birds inhabit the area through which the trail passes.

We/.....

We should like to thank all those who have contributed to this publication. All are experts in their particular fields. We trust that this Guide Book, which will also be translated into Afrikaans, and which we hope to publish in a more permanent form at a later date, may make the Melville Koppies Nature Reserve better known to the citizens of Johannesburg. Whatsoever you may seek, depend upon it you will find sympathy in the spirit of the koppies. It is a kind and gentle spirit, a friendly spirit, companionable and serene. A visit will help to lift one out of the feeling so aptly described by Wordsworth when he wrote:

"The World is too much with us, late and soon,
Getting and spending, we lay waste our powers;
Little we see in Nature that is ours;
We have given our hearts away, a sordid boon."

Irene M. Sturgess.Ph.D.,M.Sc.
(Chairman, Johannesburg Council of
Natural History.)



LEGEND — LEGENDE

ALLUVIUM		ALLUVIUM
DIABASE		DIABAAS
SHALE		SKALIE
QUARTZITE		KWARTSIET
DIORITE		DIORIET
QUARTZ VEIN		KWARTS AAR
FAULT		VERSKUIWING
DIP OF STRATA	/ 25°	HELLING VAN LAA
QUARRY		STEENGROEF
NATURE TRAIL		NATUURPAD
FOOTPATH		VOETPAATJIE
ELEVATION IN FEET	5610'	HOOGTE BO SEËSPIEGEL IN VOET

0 100 200 YARDS
SCALE / SKAAL

GEOLOGICAL SKETCH MAP OF THE MELVILLE KOPPIES NATURE RESERVE

GEOLOGIESE SKETSKAART VAN DIE NATUURRESERVAAT

THE GEOLOGY OF THE MELVILLE KOPPIES NATURE RESERVE

by W.J. van Biljon Ph.D., M.Sc.

A long time ago, probably about 2500 million years, a large inland lake existed in the Southern Transvaal and Northern Orange Free State. From high mountains on the fringes of this lake pebbles, sand and mud, together with small amounts of minerals such as gold and uraninite, were washed into the lake until a vast thickness of nearly 25,000 feet of material had accumulated on a "floor" of archean granite. The centre of the lake gradually subsided so that the edges were upturned (like a saucer). As a result of the great weight of overlying material the original mud, sand and pebbles were compacted into hard rocks known as shale, quartzite and conglomerate, respectively. The rocks forming the northern rim of this basin are today exposed at the surface from Springs to Randfontein and are known to continue, under cover of younger formations, as far as Klerksdorp, from where the ridge swings to the south into the Orange Free State. The group of rocks are collectively known as the Witwatersrand System.

The quartzites, being composed mainly of the mineral quartz, are the most resistant to weathering and therefore usually form ridges. The shales on the other hand are soft and tend to occupy the valleys. The conglomerates, in which most of the gold and uraninite occur, form only thin bands, known as "reefs", fairly high up in the succession where they are being mined for their economic mineral content.

In the/.....

In the Melville Koppies Nature Reserve the "floor" and the lowermost rocks of the Witwatersrand System can be seen. The rock on to which this System was deposited is normally granite but in this particular area the "floor" is formed by diorite, a rock composed essentially of felspar and amphibole with no quartz. This rock weathers very readily to a deep red soil with the result that the actual rock type can not be seen in the Reserve. Examples are abundant however at many places in Emmarentia, Roosevelt Park and Linden. In the Reserve, the slope, which leads up from Judith Road to the foot of the ridge, is underlaid by this diorite. Near the bottom of the slope the colour of the soil is distinctly red and clayey but as one approaches the ridge it becomes more sandy as a result of contamination with sand derived from the quartzite. Many pebbles of white vein quartz, as well as boulders of quartzite with a sugary texture, have also rolled down the slope. The colour of these rocks is often brown as a result of a coating of iron oxide.

The higher portion of the Reserve is formed by alternating bands of quartzite and shale which dip at angles varying from 25° to 42° to the south. These rocks, as a result of later earth movements, have been extensively faulted and disturbed so that in places only isolated remnants of original quartzite bands remain. Vein quartz, and sometimes dense red mylonite (crushed rock), is usually well developed in the vicinity of these faults.

The quartzite is normally white to pinkish in colour but may be brown on the surface as a result of iron staining. Original sedimentary structures like ripple marks and cross-bedding are not well developed but may be observed in a few places.

The shale/.....

The shale, being soft, does not outcrop very often but small chips can usually be seen in the soil, especially where moles have been at work! The shale varies in colour from light grey, blue grey, green to pink, pinkish brown and deep brown, while, where the nature trail crosses the lowermost quartzite, an unusual khaki-coloured variety can be seen.

During the period of faulting a certain amount of diabase intrusion also took place. In the extreme south of the Reserve, near the big bluegum trees, some boulders of diabase are found near the road, but it is not certain whether these are in place or have been dumped there.

Just above the second main quartzite ridge from the bottom, and near the centre of the area, some boulders of diabase can be seen in the soil. Unfortunately this rock also weathers very readily and the extent of the diabase cannot be determined From the nature of the soil, however, it is quite likely that several dykes of diabase cut through the main quartzite in the south western portion of the area.

NOTES ON THE NAMING OF PLANTS

By M.M. MacNae.

For Botanical field work the common names of plants are often useful to know, but for any accurate study it is essential to determine and use the correct Latin names.

Plants have two names. The genus applies to a group of closely related plants such as the many different kinds of South African thorn tree known as Acacia. These all have flowers and pods of basically similar structure. Their common features are characteristic of the genus.

Genera are divided into a number of distinct species, each one differing from the others in certain recognisable respects. Acacia caffra has feathery leaves arranged spirally round the stem, Acacia robusta has shorter, stiffer leaves growing in tufts from above conspicuous stem nodules. Both these species occur in the Reserve, and it should be possible to compile a list of specific differences between them. The size and shape of the pods are distinctive. The arrangement and appearance of thorns on the stems is also characteristic in each species. Flowers, if present, will be found to grow in soft creamy spikes in one case, and they are massed in golden-yellow heads in the other.

It is customary to acknowledge the author who first publishes a valid name and description of any species by appending his name (often abbreviated). In this way it is indicated that Acacia robusta Burch. was first described in 'Travels' by Burchell, an early explorer of the Cape who collected and named many of our wild plants.

This/.....

This binomial system (giving plants a generic and a specific name) has been in general use since the 18th century, when Linnaeus published his 'Species Plantarum', a book in which every plant then known in the world was given a name and a brief description. This immense work has formed the basis on which all modern nomenclature has been built. His classification of genera into groups with similar numbers of flower parts has been abandoned and related genera are now grouped into Families.

Families are arranged in an order dependent on the system of classification adopted. The Linnaean concept of a genus and a species is still, however, accepted throughout the world.

WHERE DO PLANTS GROW?

It is rare to find one kind of plant growing in all parts of the reserve, for there are many factors that can limit the distribution of each species. The nature of the soil is often very important. Its depth, water-content, composition, acidity and origin vary from place to place, and all these variations affect the plants, which have different degrees of tolerance for the conditions in which they develop.

Some species will only be found on soil of a particular origin. The flourishing woodland of thorn trees on the North West slope has grown up on the reddish clay soil that is typically formed from the decomposition of diorite rocks. These trees belong to the species Acacia robusta Burch., and they do not occur on the shales or quartzite ridges of the reserve. A closely related tree, Acacia caffra Willd. grows best on the rocky ridges, but also occurs on the lower slopes.

Protea caffra Meisn. is one of the few trees that can grow on the upper grassy plateaux where there are soft shales below the shallow surface soil. Large Protea plants are rare on the quartzite outcrops and there are none among the trees of Acacia robusta below. Bushes of Buddleia salvifolia Lam. grow in different parts of the reserve, but they flourish only where the soil is deep and moist.

Climate is often the most important factor determining the extent to which any particular wild species will be spread over the country. In the small area of this reserve, rainfall and altitude can be considered as uniform, but there are noticeable differences in the actual climatic conditions of the north and south aspects of the koppies. The variations

experienced/.....

experienced by the plants in hours of sunshine, temperature and humidity may be sufficient to limit the distribution of some species to one slope or another. This is illustrated by the case of Psammotropha myriantha Sond. whose cushion-like tufts are confined to the shady south side of the koppies. Aloe davyana Schonl. on the other hand, grows in all parts of the reserve, but it is most abundant on the sunny north slope.

Lastly, account must be taken of the fact that, where a variety of different kinds of plants are growing together in close proximity, they will affect one another to a considerable extent. Usually one kind of plant becomes most abundant, giving a characteristic appearance to the area that it dominates. The dominant plants may be all of one species, like the woodland of Acacia robusta trees on the north slopes. Sometimes several closely related species combine to form a particular type of vegetation, such as the many kinds of perennial tufted grasses that make up the grasslands of the reserve. The areas of bush and forest have many different kinds of trees and shrubs growing together, but no one species predominates at the expense of the others. Whatever form the dominant vegetation may take, there is usually with it, a wide variety of other kinds of plants. This is clearly seen in the grasslands in spring when bright little flowers, such as the different species of Hypoxis, Indigofera and Vernonia carpet the ground. These plants only flourish in the open veld, and actually benefit from occasional burning.

Well established areas of bush and forest afford protection from sun and frost to several kinds of small plants that make up a distinctive herb layer of the forest flora.

A common/.....

A common forest plant of the north slope is the succulent-leafed, red-flowered Kalanchoe rotundifolia Harv. Shade-loving plants such as this are seldom found in the open grasslands.

Since each species is found to grow best in one particular type of locality, as a corollary each area, if left undisturbed, becomes inhabited by its own characteristic form of plant community. After fire, ploughing, grazing or other disturbances, there is a gradual building up of plant associations till each area has the most complex community which it is capable of supporting. This is the climax vegetation for each locality.

The grasslands with isolated clumps of bushes are typical of large tracts of the country with a good summer rainfall. Fires and grazing maintain the vegetation at this level, but the patches of bush are invaders of the bush or forest flora, that if left undisturbed tend to spread over the grasslands of the highveld. Where there is protection and sufficient soil and moisture, trees and shrubs have formed dense patches of bush or forest. These are most often found in ravines, and hugging the cliffs and rocky ridges of mountain slopes. Many of the species are common, and wide-spread, their fruits and seeds being freely distributed by wind or birds, but some are rare, and easily eradicated from an area such as this small reserve. It takes hundreds or even thousands of years to establish indigenous forests such as the first settlers found when they came to this part of the country. Other areas of natural vegetation are fast disappearing from the Witwatersrand, and this site may soon be unique. For these reasons it is most important that the reserve should

be/.....

be protected from all the destructive forces of civilisation that beset it. Here through the changing seasons of the year, the prettiest flowers of the grasslands, and some of the most rare and interesting trees and shrubs of the South African flora are ours to study and to preserve for prosperity.

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4594/.....

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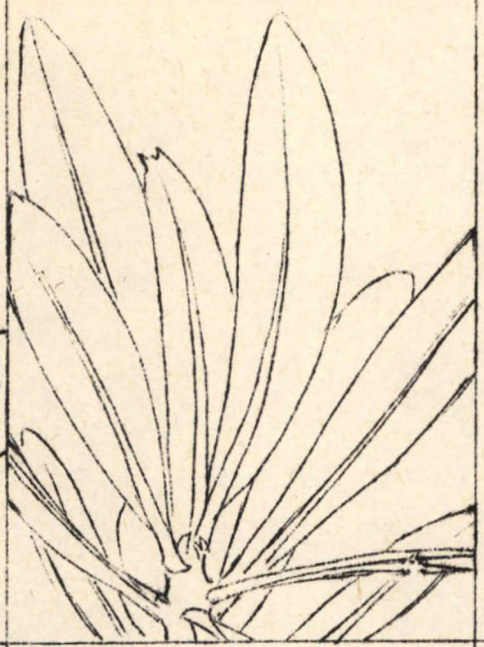
PLATE I

1898 Celtis africana Burm.

2035 Protea caffra Meisn.



2108 Osyris compressa (Berg.) A.DC.

3252
Pittosporum viridiflorum Sims

3446
Acacia caffra Willd.

3446
Acacia robusta Burch.

3702
Indigofera melanadenia Benth.

3791
Mundulea sericea (Willd.) A.Chev.

3991
Fagara magalismontana Eng.

PLATE IL

4594
Rhus discolor E.Mey

4594
Rhus pyroides Burch.

4394
Rhus eckloniana Sond.

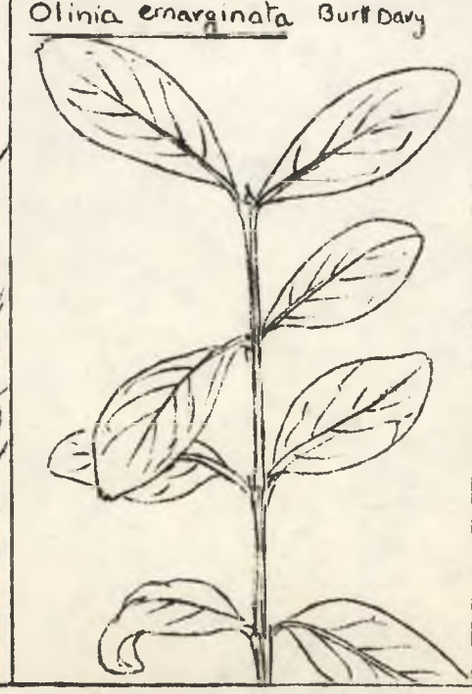
4626
Maytenus polyacanthus (Sond.) Marr

4861
Ziziphus mucronata Willd.

5053
Dombeya rotundifolia Harv.

5296
Kiggelaria africana L

5428
Olinia emarginata Burtt Davy



6313
Myrsine africana

PLATE II

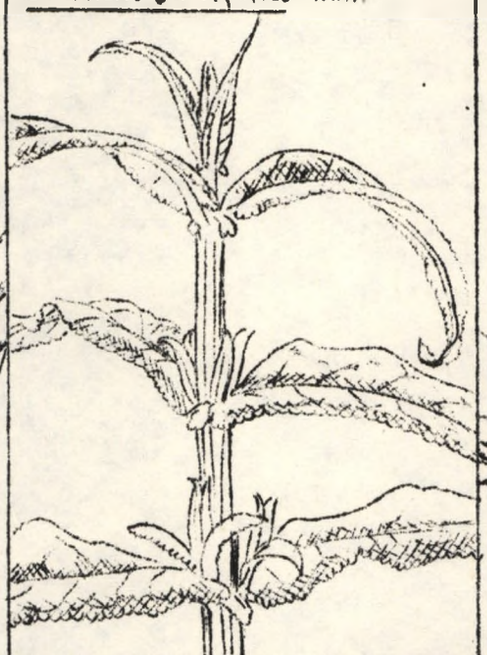
6377
Bequaertiodendron magalismontanum (Sond.) Heine & Heinsley

6403
Royena lycioides (Desf.) A.DC. ssp. guerkei

6404
Burlea crispa (Thunb.) Sond. var. crispa

6434
Olea africana Mill.

6473
Buddleia salvifolia Lam.



6559
Carissa bispinosa (L.) Desf.

6562
Ancylobothrys capensis (Oliv.) Pichon

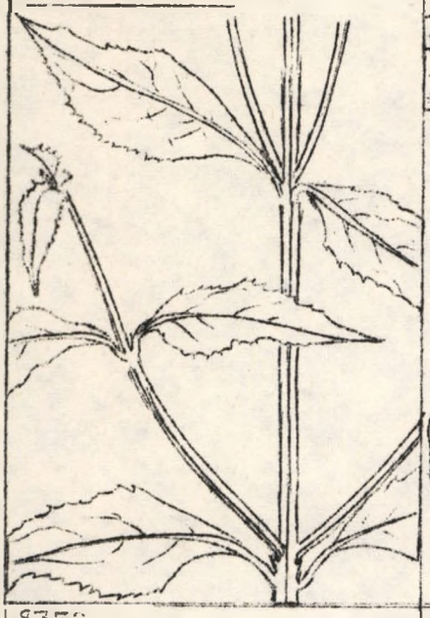
7043
Ehretia rigida (Thunb.) Druce

7145
Lippia javanica (Burm. f.) Spreng.

mm

PLATE IV

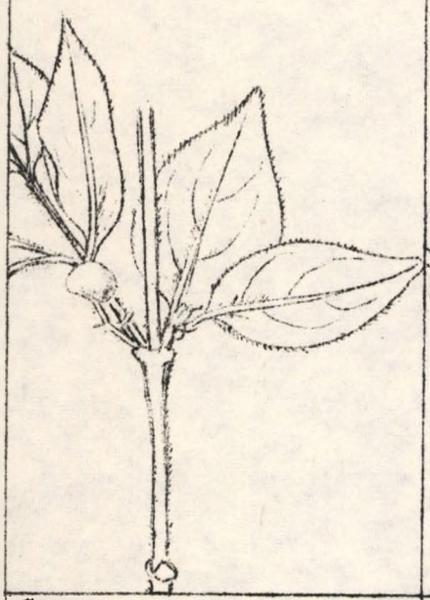
7493
Halleria lucida L.



8351
Vanqueria infausta Burch.

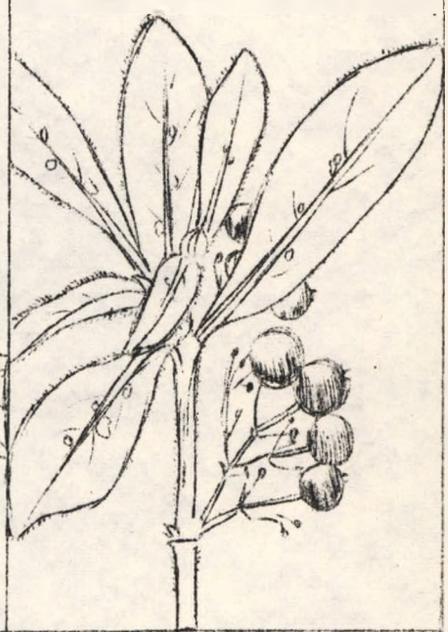
8351c
Tapiphyllum parvifolium (Sond.) Robyns

8352.
Canthium gilfillani (N.E.Br.) N.E.Br.



8352
Canthium mundtianum Cham. Schl.

8383
Pavetta assimilis Sond.



8936
Brachylaena rotundata S.Moore

9370
Brachymeris athanasioides Hutch.

9401
Lopholaena coriifolia (Sond.) Phill. & Smith.

mm

COMMON TREES AND SHRUBS OF MELVILLE KOPPIES NATURE RESERVE.

by M.M.Macnae. B.Sc.

Philips retained the internationally recognised serial numbers given in the genera of "South African Flowering Plants" published in 1926, and revised in 1959. These internationally recognised numbers of genera are given for the plants found in the Reserve which are described below e.g. Celtis africana has the serial number 1898. These numbers are also printed on the labels placed on those trees in the Reserve which have been named.

Family 62. ULMACEAE (Elm family).

1898 Celtis africana Burm.f. 'Witstinkhout', 'White Stinkwood'. (= C. rhamnifolia Presl. in Fl. Cap.)
Deciduous tall tree of the lower N. and N.W. slopes. Leaves slightly oblique; flowers inconspicuous; fruits small dry drupes, bird disseminated.

Family 66 PROTEACEAE

2035 Protea caffra Meisn. 'Transvaal Suikerbos', 'Transvaal Sugarbush'.
Evergreen bush or tree, common above the quartzite ridges, at the junction with the shales. Scattered bushes occur on the shale plateaux. Flower heads are creamy or pink; fruits are long-haired, wind-distributed.

Family 69 SANTALACEAE.

2108 Osyris compressa (Berg.) A.DC. 'Bergbas'.
(= O. abyssinica Hochst. in Fl. Cap.)
Evergreen tall shrub, common on lower slopes at the margins of areas of bush and forest. Flowers inconspicuous, greenish; fruits small, succulent, orange bird disseminated. Bark used by Voortrekkers for tanning hides.

Family 118/....

Family 118. PITTOSPORACEAE

3252 Pittosporum viridiflorum Sims, 'Kasuur'.
Evergreen shrub or tree on the quartzite ridges. Flowers sub-umbellate, pale yellow, sweet-scented; fruit a hard globose capsule; seeds reddish, bird disseminated. Cultivated as garden shrub.

Family 128. LEGUMINOSAE Sub-family MIMOSACEAE.

3446 Acacia caffra (Thunb.) Willd. 'Kaffer-wag-n-bietjie'; 'Kaffir Wait-a-bit Thorn.'
Deciduous tree of the quartzite ridges and lower slopes. Leaves bipinnate, feathery; stems with or without sharp, recurved thorns; flowers in cream-coloured spikes; pods in pendulous clusters, pointed at both ends.

3446 Acacia robusta Burch. 'Robust Thorn','Engelse Doring'.
Deciduous tree, forming patches of woodland on the lower N. and N.W. slopes. Leaves bipinnate, with fewer and larger pinnules than those of A. caffra; thorns in pairs below the swollen nodes, short and dark, or sometimes elongated and white; flowers yellow, in ball-shaped heads; pods broad, rounded at both ends.

Family 128. LEGUMINOSAE Sub-family PAPILIONACEAE (Pea family).

3702 Indigofera melanadenia Benth.
Evergreen erect small woody herb, found occasionally on the quartzite ridges. Leaves silvery grey; flowers red, small, racemose; pods short, rounded at ends.

3719 Mundulea sericea (Willd.) A. Cheval. 'Olifantshout', 'Cockbush'.
(= Tephrosia suberosa DC. in Fl. Cap.)

Deciduous,/.....

Deciduous, ornamental shrub or small tree, common on the N. slopes, in grasslands and below the rocky ridges. Leaves silky when young; flowers violet-blue, racemose. Bark strongly fibrous, used medicinally.

Family 137 RUTACEAE (Citrus family)

3991 Fagara magalismontana Engl. 'Knob Thorn', 'Lemon Thorn'. (= Xanthoxylon thunbergii DC. in Fl. Cap.)

Deciduous tall shrub or tree of the bush forest. Branches have characteristic knob-like excrescences, each surmounted by a hooked thorn. Flowers greenish-white; fruits capsular, orange-red, seeds black and shiny, bird disseminated.

Family 153. ANACARDIACEAE

4594 Rhus discolor E. Mey.

Deciduous woody herb of the grasslands and marginal bush, stems usually less than 1 m. high. Leaves dark green above, greyish beneath; inflorescence a panicle of minute greenish flowers, male and female flowers on separate plants; fruits bird-disseminated.

4594 Rhus eckloniana Sond.

Deciduous, much-branched low shrub of the grasslands. Leaves green on both sides; flowers and fruits much like those of R. discolor.

4594 Rhus pyroides Burch. 'Brand Taaibos', 'Fire-thorn Rhus'.

Deciduous large hemispherical shrub, common in the grasslands, and at the margins of areas of bush and forest. Some branches bear thorns that can inflict fiery inflammation; flowers and fruits similar to the other species of Rhus.

Family 158/.....

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Family 158/.....

Family 158. CELASTRACEAE

4626 Maytenus polyacanthus (Sond.) Marais
(= Celastrus polyacanthus Sond. in Fl.Cap. Also formerly called Gymnosporia polyacantha Szyszl.)
Evergreen low shrub, typically growing in dense clumps, common at the margins of the Acacia woodland on the N. slopes. Branches very thorny; leaves often grow in clusters above the thorns; flowers small, white, numerous and conspicuous on branches; seeds bird-disseminated.

Family 169. RHAMNACEAE

4861 Ziziphus mucronata Willd. 'Blinkblaar Wag-'n-bietjie'.
Deciduous tree of the upper N. slopes and on the W. ridges. Some plants have pairs of thorns (one hooked and one straight) below each leaf; flowers inconspicuous; fruits rounded, reddish-brown, 1 cm. in diameter, bird and animal disseminated. Leaves relished by game and stock.

Family 178. STERCULIACEAE

5053 Dombeya rotundifolia (Hochst.) Planch. 'Dikbas', 'Wild Pear','White Pear'.
Deciduous, very ornamental tree of the upper N. slopes. White flowers cover the branches in early Spring before the leaves appear; fruits have an enlarged calyx, wind dispersed.

Family 199. FLACOURTIACEAE (= Bixaceae in Fl. Cap.)

5296 Kiggelaria africana L. 'Spekhout'.
Evergreen tree, rare, found on the N.slopes near the quartzite ridges. Leaves dull green above, paler beneath; flowers greenish, males and females on separate trees; fruits when open, star-shaped,

exposing orange pulp and black seeds within. Attractive to fruit-eating birds, e.g. Louries.

Family 213. OLINACEAE

5428 Olinia emarginata Burtt Davy. 'Rooibessie Boom'.
Tall evergreen tree, rare, on quartzite ridge. Leaves bright green, shiny, slightly indented at the tip, and with short red petioles; flowers small, white, in dense terminal panicles; forming clusters of bright red berries, bird disseminated.

Family 236. MYRSINACEAE

6313 Myrsine africana L. 'South African Box'.
Evergreen shrub found occasionally on the upper quartzite ridges. Leaves small and dark green; flowers small white, males and females on different plants; fruits small, purple, fleshy, bird-disseminated. Used as a 'box border'.

Family 239. SAPOTACEAE

6377 Bequaertiodendron magaliesmontanum (Sond.) Heine & Hemsley.
'Stamvrug', 'Stem-fruit' tree.
(= Chrysophyllum magalismontanum Sond. in Fl.Cap.
Also known as = Pouteria magalismontana (Sond.) A. Meeuse).
Evergreen shrub on the exposed edges of the quartzite ridges. (It forms large trees in the Lowveld). Leaves dark green and glossy above, velvety golden-brown beneath; flowers small, growing directly on the branches; fruits large, red, edible, bird- and baboon-disseminated.

Family 240/....

Family 240. EBENACEAE

6403 Royena lycioides (Desf.) A.DC. sp. guerkei (O.Ktze.) de Winter. 'Bloubos' (= Royena guerkei O.Ktze. in Fl. Cap.)

Deciduous shrub, common in the grasslands and bush areas, one of the most ubiquitous species in the Central Transvaal, occurring on any soil and at different altitudes and aspects. Flowers greenish-yellow; fruits succulent, edible, rounded, up to 2 cm. diam., eaten by pied starlings.

6404 Euclea crispa (Thunb.) Sond. var crispa. 'Ghwarrie'. (= E. ovata Burch. in Fl. Cap.)

Evergreen tree or shrub, common on N. slopes in grasslands and bush areas. Leaves grey-green, concolorous; flowers inconspicuous; fruits small, round, bird-disseminated.

Family 243. OLEACEAE

6432 Olea africana Mill. 'Wild Olive', 'Olienhout'. (= O. verrucosa Link. in Fl. Cap.)

Evergreen tree, normally found on granite or dolomite soils, one tree known in the reserve. Leaves dull green above, paler beneath; flowers small, in axillary panicles; fruits dry drupes, bird disseminated. Wood hard, valuable as timber.

Family 245. LOGANIANEAE

6473 Buddleia salvifolia Lam. 'Wilde Salie'.

Evergreen bush, typically riverine, occurring also on the grassy slopes of the reserve. Leaves highly aromatic; flowers appear in late winter, lilac, cream or pink, forming conspicuous terminal panicles, scented; seeds bird-disseminated. Innovation shoots

and/.....

and suckers often used to tip fishing rods, owing to their great flexibility and resilience.

Family 247. APOCYNACEAE

6559 Carissa bispinosa (l.) Desf. 'Num-num Bush'.
(= C. arduina Lam. in Fl. Cap.)
Evergreen, thorny, much-branched, small shrub of the bush and forest areas. Spines characteristically dichotomising; flowers white, sweet-scented; fruits ovate,red, edible berries with milky latex; seeds bird-disseminated.

6562 Ancylobothrys capensis (Oliv.) M.Pichon. 'Wilde Appelkoos', 'Wild Peach'.
(= Landolphia capensis Oliv. in Fl. Cap.)
Low, bushy evergreen shrub, rarely more than 1 m. tall, branches often trailing down the rock faces. Flowers large white, sweet-scented; fruits globose, edible, lactiferous berries 2.5 - 5 cm. diam., orange-coloured when ripe; eaten by baboons.

Family 252. BORAGINACEAE

7043 Ehretia rigida (Thunb.) Druce. 'Deurmekaarbos', 'Lilac Bush'.
Deciduous forest shrub, occasionally found in the grassland with promiscuously interlacing branches. Flowers pale lilac, opening in spring before leaves are fully developed; fruits orange-purple, globose, 0.5 cm. diam.; bird-disseminated.

Family 253. VERBENACEAE

7145 Lippia javanica (Burm.f,) Spreng. 'Beukebos', 'Wilde tee'.
(= L. asperifolia Rich. in Fl. Cap.)

Evergreen/.....

Evergreen woody aromatic herb, common in the grasslands, and at the margins of areas of bush, woodland or forest. Flowers minute, in dense conical (young) or cylindrical (older) spikes. Seeds bird-disseminated.

A beverage may be prepared from an infusion of the leaves, but it is not tea!

Family 257. SCROPHULARIACEAE

7493 Halleria lucida L. 'Witte Olyve','Tree Honeysuckle'. Evergreen tree or shrub of the forest, also found as a pioneer on recently cut surfaces of diggings, etc. or in the grassveld. (Trees are rare in this family). The orange-coloured drooping flowers often arise laterally on older stems; forming purplish berries; seeds bird-disseminated. The wood is hard, tough, and useful for making tool handles, poles, etc.

Family 270. RUBIACEAE

8351 Vangueria infausta Burch. 'Mispel', 'Wild Medlar'. Deciduous velvety -leaved shrub, common on quartzite ridges and adjacent slopes. Flowers greenish, fruits large, orange-brown globular berries about 2.5 c. diam., edible, chiefly baboon-disseminated.

8351.c. Tapiphyllum parvifolium (Sond.) Robyns. 'Klein Mispel', 'Lesser Wild Medlar'.
(= Vangueria parvifolia Sond. in Fl. Cap.)
Deciduous velvety -leaved small tree commonly found at the fringes of the higher quartzite ridges. Flowers greenish; fruits globose berries about 1 cm. diam., edible, baboon disseminated.

8352/.....

8352 Canthium gilfillani (N.E. Br.) N.E. Br. ex O.B.Miller.
Deciduous velvety-leaved small tree, gregarious, common on quartzite ridges and adjacent slopes. Flowers green, inconspicuous, fruits one- or two-lobed 0.75 cm. long, closely resembling its near relative coffee, bird-disseminated.

8352 Canthium mundtianum Cham. & Schl.
(= Plectronia mundtiana Pappe in Fl. Cap.)
Deciduous small tree with glabrous leaves, gregarious, found on the quartzite ridges, less common than the preceding species which it closely resembles.

8383 Pavetta assimilis Sond. 'Kaffir Bride'.
Slender deciduous shrub, often found growing in the middle of the large bushes of such species as Rhus pyroides that occur in the grasslands. The leaves when held up to the light show the presence of internal bacterial nodules in the form of dark patches near the main veins; flowers are clustered, white and sweet-scented; fruits purplish-black berries; seeds bird-disseminated. Worthy of cultivation.

Family 280. COMPOSITAE (Daisy family).

8936 Brachylaena rotundata Sp. Moore. 'Vaalboom'.
Deciduous evergreen tree of the quartzite ridges. Leaves dull green above, white beneath; flower heads creamy-yellow, males and females on different plants.

9370a Brachymeris athanasioides Hutch.
(= Othonna ceriifolia Sond. in Fl. Cap.)
Evergreen bushy herb of the higher quartzite slopes. Flower heads golden-yellow in terminal corymbs, flowering in winter.

9401 Lopholaena coriifolia (Sond.) Phill. & Smith.
Evergreen small herbs on exposed situations above the ridges and on the shale plateaux. Leaves pale apple-green, erect; flower heads creamy-white; achenes crowned with white shining stiff pappus, wind-disseminated.

THE BIRDS OF MELVILLE KOPPIES NATURE RESERVE.

By J.S. Freer. B.Sc.

In the preparation of a list of birds for a limited area of the size of the Melville Koppies Nature Reserve, it is difficult to decide which species to include and which ones to omit. It is possible that ultimately about one hundred species will be recorded as having been seen in or over the reserve, but probably nearly half of these are very occasional visitors. It has therefore been decided to limit this list to those species which are more likely to be seen during a walk through the reserve.

In the summer months migrants and residents are present, but during the winter only resident species can be expected. Migrants in the list are marked M-.

The number next to the name of each species refers to the relevant paragraph in Roberts Birds of South Africa, which is the standard book for the birds of our country, and to which reference should be made if more information is required.

No	Scientific Name	English Name	Afrikaans Name
55	Ardea melanocephala	Black-headed Heron	Swartkop-reier
61M	Bubulcus ibis	Cattle Egret	Bosluisvoël
81	Threskiornis aethiopicus	Sacred Ibis	Skoorsteenveër
114	Falco biarmicus	Lanner Falcon	Edelvalk
130	Elanus caeruleus	Black-shouldered Kite	Blouvalkie
185	Pternistis swainsoni	Swainson's Francolin	Bosveldfisant.
192	Numida mitrata	Crowned Guineafowl	Tarentaal
275	Burhenus capensis	Cape Dikkop	Dikkop
311	Columba guinea	Rock Pigeon	Bosduif

316/.....

316	Streptopelia capicola	Cape Turtle Dove	Tortelduif.
317	Stigmatopelia senegal	Laughing Dove	Rooibors-duifie
343M	Cuculus solitarius	Red-chested Cuckoo	Piet-my-vrou
352M	Chrysococcyx caprius	Diederik Cuckoo	Diedrikkie
368	Bubo Africana	Spotted Eagle Owl	Gevlekte Ooruil
382M	Apus caffer	White-rumped Swift	Witkruis-windswawel
392	Colius indicus	Red-faced Mousebird	Rooiwang-muisvoël
404M	Merops apiaster	European Bee-eater	Europese Byvreter
418	Upupa africana	African Hoopoe	Hoephoep
431	Lybius torquatus	Black-collared Barbet	Rooikop-houtkapper
432	Tricholaema leucomelas	Pied Barbet	Bont Houtkapper
439	Trachyphonus vaillantii	Crested Barbet	Kuifkop-houtkapper
450	Dendropicos fuscescens	Cardinal Woodpecker	Kardinaal-spegt.
453	Jynx ruficollis	Red-breasted Wryneck	Draaihals
493M	Hirundo rustica	European Swallow	Europese swawel
495M	Hirundo albigularis	White-throated Swallow	Witkeel-swawel
502M	Hirundo cucullata	Larger Striped Swallow	Groot Streepswawel
545	Pycnonotus Xanthopygus	Black-eyed Bulbul	Swartoog-tiptol
553	Turdus olivaceus	Cape Thrush	Kaapse Lyster
564	Oenanthe monticola	Mountain Chat	Bergtapuit
581	Cossypha caffra	Cape Robin	Janfrederik
599M	Phylloscopus trochilus	Willow Warbler	Hofzanger
629	Cisticola juncidis	Fantail Cisticola	Gewone Veldtingtinkie
637	Cisticola fulvicapilla	Neddicky	Neddikkie
639	Cisticola lais	Wailing Cisticola	Huilende Tingtinkie
649	Prinia subflava	Tawny-flanked Prinia	Bruinsy-langstert
650	Prinia flavicans	Black-chested Prinia	Swartbors-langstert
654M	Muscicapa striata	Spotted Flycatcher	Europese vlieë-vanger
665	Sigelus silens	Fiscal Flycatcher	Fiskaal-vliëvanger
686	Motacilla capensis	Cape Wagtail	Kwikkie

703/.....

703	Macronyx capensis	Cape Longclaw	Kalkoentjie
707	Lanius collaris	Fiscal Shrike	Laksman
722	Telophorus zeylonus	Bokmakierie	Bokmakierie
734	Acridotheres tristis	Indian Myna	Indiese Spreeu
737	Lamprocolius nitens	Cape Glossy Starling	Klein Glansspreeu
746	Spreo bicolor	Pied Starling	Witgat-spreeu
775	Zosterops pallida	Cape White-eye	Kaapse Glasogie
780	Plocepasser mahali	White-browed Sparrow weaver	Koringvoël
786	Passer melanura	Cape Sparrow	Mossie
803	Ploceus velatus	Masked Weaver	Swartkeel-geelvink
808	Euplectes orix	Red Bishop Bird	Rooi Kaffervink
872	Fringillaria tahapisi	Rock Bunting	Klipmossie

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