

Revision of *Melhania* in southern Africa

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ABSTRACT

The 13 species of *Melhania* in southern Africa are revised. Among the problems resolved is a long-standing one concerning the identities of *M. rehmannii* Szyszyl. and *M. griquensis* H. Bol., the latter in its strict sense being relegated to synonymy of the former.

RÉSUMÉ

REVISION DU MELHANIA EN AFRIQUE AUSTRALE

Les 13 espèces de *Melhania* d'Afrique australe sont révisées. Parmi les problèmes résolus il en est un qui fut de longue durée et qui concerne les identités du *M. rehmannii* Szyszyl. et de *M. griquensis* H. Bol., ce dernier, dans le sens strict, étant relégué la synonymie du premier.

MELHANIA

Melhania Forssk., Fl. Aegypt.-Arab. 107: 64 (1775); Harv. in F. C. 1: 221 (1860); Arenes in Fl. de Madagascar 131, Sterculiaceae: 160 (1959); Wild in F. Z., 1, 2: (1961); M. Friedrich et al., F.S.W.A. 84: 23 (1969); R. A. Dyer, Gen. 1: 364 (1975).

Brotera Cav., Icon. 5: 19, t. 433 (1799).

Shrublets or herbaceous plants with a woody rootstock, the new growth usually pubescent; pubescence of stellate or tufted unicellular hairs often matted to form a thin or dense tomentum or in the case of long tufted hairs forming a hispid or villose pubescence, sometimes scales and short glandular hairs present as well. *Leaves* simple, petioled, stipulate. *Inflorescence* axillary, or terminal, racemose or cymose, often

reduced to a solitary flower; flowers bisexual, rarely polygamous. *Epicalyx-bracts* 3 persistent, united at the base, inserted subunilaterally, pubescent on both surfaces. *Calyx* 5-lobed, persistent. *Petals* yellow, 5, obovate, somewhat unequal-sided, convolute, hypogynous, early deciduous from the base but the faded flower persisting, like a cap, with convolute apices, on the capsule. *Stamens* 5, alternating with 5 ligulate staminodes, connate at the base forming a short annulus or collar. *Ovary* stellate-tomentose, 5-celled, ovules 1 to many in a cell; style with 5 stigmatic branches, sometimes abortive in essentially male flowers. *Capsule* loculicidally dehiscent. *Seeds* 3 or more sided usually with minute raised broken lines or dots on the surface.

The name *Melhania* is derived from Mt Melhan, in Arabia.

KEY TO SPECIES

- 1a Upper surface of leaves fairly sparsely pilose with rather long unicellular subappressed simple (or very rarely 2 to 3 together) hairs lying in the same direction:
 - 2a Leaves shallowly dentate, lateral veins excurrent in the teeth, lamina broad, mostly over 2,5 cm and up to 4 cm broad 1. *M. didyma*
 - 2b Leaves with entire margins very rarely a few teeth present on some leaves, upper surface early glabrescent, lamina mostly under 2,5 cm broad (see also under 1b) 2. *M. prostrata*
- 1b Upper surface of leaves glabrous (early glabrescent) or distinctly stellate pubescent or densely to sparsely stellate-tomentose:
 - 3a Leaves with entire margins, lamina mostly under 2,5 cm broad:
 - 4a Leaves velvety-tomentose on the upper surface, style long 6–8 mm long 3. *M. integra*
 - 4b Leaves early glabrescent on the upper surface, style short 2–3,5 mm long:
 - 5a Hairs when present on the upper surface simple subappressed lying in the same direction, veins impressed above 2. *M. prostrata*
 - 5b Hairs when present on the upper surface minutely stellate, net veins on glabrous leaves (Middelburg form) prominent above 4. *M. randii*
 - 3b Leaves serrate or crenate, obscurely so in *M. polygama*, but then lamina broad up to 5,5 cm broad:
 - 6a Epicalyx bracts broadly ovate to ovate-acuminate, rounded or cordate at the base (rarely sub lanceolate in *M. polygama*, which occurs only in N.E. Natal):
 - 7a Epicalyx as long as or longer than the calyx:
 - 8a Epicalyx broad, shortly and broadly acuminate, grey-tomentose; flowers bisexual; style short up to 3,5 mm long; plant ferrugineous pubescent in part 5. *M. forbesii*
 - 8b Epicalyx long-acuminate, grey tomentose; flowers polygamous, the male with long styles \pm 7 mm long and abortive style-branches, female with short style, \pm 3 mm, and branches as long as or longer than the style; plant sulphur-grey tomentose 6. *M. polygama*
 - 7b Epicalyx shorter than the calyx: sometimes only slightly shorter in *M. transvaalensis*:
 - 9a Epicalyx abruptly acuminate; style long, up to 7 mm long; leaves tomentose on both surfaces 7. *M. acuminata*
 - 9b Epicalyx not or gradually acuminate in the upper half; style short:
 - 10a Leaves usually broadly ovate-oblong, tomentum predominantly grey, interspersed with short light brown clustered hairs 7a. var. *acuminata*
 - 10b Leaves usually narrowly ovate-oblong, tomentum grey but copiously interspersed with rather long dark brown clustered hairs 7b. var. *agnosta*
 - 11a Leaves with the upper surface distinctly and coarsely stellate-pubescent throughout, not tomentose, usually more than twice as long as broad; flowers usually over 1 cm long, style short up to 5 mm long 8. *M. transvaalensis*

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- 11b Leaves with upper surface stellate-tomentose to glabrescent usually less than twice as long as broad; flowers under 1 cm long. 9. *M. rehmannii*
- 6b Epicalyx-bracts linear-subulate to lanceolate; if fairly broad not broadest at the base:
- 12a Leaves not ovate, not broadest at or near the base; low plants under or up to 35 cm high with several to many stems arising from the base:
- 13a Epicalyx-bracts linear-subulate; flower-stalk short, \pm 4 mm long, shorter than the petiole and usually 1-flowered. 10. *M. virescens*
- 13b Epicalyx-bracts lanceolate, mature flower-stalk as long as or longer than the petiole, 10–40 mm long, 1–3-flowered. 11. *M. burchellii*
- 12b Leaves usually ovate to ovate-oblong, variable in shape but usually broadest at or near the base; shrublets usually over 30 cm tall, main stems 1 to a few, woody branched above:
- 14a Strong perennial, producing shoots from a reduced persistent woody base; leaves varying in size, 2–7 cm long, 1–4.5 cm broad. 12. *M. damarana*
- 14b Weak perennial, not producing roots from a woody base; leaves varying in size, but usually under 5 cm long, thin-textured and minutely tomentose on both surfaces, silvery grey on the under surface. 13. *M. suluensis*

1. *Melhania didyma* Eckl. & Zeyh., Enum. 52 (1834) Szyszyl. Polypet. Thalam. Rehm. 137 (1887) excl. var.; Harvey in F. C. 1: 222 (1860); K. Schum. in Engl., Monogr. Afr. Pfl. 5: 10 (1900) excl. var. Syntypes: Uitenhage, Winterhoek Mountains, *Ecklon & Zeyher* s.n. (SAM!); Zuurbergen, *Ecklon & Zeyher* s.n.

Vialia macrophylla Vis., Ind. Sem. Patav. in Linnaea 15, Litt. 103 (1840) Described from plant grown from seed, origin unknown.

Melhania leucantha E. Mey. in Drège, Zwei Pfl. Doc. 201, 133 & 134 (1843) nom. nud.

Shrublet, 20–60 cm tall, sometimes up to 1 m tall, branched from near the base, erect or, when browsed, forming a low bushy plant, main stem woody; branchlets tomentose, the grey tomentum intermixed with light brown, clustered, villose hairs. *Stipules* subulate, tomentose, up to 14 cm long. *Leaves* pubescent above with subappressed, long, single hairs or very occasionally 2 or 3 hairs from the same base, greyish-stellate-tomentose beneath intermixed with clustered light brown hairs, especially on the nerves, ovate-oblong to ovate-lanceolate, up to 10 cm long and 4 cm broad, margins shallowly dentate, sometimes obscurely so; petiole 0.7–1.5 cm long. *Inflorescence* axillary, peduncle rigid, up to 5 cm long, usually 2-flowered at the apex, pedicels up to 1 cm long. *Epicalyx-bracts*, broadly ovate, acuminate, cuspidate at the apex, cordate at the base, usually slightly longer than the calyx and petals,

densely tomentose to villose-tomentose on both sides, up to 2.5 cm long, 1.3 cm broad, usually longer than the calyx. *Calyx* lobed almost to the base, lobes ovate-lanceolate, up to 1.5 cm long, hirsute-hispid without. *Petals* about as long as the calyx, broadest at the apex, pale yellow, fading brownish yellow. *Stamens* 5, alternating with 5 linear-ligulate staminodes which are about twice as long as the stamens. *Ovary* subglobose densely villose; style about 3–5 mm long, branches 1.75–2 mm long; ovules 4–5 in a cell. *Capsule* hispid with tufted hairs. Fig. 1.

Occurs on grassy slopes, thorn veld or margins of open forests, often near rivers. Recorded from the eastern Cape, Swaziland, Natal and the eastern Transvaal.

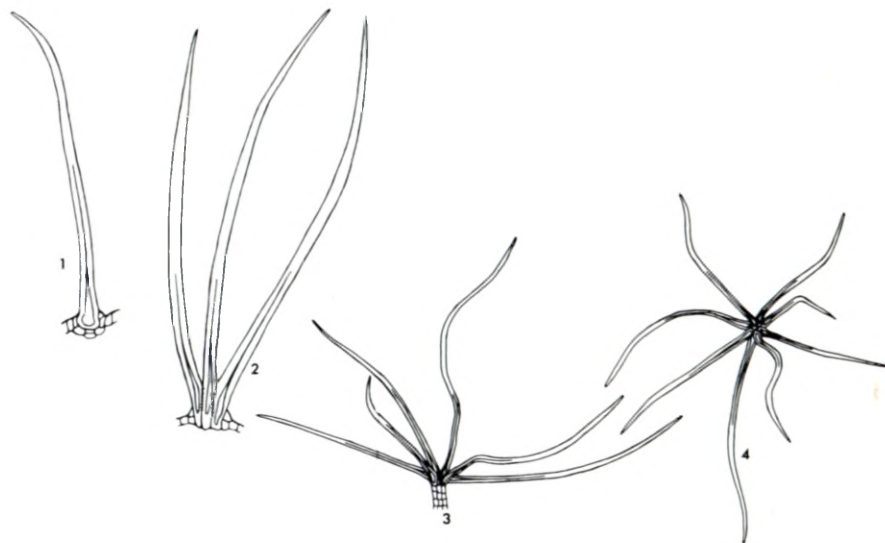
TRANSVAAL*.—Nelspruit: Kaapsche Hoop, Rogers 20875.

SWAZILAND.—Mbabane: Hlane Wildlife Sanctuary, Stephen 1451.

NATAL.—Alfred: Izingolweni, Strey 6146. Durban: Krauss 217. Eshowe: near Dhangubo store, Codd & Verdoorn 10175. Estcourt: Jones's Kloof, West 1548. Hlabisa: Hluhluwe, Wells 2120. Lower Umfolozi: Umfolozi Game Reserve, Strey 4958. Mapumula: 16 km NE of Thring's Post, Codd & Verdoorn 10180. Port Shepstone: Umzimkulu 'horseshoe' slopes, Strey 7459. Umzinto: Imhambanyoni Valley, King 114.

CAPE.—Albany: Kudu Nature Reserve, Fort Brown, Gibbs Russell 3652. Alice: Woburn, Acocks 9823. East London: Nahoon River Valley, Smith 3753. Fort Beaufort: Fort Fordyce, Story 2114. Kokstad: Umzimvubu Cutting, Strey 10707. Komga: Flanagan 9. Mqunduli: Pegler 578. Queenstown: Junction Farm, Galpin 8078. Uitenhage: Groendal, Long 1162.

FIG. 1.—*Melhania didyma*. Differences between hairs on upper and lower surfaces of leaves. 1 & 2, simple and tufted hairs from upper surface; 3 & 4, stellate hairs with slender rays, side and dorsal views, from lower surface. All \times 50.



* The specimen citations in this and the following two papers are arranged alphabetically according to districts.

According to Harvey in F. C. 1: 222, *M. leucantha* E. Mey. nom. nud. is this species. The Drège specimens at Kew which Meyer named *M. leucantha* have been examined and they are *M. didyma*.

M. didyma resembles *M. forbesii* in some respects and especially in the size and shape of the epicalyx-bracts, but it is readily distinguished by the upper surface of the leaf being pubescent with single subappressed hairs, while in *M. forbesii* it is tomentose or with short, grouped or stellate hairs.

The specimens from Botswana listed by O. B. Miller in J1 S. Afr. Bot. 18: 57 (1952) as *M. didyma* are *M. forbesii* and most probably *Dinter* 3036 from Tsumeb, listed as *M. didyma* in Feddes Reprium 19: 96 (1924) is, judging by the locality, also this species.

For the relationship between *M. didyma* and *M. prostrata* see the notes under the latter species.

2. *Melhaniea prostrata* DC., Prodr. 1: 499 (Jan. 1824); Burch., Trav. 2: 263 (1824); Harv. in F. C. 1: 222 (1860); K. Schum. in Engl., Monogr. Afr. Pfl. 5: 9 (1900); Burt Davy, Fl. Transv. 1: 260 (1926); Wild in F. Z. 1, 2: 530 (1961). Type: Cape, Kimberley, Klipfontein, *Burchell* 2153 (PRE, iso!).

M. linearifolia Sond. in Linnaea 23: 18 (1850); Harv. in F. C. 1: 222 (1860). Type: Natal, Durban *Gueinzus* 532 (S, holo!; PRE photo!).

M. didyma var. *linearifolia* (Sond.) Szyszyl., Polypet. Thalam. Rehm. 137 (1887); K. Schum. in Engl., Monogr. Afr. Pfl. 5: 10 (1900); Burt Davy, Fl. Transv. 1: 261 (1926).

M. prostrata forma *latifolia* Bak. f. in J. Bot., Lond. 37: 425 (1899). Type: Zimbabwe, Bulawayo, *Rand* 24.

Shrublet, a weak to fairly strong perennial, usually branching near the base; branches upright, spreading or prostrate, usually branched again 20–60 cm long, new growth grey-stellate-tomentose, tomentum interspersed in parts with scattered red-brown, bunched hairs. *Stipules* subulate 4–14 mm long. *Leaves* linear-lanceolate linear-oblong, narrowly oblong or narrowly ovate-oblong, rounded at base and apex, rarely apex truncate and very shallowly lobed, 2.4–12 cm long, 0.4–2 cm broad, rarely 2.5 cm broad, discolourous, lower surface grey-tomentose with golden-brown, lepidote, stellate-pilose scales bearing short or long hairs upper surface fairly sparsely pubescent with mostly rather long single, (or rarely about 3 in a cluster), subappressed hairs, lying ± in the same direction or glabrous; margins entire, very rarely shallowly lobed in part; lateral veins few, impressed above, prominent beneath, not excurrent; petiole 0.2–1.2 cm long, rarely 1.5 cm long, grey tomentose. *Inflorescence* axillary 1–2-flowered; peduncles 3–32 mm long, ultimately longer than the petioles which range from 2–12 mm, frequently in the single flowered inflorescence the peduncle and pedicels are indistinguishable. *Epicalyx-bracts* from narrowly to broadly ovate-acuminate, shallowly to deeply cordate at the base and abruptly narrowed in a short basal claw, about 8–15 mm long and 2–6.5 mm broad, thinly to densely stellate-tomentose on both surfaces. *Calyx* with lobes ovate-lanceolate, acuminate, shorter or longer than the epicalyx, 8–14 mm long, 2.5–4 mm broad, dorsally grey-tomentose, sparsely to very densely interspersed with bunched or stellate golden-brown, bristle-like hairs. *Petals* yellow, broadest at the apex cuneate, about 12 mm long and 8 mm broad at apex. *Stamens* about 4 mm long, alternating with linear-ligulate staminodes somewhat longer than the stamens. *Ovary* subglobose densely tomentose and bristly with bunched or

stellate hairs; style 1.5–3.75 mm long with branches half to three quarters as long; ovules 6–8 in a cell. Fig. 2.



FIG. 2.—*Melhaniea prostrata*. Burchell 2153, isotype in PRE.

Found on rocky slopes, sand flats, grasslands and bushveld from Griqualand West, northern Cape, throughout the Transvaal into Botswana, Swaziland and Zululand. Also recorded from Zimbabwe and Mozambique.

BOTSWANA.—South East District: Dikomo di Ki, *Wild* 5179.

TRANSSVAAL.—Barberton, *Pott* 5634. Brits: Jacksonstun, *Van Vuuren* 418. Heidelberg: Suikerbosrand Nature Reserve, *Lambrechts* 183. Johannesburg: Schoongezicht, *Mogg* 22932. Letaba: Hans Merensky Nature Reserve, *Oates* 391. Lydenburg: Kruger's Post, *Burt Davy* 7303. Marico: 4.8 km S. W. Zeerust, *Story* 795. Middelburg: Loskop Dam, *Codd & Verdoorn* 10366. Nelspruit: Lowveld Botanic Gardens, *Buitendag* 775. Pietersburg: Chuniespoort, *Codd & Verdoorn*, 10478. Pilgrims Rest: Erasmus Pass, *Killick & Strey* 2522. Potchefstroom: Venterskroon, *Van Wyk* 1428. Potgietersrust: Pyramid Estate, *Galpin* 8923. Pretoria: Wonderboom, *Thode* A 396. Rustenburg: Rustenburg Nature Reserve, *Jacobsen* 1146. Soutpansberg: 37 km N. of Louis Trichardt, *Magill* 9630A. Vereeniging: Suikerbosrand, *Bredenkamp* 532. Waterberg: Kransberg, *Germishuizen* 280.

O.F.S.—Senekal: Doringberg-oos, *Muller* 1866.

SWAZILAND.—Stegi: Blue Jay Ranch, *Compton* 29746.

NATAL.—Hlabisa: Hluhluwe Game Reserve, *Ward* 1772. Ingwuvuma: Josini Dam, *Strey* 5283. Ngotshe: Makatini flats, *Wells* 2219. Ubombo: Lebombo Mts, near Ubombo, *Acocks* 13124.

CAPE.—Barkly West: Klipvlei, *Esterhuysen* 2082. Hay: Berge-naars Pad, *Acocks* 2087. Kuruman: 17.2 km N. W. of Kuruman, *Leistner* 596. Philipstown: near Petrusville, *Jooste* 285.

The decision to follow the authors of Flora Zambesiaca and put *M. linearifolia* Sond. into synonymy under *M. prostrata* and not as a variety of *M. didyma* as Szyszylowicz did, was made after seeing the type specimen of the former, *Gueinzus* 532. This specimen compares well with the type of *M. prostrata* from Griqualand West and the many specimens of this species found throughout the Transvaal and in parts of Natal.

M. prostrata is closely related to *M. didyma*, but may be distinguished by the much narrower leaves with entire margins (very rarely a single leaf shallowly lobed in part). The pubescence on the upper surface of the leaves is, when present, like that of *M. didyma* of rather long usual single subappressed hairs, but in *M. prostrata* the upper surface is early glabrescent.

Where the distribution of these two species overlap, intermediates are found. It is not clear whether these intermediates are of hybrid origin or whether the two taxa are fairly recent segregates from a common stock.

The specimen of *Schlechter* 4322 in the Transvaal Museum Herbarium, now in the National Herbarium, is a mixture of *M. prostrata* and *M. transvaalensis*. The latter has the upper surface of the leaves distinctly stellate throughout.

When Burchell collected the type of this species, *Burchell* 2153, he evidently thought it was a *Dombeya*, for in his catalogue he has listed it as *Dombeya prostrata*.

3. *Melhania integra* Verdoorn in Bothalia 8: 177 (1964). Type: Transvaal, Pietersburg, Wolkberg, Codd & Verdoorn 10407. (PRE, holo.!).

Shrublet, 20–45 cm tall with several slender woody stems from a woody rootstock, laxly branched; branches shortly and densely tomentose, sometimes, in new growth reddish-brown lepidote stellate scales are obvious. *Stipules* subulate, 6–15 mm long. *Leaves* on flowering branches clustered towards the apex, entire (very rarely lower leaves shallowly toothed in part), finely and densely velvety tomentose on the upper surface, greyish tomentose beneath with reddish, lepidote, stellate scales usually obvious, especially on the nerves, narrowly lanceolate-elliptic, mostly 2–6.5 cm long and 0.4–1.2 cm broad, sometimes up to 1.8 cm broad, nerves prominent beneath, obscure above, basal nerves 3, rarely 5, base subrounded, apex subacute or rounded, mucronate; petiole 0.4–1 cm long, tomentose with a few to many reddish-brown, lepidote stellate scales obvious. *Inflorescence* axillary in the upper leaves, 1–3-flowered; peduncle 4–20 mm long, pedicels 3–14 mm long, both tomentose with scattered reddish-brown stellate scales obvious in parts. *Epicalyx-bracts* ovate acuminate, rounded to cordate at the base, about 12 mm long, 6 mm broad near the base, tomentose on both surfaces with the lepidote scales obvious on the outside. *Calyx-lobes* lanceolate, acuminate, about 15 mm long, 3.5 mm broad near the base, tomentose and lepidote without. *Petals* canary yellow, turning brownish at maturity, broadest at the apex, about 16 mm long, 10–14 mm broad at apex. *Stamens* with filaments 1 mm long, anthers 3–4 mm long, staminodes 9 mm long. *Ovary* subglobose, about 3 mm diam., white tomentose; style about 6–8 mm long, branches 1.5–3 mm long; ovules 7 in each locule. *Capsule* about 10 mm long, 8 mm diam., shortly tomentose and scaly, the scales bearing short hairs. Fig. 3.

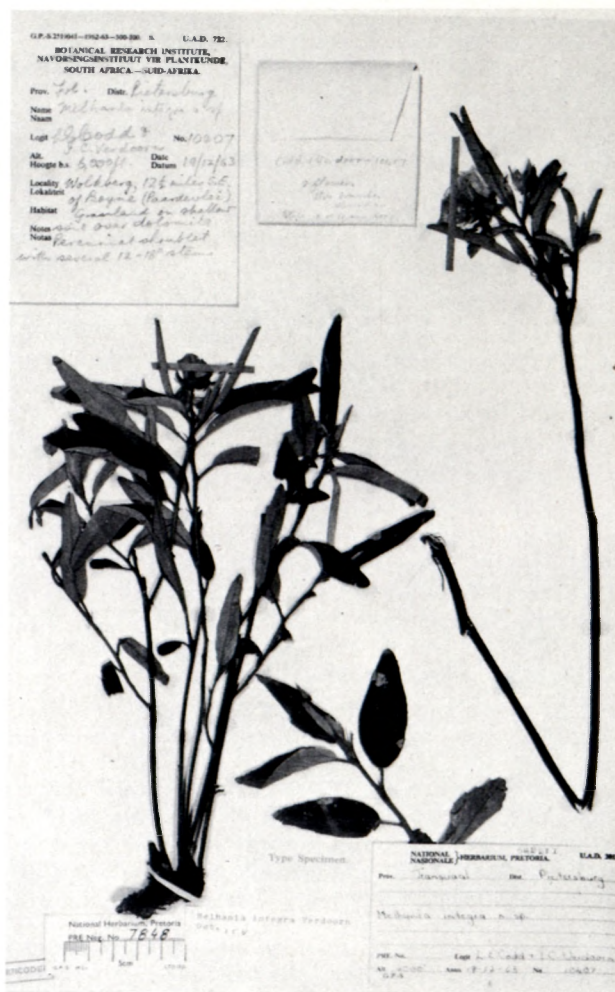


FIG. 3.—*Melhania integra*. Codd & Verdoorn 10407, isotype in PRE.

Recorded from the Wolkberg, the northern extremity of the Transvaal Drakensberg and at the top of Abel Erasmus Pass, growing on rocky hillsides among grass in shallow soil over dolomite.

TRANSVAAL.—Letaba: Dalton Farm, above Dublin Mine, Fourie 601; Pietersburg: Wolkberg, Paardevlei, Codd & Verdoorn 10407; Verdoorn 2474; Pilgrims Rest: Abel Erasmus Pass, Mauve 4790.

This species occurs abundantly in the area which lies south-east of Boyne in the Pietersburg District and on the borders of the Letaba District. It grows on the grassy slopes among dolomite rocks. The entire, velvety-tomentose leaves, together with the long style and large petals, characterize the species.

It resembles *M. randii* Bak. f. from Zimbabwe in the entire leaves but differs, among other things, in the pubescence on the upper surface of the leaves, the larger flowers and the ovate-cordate epicalyx. The specimen from Abel Erasmus Pass is not quite as velvety as the Wolkberg specimens.

4. *Melhania randii* Bak. f. in J. Bot., Lond. 37: 425 (1899); K. Schum. in Engl., Monogr. Afr. Pfl. 5: 6 (1900); Wild in F. Z. 1, 2: 530 (1961). Type: Zimbabwe, Salisbury, Rand 439 (BM, holo.).

Shrublet, 6–60 cm tall with several slender woody stems from a thick, woody rootstock, branches at first finely stellate-tomentose with minute reddish brown scales intermingled. *Stipules* narrowly lanceolate-subulate up to 8 mm long. *Leaves* entire, rarely some shallowly dentate in part, finely minutely

stellate-tomentose and with scattered reddish brown scales (the scales sometimes stalked and all bearing short hairs) on the under surface, the upper surface finely stellate-tomentose and in some forms early glabrescent, narrowly oblong-elliptic or lanceolate-elliptic to ovate-oblong, 2–9 cm long, 0.2–1.5 cm broad, rounded at the base, subacute to rounded at the apex, mucronate; petiole up to 1 cm long, tomentose and lepidote. *Inflorescence* axillary, tomentose and lepidote, 1–3-flowered; peduncle 7 mm long and indistinguishable from the pedicel or up to 4 cm long and pedicels up to 1.2 cm long. *Epicalyx-bracts* narrowly lanceolate, narrowly ovate to ovate-acuminate, from 6–13 mm long and 1–6 mm broad (large bracts found mostly on the specimens from the eastern mountainous country), tomentose on both surfaces and with minute reddish scales intermixed on upper surface. *Calyx-lobes* lanceolate-acuminate, up to 11 mm long, tomentose and with conspicuous reddish brown scales on outer surface. *Petals* yellow, 'bright golden yellow' about 9 mm long, 7 mm broad at the oblique apex. *Stamens* with filaments 1 mm long, anthers 2–3 mm long, staminodes 3–5 mm long. *Ovary* stellate tomentose and with straight bristly hairs especially in upper portion, about 2 mm diam., style short, at maturity up to 2 mm long, branches when spreading up to 3 mm long. *Capsule* up to 1 cm long, stellate-pubescent and scaly.

Recorded from the Middelburg District, where it grows in open mixed grassveld in iron-rich soil and a taller form from the Barberton District on the exposed, wind-swept summit of a mountain near Barberton. Also occurs in Zimbabwe and Mozambique.

TRANSVAAL.—Barberton: Sheba Hills, Russel's Beacon, *Scheepers* 1247; *Verdoorn* 2479. Middelburg: Roos Senekal, *Verdoorn* 2492; 2501; 2502; 2503; 2504.

M. randii has been recorded from four widely separated areas of distribution. Probably the long period of isolation accounts for the plants in any one of these colonies differing in some respects from those in another. The specimens seen to date from around Salisbury, the type locality, are low bushes with long narrow leaves on which the pubescence persists on the upper surface. In the mountainous eastern regions of Zimbabwe and the Transvaal the plants are over 30 cm tall with slender erect stems; they also have long leaves with persistent pubescence on the upper surface, and differ only slightly from each other, for instance the epicalyx bracts on the Transvaal specimens are usually broader than those on the Zimbabwean specimens. The form found in the Middelburg District of the Transvaal differs from all the others in having shorter and broader leaves, which are early glabrescent on the upper surface. In this form the bushes are usually under 30 cm tall.

M. randii resembles *M. prostrata* and *M. integra* in the entire leaves. It can be distinguished from the former, among other things, by the upper surface of the leaves being finely stellate-pubescent before becoming glabrous as opposed to having long simple, appressed hairs on the upper surface, before becoming glabrous. From *M. integra* it may be distinguished by the persistent minutely stellate pubescence of the upper surface of the leaf as well as the short style and smaller flowers, the styles being 1.75 mm long as opposed to 8 mm long in *M. integra* and the flowers 1.1 cm long as opposed to being 2 cm long.

5. *Melhanian forbesii* Planch. ex Mast. in F.T.A. 1: 231 (1868); K. Schum. in Engl., Monogr. Aft. Pfl. 5: 12 (1900); Burt Davy, Fl. Transv. 1: 261 (1926); Wild in F.Z. 1, 2: 531 (1961); M. Friedrich et al.,

F.S.W.A. 84: 25 (1969). Syntypes: Mozambique, Cupanga, *Kirk* (K); without precise locality, *Hutton* (K).

M. serrulata R. E. Fr., Wiss. Ergebn. Schwed. Rhod.-Kongo-Exped. 1: 157 (1914). Type. Zimbabwe, Victoria Falls, *Fries* 74 (UPS).

Shrublet about 60 cm tall, sometimes taller, stem erect, branched; branches suberect the upper portion usually appearing rust-coloured from the clusters of rather long ferruginous hairs, which are sometimes stalked and occur more or less densely intermingled with the short greyish stellate tomentum. *Stipules* subulate 10–20 mm long. *Leaves* greyish tomentose with short, fine grouped or stellate hairs especially dense on the lower surface, and sometimes with clusters of ferruginous hairs on the nerves beneath, more or less ovate-oblong, 3–11 cm long, 1, 5–6 cm broad, rounded at the apex, sometimes mucronate, base rounded to cordate, margin crenate-serrulate; petiole 1–2.5 cm long, usually densely covered with clusters of ferruginous hairs. *Inflorescence* axillary, peduncles straight, tomentose and with numerous clusters of ferruginous hairs, suberect, 1–6 cm long, branched near the apex; raceme 1–4-flowered, usually 3-flowered; pedicels 2–7 mm long. *Epicalyx-bracts* from about 12–18 mm long and 10–14 mm broad, ovate, sometimes broadly acuminate to an acute apex (not abruptly so), cordate at the base, longer than the calyx and petals (in dried specimens obscuring the calyx), tomentose on both surfaces. *Calyx-lobes* greyish villose-tomentose dorsally, glabrous within, lanceolate about 1 cm long, apex acute. *Petals* about as long as the calyx-lobes, obovate, broadest at the apex (the faded petals twisted at the apex and persisting like a cap on the capsule may appear to be longer than the calyx but they are not attached at the base). *Stamens* about 12 mm long, filaments and anthers about 5 mm long. *Ovary* subglobose about 9 mm diam., densely tomentose; style about 2 mm long, style-branches about 4 mm long. *Seeds* up to 6 in a cell.

Found along rivers in alluvial soil or on dolomitic hillsides, sandy flats and parkland in red soil. Recorded from Natal, Swaziland, the eastern and northern Transvaal; and northern South West Africa. Also occurs in Mozambique, Zambia, Zimbabwe and Angola.

S.W.A.—Eastern Caprivi: Linyanti area, *Killick & Leistner* 3169, Grootfontein: foot of Aha Mtns, *Storj* 6376. Okavango: Nianzana, *Dinter* 7252. Ovambo: Oshihanga, *Loeb* 563.

BOTSWANA.—Central District: Orapa, *Allen* 126. Ngamiland: Plains near Tsodilo Hills, *Banks* 59.

TRANSVAAL.—Barberton: Komatipoort, *Marloth* 5457. Letaba: Hans Merensky Nature Reserve, *Gilliland* 782. Nelspruit: E. of Skukuza, *Codd & de Winter* 5015. Pietersburg: Chuniespoort, *Codd & Verdoorn* 10460. Pilgrims Rest: Dindinnie Farm, *Mauve* 4793. Soutpansberg: Punda Milia, *Schlieben* 9334. Waterberg: Krantzberg area, *Germishuizen* 267.

SWAZILAND.—Hlatikulu: near Sipofaneni, *Compton* 29891. Tabankula: *Barrett* 312. Tshanani: Swaziland Irrigation Scheme, *Riches* 12.

NATAL.—Hlabisa: False Bay Park, *Scott-Smith & Ward* 70. Ingwavuma: Kosi Estuary, *Vahrmeijer & Tölken* 914. Ubombo: Mkuzi Game Reserve, *Ward* 4123.

In the shape of the epicalyx *M. forbesii* closely resembles *M. didyma*, but can be readily distinguished by the upper surface of the leaves being tomentose and minutely stellate and not pubescent with single, long, sub-appressed hairs as in *M. didyma*. The specimens from Botswana listed by O. B. Miller in JI S. Afr. Bot. 18: 57 (1952) as *M. didyma* are *M. forbesii* and, most probably, *Dinter* 3036 also listed

as *M. didyma* from Tsumeb, in Feddes Reprium 19: 96 (1924), is this species. (See also notes under *M. acuminata* var. *acuminata*.)

The native name for *M. forbesii* is moulhwadambo meaning 'setting sun'.

6. *Melhania polygama* Verdoorn in Bothalia 8: 178 (1964) Type: Natal, Umfolozi Game Reserve, Strey 4957b (PRE, holo.!).

Shrublet about 35 cm tall, with a woody rootstock. Stems many, rather robust, in dried specimens 3–5 mm diam., laxly branched, new growth with a sulphur-grey stellate tomentum, the hairs of different lengths and grouped on scales. Stipules subulate, 5–10 mm long. Leaves finely and densely sulphur-grey stellate-tomentose on both surfaces, upper surface somewhat darker than the lower; lamina broadly ovate-trullate or ovate-elliptic, 3–9, 5 cm long, 1,5–5,5 cm broad, broadly cuneate or subrounded at the base, narrowing slightly to the obtuse or subtruncate apex, shallowly crenate-dentate except at the base; petiole 1–2 cm long, densely sulphur-grey tomentose, fairly stout. Inflorescence in axils of upper leaves; peduncle up to 6 cm long, stellate-tomentose, 1–3-flowered at apex; pedicels 0,3–1,5 cm long. Flowers polygamous. Epicalyx-bracts ovate, cordate at base, gradually attenuating to a subulate upper portion and acute apex, longer than calyx, about 14 mm long, 4–12 mm wide, stellate-tomentose on both surfaces. Calyx with lobes deltoid-acuminate, about 11 mm long, outer surface stellate-tomentose. Petals yellow, broadest at the apex, in essentially male flowers about 14 mm long, in female shorter, about 10 mm long. Stamens, in male flowers, with anthers about 4 mm long, in female abortive, about 2 mm long; ligulate staminodes about 6,5 mm long. Ovary densely beset with long, grouped hairs on scales; style in male flowers long and slender, about 7 mm long, branches aborted or short, style in female flowers thick and short, about 2,5 mm long, branches longer than the style, about 5 mm long, sometimes decurrent on the style; ovules 5 in a cell. Capsule broadly oblong, about 9 mm long, tomentose and with groups of rather long, sulphur-coloured hairs. Fig. 4.

To date recorded only from the Umfolozi Game Reserve, Zululand, where it grows on grassy hill-slopes.

NATAL.—Lower Umfolozi: Umfolozi Game Reserve, Ward 3324; Dengesen Beacon Hill, Strey 4957a; 4957b; 4957c; 4957d.

This is the first known record of a species of *Melhania* with polygamous flowers. The essentially male flowers are more showy with longer petals, large stamens and an aborted style. The female flowers have short petals, small stamens and a style with long, stout branches. The broad ovate-trullate leaves, that is, leaves, which are usually broadest about a third of length above the base, are a distinguishing feature.

7. *Melhania acuminata* Mast. in F.T.A. 1: 231 (1868); Wild in F.Z. 1, 2: 532 (1961). Type: Mozambique, Sena, Kirk s.n. (K, holo.).

Shrublet about 65 cm tall; stem erect from a comparatively slender tap-root, branched; branches erect and spreading, new growth greyish stellate-tomentose and sometimes with bunched light to dark brown hairs intermixed. Stipules subulate, 0,5–1,7 cm long. Leaves greyish stellate-tomentose on both surfaces, sometimes more thinly so on the upper surface, lower



FIG. 4.—*Melhania polygama*. Strey 4957, holotype in PRE.

surface sometimes with light to dark brown bunched hairs, especially on the prominent nerves, broadly to narrowly ovate-oblong, 3,5–10 cm long, 1,5–6 cm broad, narrowing towards a broadly rounded apex, rounded to subcordate at the base, margins crenate-serrate; petiole 1–2,5 cm long, stellate-tomentose. Inflorescence axillary, peduncle straight, suberect up to 5 cm long, 3- or more-flowered near the apex; pedicels 0,6–1 cm long. Epicalyx-bracts ovate (rarely narrowly so), shorter than the calyx, rounded at the base and with a very short broad claw, abruptly acuminate above into a caudate-like upper half, tomentose on both surfaces. Calyx with lobes lanceolate, gradually narrowing to the acute apex, 1–1,5 cm long, stellate-tomentose on the outside only. Petals usually longer than the epicalyx, obovate, broadest at apex. 1–1,5 cm long. Stamens with filaments and anthers about 3,5 mm long; staminodes 7 mm long. Ovary subglobose about 8 mm diam., densely tomentose; style 6–10 mm long, branches 1–2 mm long; ovules 6 in a cell.

For key to varieties see key to species.

(a) var. *acuminata*. Wild in F.Z. 1, 2: 532 (1961).

M. acuminata Mast. in F.T.A. 1: 231 (1868); K. Schum. in Engl., Monogr. Afr. Pfl. 5: 13 (1900); Burt Davy, Fl. Transv. 1: 261 (1926); M. Friedrich et al., F.S.W.A. 84: 24 (1969); *M. velutina* sensu Excell & Mendonga, C.F.A. 1, 2: 190 (1951), pro parte.

The typical variety is characterized by the leaves usually being broadly ovate to ovate-oblong, the flower large, and the rather thick tomentum being predominantly grey with fairly obscure, bunched,

brown hairs intermixed. There is a fair number of herbarium specimens, which approach var. *agnosta* either in the leaves being narrower than usual or the bunched hairs somewhat more conspicuous. This supports the decision to reduce *M. agnosta* K. Schum. to varietal rank under *M. acuminata*.

Found in sandy soil, on flats, in bushveld and on grassy wooded slopes. Recorded from the northern Cape, the northern and eastern Transvaal, South West Africa and Botswana. Also occurs in Zambia, Zimbabwe, Angola and Mozambique.

S.W.A.—Gobabis: Farm Davis, *Merxmüller* 1206. Grootfontein: Neitsas, *Schonfelder* 1051. Kavango: E. of Runtu, *De Winter* 3788. Otjiwarongo: Quickborn, *Bradfield* 366. Outjo: Chorab, *Dinter* 5352. Owambo: S.E. of Oshikango, *Rodin* 9118. Tsumeb: Farm Kumhause, *Giess* 14975.

BOTSWANA.—Central Dist.: Seleka Ranch, *Hansen* 3070. Chobe: on track to Sajawa, *Smith* 2627. Glanzi N.W. of Malepolole, *Story* 4973. Kgalagadi: Kang, *Mott* 291. Kweneng: between Gaberones and Thamaga, *Reyneke* 329. Ngamiland: Okavango Delta, *Smith* 387.

TRANSVAAL.—Groblersdal: Loskop Dam to The Hell, *Codd & Verdoorn* 10366b. Letaba: K.N.P. *Van der Schijff* 2779. Lydenburg: N.E. of Penge Mine, *Leistner* 3465. Nelspruit: Malelane Camp, *Acocks* 16726. Pilgrims Rest: Olifants River bank, *Pole Evans* H. 17021. Potgietersrus: on Limpopo River bank near Usutu, *Van Graan & Hardy* 451. Waterberg: N.E. of Nylstroom, *Codd & Verdoorn* 10435. Soutpansberg: E. of Wylies Poort, *Meuse* 9207.

CAPE.—Vryburg: near Malope River, *Mostert* 1244.

M. acuminata var. *acuminata* is sometimes confused with *M. forbesii*, which has more or less the same habit and partly the same distribution. These taxa are mainly distinguished by the shape and length of the epicalyx-bracts around the length of the style.

According to Wild in F.Z., 1, 2: 532 (1961), *M. velutina* sensu Exell & Mendonça in Conspectus Florae Angolensis 1, 2: 190 (1951) is partly *M. acuminata*.

A note on *Rodin* 9291 from Kwanzama, South West Africa, reads, 'leaves are stamped and sap is put on wounds to heal them'.

(b) var. *agnosta* (K. Schum.) Wild in Bolm Soc. broteriana ser. 2, 33: 36 (1959). Type: Transvaal, Makapaansberg, Strydpoort, *Rehmann* 5490 (K, iso.!, PRE, photo!). Fig. 5.

M. agnosta K. Schum. in Engl., Monogr. Afr. Pfl. 5: 11 (1900); Burtt Davy, Fl. Transv. 1: 261 (1926). Type as above.

M. ferruginea sensu Szyszyl., Polypet. Disc. Rehm. 139 (1887), pro parte as to *Rehmann* 5490.

M. obtusa N.E. Br. in Kew Bull. 1906: 99 (1906). Type: Zimbabwe, near Bulawayo, *Cecil* 94 (K, holo.).

This variety differs from the typical in the leaves being narrowly oblong or narrowly ovate-oblong and the tomentum on the new growth being densely interspersed with bunched, dark-brown hairs. The flowers are smaller on the whole and usually clustered at the apices of the branchlets. It agrees with the typical in the characteristic abruptly-acuminate epicalyx-bracts, the long style, general habit and the long peduncles bearing 1 to 4 flowers at the apex.

Recorded from Botswana and the Transvaal. Also occurs in Zambia, Zimbabwe and Mozambique.

BOTSWANA.—Kanye: near Pharing, O. B. Miller B/586.

TRANSVAAL.—Pietersburg: Strydpoort, Makapaansberg, *Rehmann* 5490.

A specimen collected in 1978 on the Pilanesberg, Rustenburg District, *Peeters, Gericke & Burelli* 590 may be this variety although the leaves are somewhat broader than in the type specimen.



FIG. 5.—*Melhania acuminata* var. *agnosta*. *Rehmann* 5490, iso-type in K.

8. *Melhania transvaalensis* Szyszyl., Polypet. Thalam. Rehm. 138 (1887); K. Schum. in Engl., Monogr. Afr. Pfl. 5: 11 (1900); Burtt Davy, Fl. Transv. 1: 261 (1926). Type: Transvaal, Elandsriver drift, *Rehmann* 4940.

Shrublet 14–60 cm tall, stems many arising annually from the base, laxly branched, new growth grey or off-white tomentose, tomentum interspersed with bunched hairs which are sometimes yellowish-brown. *Stipules* subulate, tomentose, 4–14 mm long. *Leaves* oblong, narrowly oblong or ovate-oblong, usually more than twice as long as broad, 2–9 cm long 0.7–3 cm broad, rounded to subtruncate at the apex, more or less rounded at the base, margins fairly distantly crenate dentate, upper surface with distinct coarse stellate pubescence only (not tomentose with fine bunched or stellate hairs), under surface white to grey stellate-tomentose; petiole stellate-tomentose, from about 5–20 mm long. *Inflorescence* axillary in upper leaves usually 1-flowered, stalk 1–2.5 cm long, often with an articulation somewhere about midway distinguishing the pedicel from the peduncle. *Epicalyx-bracts* ovate-lanceolate, long acuminate, subcordate at the base, 10–12 mm long, about 3.5 mm broad, stellate-tomentose on both surfaces. *Calyx* with lobes lanceolate, slightly longer and narrower than the epicalyx-bracts, 12–14 mm long, 3 mm broad, long acuminate, stellate-tomentose, with clustered yellow-brown hairs interspersed on the outer surface, subglabrous on inner. *Petals* yellow, about 13 mm long. *Stamens* slightly shorter than the ligulate 8 mm long staminodes. *Ovary* more or less ovoid, stellate-tomentose; style 2.5–3.5 mm long, branches 2.5 mm long. *Capsule* ovoid, about 12×8 mm, with off-white tomentum mixed with rather long grouped, yellowish hairs.

Found on stony hills and grassy slopes on dolomite formation. Recorded from restricted areas in the northern Cape and the Transvaal.

TRANSVAAL.—Pietersburg: Chuniespoort, *Codd & Verdoorn* 10461. Potchefstroom: Oudedorp, *Van Wyk* 1473. Potgietersrust: about 3,5 km NE of Potgietersrust, *Codd & Verdoorn* 10386. Pretoria: Hennops River, *Verdoorn* 2468.

CAPE.—Griqualand West: Knochbarragh, *Bruckner* 246.

A study of Rehmann's route when he collected the type of this species shows that the locality 'Elands-river Drift' was most probably in the northern part of the Pretoria District, north-east of Rust de Winter.

The herbarium sheet of *Schlechter* 4322 from the Transvaal Museum, now in the National Herbarium, Pretoria, has mounted on it a mixture of this species and *M. prostrata*. Another sheet of the same number, *Schlechter* 4322, which has been in the National Herbarium for many years, is purely *M. transvaalensis*, i.e. all the leaves are crenate-dentate and coarsely stellate on the upper surface (not entire with simple subappressed, long hairs or glabrous on the upper surface).

In Engler's Monographieen Afrikanischer Pflanzen, K. Schumann describes *M. transvaalensis* Szyszyl. as having the upper surface of the leaves 'appresse pilosis' which describes those of *M. prostrata*. It is difficult to explain this for he cites only *Rehmann* 4940, the type number. The sheet in the Kew Herbarium of *Rehmann* 4940 has the leaves stellate-pubescent on the upper surface as described by Szyszylowicz, the author of the species.

9. *Melhania rehmannii* Szyszyl., Polypet. Thalm. Rehm. 138 (1887)*, sphalm. *rehmannii*; K. Schum. in Engl. Monogr. Afr. Pfl. 5–10 (1900); Burt Davy, Fl. Transv. 1: 46 & 261 (1926); Wild in F.Z. 1: 53 (1961); M. Friedrich et al., F.S.W.A. 84: 26 (1969). Type: Transvaal, Klippan, *Rehmann* 5220.

M. griquensis H. Bol. in J. Linn. Soc., Bot. 24: 172 (28th Nov. 1887) excl. *Orpen* sub *Bolus* 6045 for the greater part. Type: Cape, Asbestos Mtns in kloof, *Burchell* 2050 (K, holo.; PRE!).

M. rupestris Schinz in Bull. Herb. Boissier ser. 2,2: 1008 (1902); M. Friedrich et al., F.S.W.A. 84: 26 (1969). Type: S.W. Africa., Oanop near Rehoboth *Fleck* 19a (Z).

Shrublet, low, usually under 30 cm tall, many stems from a woody base, new growth tomentose with ashy-grey, bunched, stellate and simple rather long hairs. *Stipules* subulate, about 7 mm long, usually turning a dark colour. *Leaves* ovate-oblong, oblong or obovate-oblong, 1–4 cm long, 0,8–2,3 cm broad, on both surfaces thickly ashy-grey stellate-tomentose at first, becoming thinly so, more or less truncate at the apex, rounded to broadly cuneate at the base, coarsely crenate-dentate; petiole 0,3–1,5 cm long. *Inflorescence* axillary, flowers usually solitary on slender cernuous pedicels, 5–10 mm long. *Epicalyx-bracts* broadly ovate about 5 mm long, oddly shaped, usually with a short basal claw, apex acute or rounded, ashy tomentose on both surfaces. *Calyx* with lobes lanceolate, about 7 mm long and 2,5 mm broad, dorsally tomentose pubescent, glabrous on inner face except at the tip. *Petals* orange-yellow, about 6 mm long, usually shorter than the calyx. *Stamens* almost as long as the ligulate, 3 mm long staminalodes. *Ovary* subglobose, tomentose in upper half; style about 2–5 mm long, branches about 1,5 mm long; ovules 2–3 in a cell. *Capsule* densely tomentose with mixed pubescence.

Found in bushveld, sandy flats or rocky ridges in dry country. Recorded from the north-western Cape, Swaziland, the central and northern Transvaal, Bot-

swana and South West Africa. Also occurs in Zimbabwe.

S.W.A.—Gobabis: *Liebenberg* 4627; Keetmanshoop: Brunau, Farm Kochena, *Giess & Muller* 11889.

BOTSWANA.—Central District: N.E. corner of the Makarikari Pan; O. West 9864. Ghanzi District: gate between S.W. Africa & Botswana, Mamuno, *Brown Manuno* 15. Ngamiland District: Mawabu Pan, *Buerger* 1010. S.E. District: Boteti delta, N.E. of Mopipi, *Standish-White* 15.

TRANSVAAL.—Groblersdal: near Marble Hall *Codd & Verdoorn* 10870. Lydenburg: Sekukuneland, farm Lordskraal, *Barnard & Mogg* 977. Pilgrims Rest: K.N.P., Acornhoek, *Gertenbach* 5413. Potgietersrus: 21 km from Roedtan on road to Grass Valley, *De Winter* 2222. Rustenburg: ± 5 km S.E. of Rooibokkraal, *Leistner* 3176. Soutpansberg: near Sandrivier, *Schlechter* 4590; Dongola Reserve, *Verdoorn* 2112.

SWAZILAND.—Big Bend, *Bayliss* BS 2720.

CAPE.—Beaufort West: ± 21 km S. of Layton, *Acocks* 23541. Hay: Asbestos Mts, *Burchell* 2050; Postmasburg, *Esterhuysen* 881. Herbert: Christian's Drift, *Leistner* 1998. Kimberley: Davis's Drift, ± 53 km W. of Kimberley, *Leistner* 1220. Kuruman: between Khosis & Maremane, *Esterhuysen* 2396.

As explained by Wild in Flora Zambesiaca, the confusion between *M. rehmannii* and *M. griquensis* (now pro parte under *M. virescens*) was initiated by H. Bolus, the author of *M. griquensis* who, although basing his description on the Orpen specimen from Griquatown (hence *griquensis*), cited *Burchell* 2050 from the Asbestos Mountains as the holotype: he saw this specimen at Kew in 1881 and mistakenly considered it to be conspecific with the Orpen specimen. Subsequent taxonomists such as K. Schuman, Wild and Burt Davy all agreed that two taxa were involved, for although closely related, they were readily distinguished by the epicalyx bracts which were subulate to linear in the Griquatown specimen and broadly ovate in Burchell's specimen from Asbestos Mountains. Following these taxonomists, it has become necessary to relegate *M. griquensis* sensu stricto to synonymy of *M. rehmannii*, and *M. griquensis* (two parte as to the description and Orpen specimen) to *M. virescens* (K. Schum.) K. Schum., the first published synonym.

For further distinguishing features and notes on distribution see under *M. virescens*.

10. *Melhania virescens* (K. Schum.) K. Schum. in Engl., Monogr. Afr. Pfl. 5: 6 (1900); M. Friedrich et al., in syn. in F.S.W.A. 84: 25 (1969). Type: South West Africa, Walvis Bay, Otjatambi, *Luderitz* 117.

M. griquensis H. Bolus in J. Linn. Soc., bot. 24: 172 (28 Nov. 1887) partly as to *Orpen* sub *Bolus* 6045 for the greater part; — var. *virescens* K. Schum. in Verh. bot. Ver. Prov. Brandenb. 30: 239 (1888). Type as for *M. virescens*.

M. bolusii Burt Davy. Fl. Transv. 1: 46 & 261 (1926).

Small bushy shrublet with a perennial rootstock, 5–30 cm tall, annual growth arising from the base, young branches grey tomentose. *Stipules* subulate, 5–10 mm long, usually pubescent with grey crisped hairs. *Leaves* with the blade often silvery grey-stellate-tomentose, the upper surface becoming thinly so or glabrescent, lower surface densely grey stellate-tomentose and sometimes with scattered glands as well, oblong-elliptic, 2 × 1, 2–5 × 2,5 cm, varying in texture from rather thin to rather thick, subtruncate or subrounded at the apex, rounded to somewhat cuneate at the base, margins crenate-dentate, lateral veins prominent and running into the lobes; petiole 5–15 mm long. *Inflorescence* axillary, usually 1-flowered, rarely 2-flowered, peduncle short and straight 2–5 mm long, pedicels, if present, up to 2,5 mm long. *Epicalyx-bracts* linear-subulate, 5–10 mm long, shorter than the calyx-lobes, grey stellate-tomentose on both surfaces. *Calyx* with lobes lanceolate, acuminate, 8–14 mm long, 3 mm broad,

*It has not been possible to establish the exact date in 1887 when the description of the species *M. rehmannii* Szyszyl. appeared, but it is assumed that it would not have been later than 28th November when *M. griquensis* H. Bol. was published.

grey tomentose dorsally. *Petals* bright yellow, 6–12 mm long, shorter than the calyx. *Stamens* slightly shorter than the ligulate staminodes. *Ovary* globose, densely stellate-tomentose; style 2–7 mm long, sometimes with a twist, branches 0.5–1 mm long. *Capsule* densely stellate-tomentose; seeds usually 4 in a cell.

Found in limy soils in the northern Cape, the Transvaal, Botswana and South West Africa.

S.W.A.—Gobabis: Witvlei, *Basson* 102. Grootfontein: Gautscha's Pan, *Story* 6224. Grunau: Gembokvlakte, *Le Roux* 663. Karibib: ± 4.3 km E. of Wilhelmstal, *De Winter* 2684. Maltahöhe: Buellspoor Mtn, *Srey* 2334. Okahandja: *Bradfield* 165. Okavango: Okosongomingo, *Holzhammer* 206. N.E. of Otjiwarongo, *De Winter* 2832. Outjo: Outjo Townlands, *De Winter* 3040. Rehoboth: Kalkrand, *Acocks* 18162. Windhoek: Farm Gam-mans, *Wanntorp* 122.

BOTSWANA.—Kwening District: Takatshanane Pan, *Wild* 5089. Nagamiland District.: Malie Rogoni, *Curson* 170.

TRANSVAAL.—Potgietersrus, 12.2 km N. of Grass Valley on road to Zebediela, *De Winter* 2237. Lydenburg: Farm Boskloof, *Fourie* 5/98.

CAPE.—Barkly West: ± 3.2 km W. of Borrelskop edge of Kaap Plateau, *Acocks* 219. Griqualand West: Boetsap, *Brueckner* 286. Hay: Floradale, *Esterhuysen* 2304. Kuruman: Cotton End, *Esterhuysen* 2170. Mafeking: Molopo Native Reserve, *Peeters, Gericke & Burelli* 224. Taung: Thoming, *Rodin* 3423. Vryburg: Taljaard Nature Reserve, *MacDonald* 77/22.

The confusion that existed between this species and *M. rehmannii* is understandable for, until one has recognized the features that distinguish them, these species look very much alike. The specimen on which Bolus based the greater part of his description of *M. griquensis*, i.e. *Orpen* sub *Bolus* 6015, is a mixed gathering. Four of the portions have the linear-subulate epicalyx bracts as described by Bolus, and the fifth, on the left hand side of the sheet, the ovate bracts of *M. rehmannii*. the distribution of these two species overlap in the northern Cape and parts of the Transvaal. A further distinguishing feature is that the peduncles in *M. virescens* are short (usually shorter than the petiole) and suberect and the pedicels, if present, are also short and suberect, whole in *M. rehmannii* the peduncles are somewhat longer (about as long as or longer than the petiole) and the pedicels, if present, longer, thinner and cernuous.

With regard to the distribution, as mentioned above, these species overlap in the northern Cape and the Transvaal, but *M. virescens* extends further westward in South West Africa. According to collectors' notes *M. virescens* is restricted to limy soil, while *M. rehmannii* is not so restricted and is much more widespread.

The specimens added by N. E. Brown to Bolus's original description of *M. griquensis*, namely *Burchell* 2385, *Holub* s.n. *Rehmann* 5220 are all *M. rehmannii*.

11. *Melhanian burchellii* DC., Prodr. 1: 499 (1824); Harv. in F.C. 1: 222 (1860); Burtt Davy, Fl. Transv. 1: 260 (1926); Wild in F.Z. 1, 1: 530 (1960); M. Friedrich et al. in F.S.W.A. 84: 24 (1969). Type: Cape, Kuruman District, *Burchell* 247.

M. serrata Schinz in Bull. Herb. Boissier ser. 2, 2: 1007 (1900). Type: Okahena, *Dinter* 499.

M. albicans Bak. f. in J. Bot. Lond. 39: 123 (1901); Burtt Davy Fl. Transv. 1: 260 (1926). Type: Transvaal, 'Pilgrims Rest' (more likely near Buttons Kop, Pietersburg District), *Greestock* s.n. (K. holo.; PRE, photo.!).

M. dinteri Engl. in Bot. Jb. 55: 350 (1919). Syntypes: S.W. Africa, several specimens including *Dinter* 645 & 2705 from Gobabis.

Plant subherbaceous, from a woody rootstock, low, up to about 90 cm tall, branches many, erect

ascending new growth densely stellate tomentose with long and short hairs, hairs sometimes foxy. *Stipules* subulate 3–10 mm long, tomentose but soon drying, curving and deciduous. *Leaves* elliptic-oblong (on flowering branches) narrowly oblong to linear oblong (on shoots), blade 3–10 cm long, 0.4–2 cm broad, shallowly to fairly distinctly toothed in the upper half stellate-tomentose on both surfaces, with short and long greyish hairs; petiole 3–17 mm long. *Inflorescences* axillary, 2–several-flowered, sometimes reduced to 1 flower, peduncle 1–6 cm long, pedicels 0.4–1 cm long; in some single-flowered inflorescences the peduncle and pedicel are indistinguishable, in others the articulation is obvious. *Epicalyx-bracts* linear-lanceolate to lanceolate, 7–11 mm long, up to 3 mm broad, the central usually the broadest stellate-tomentose on both surfaces with long and short hairs. *Calyx* with lanceolate lobes, slightly longer than the epicalyx 10–15 mm long, stellate-tomentose without, glabrous within. *Petals* yellow about 5 mm long, ligulate staminodes about 7 mm long, staminal tube about 1.5 mm long. *Style* 2–4 mm long, branches about as long as the style. *Ovary* tomentose with short and long off-white hairs. *Capsule* sub-globose to oblong-ovoid, stellate-tomentose with short and long hairs, up to 12 mm long.

Found in hot, dry parts of the north-western Cape, the Transvaal, Orange Free State, South West Africa and Botswana. Also occurs in Zimbabwe.

S.W.A.—Gobabis: 80 km S.E. of Sandveld, *Basson* 98. Outjo: Etosha National Park, *Le Roux & Grobler* 1238.

BOTSWANA.—Ghanzi: 8 km N. of Kang, *Wild* 5052. Kgalagadi: Kalahari Park, E. of Swartpan, Van der Walt 5748. Kweneng: Khutse Reserve, *Liebenberg* 8986.

TRANSVAAL.—Pietersburg: Commonage, *Acocks & Hafström* 962. Potgietersrus: about 16 km NE of Potgietersrus, *Codd & Verdoorn* 10390.

O.F.S.—Hoopstad: Bultfontein, *O'Connor* 126.

CAPE.—Barkly West: between Jacobs Rush & Sydney, *Acocks* 1556. Gordonias: Gembok National Park, *Leistner* 1007. Herbert: near Jacobs Rush, *Acocks & Hafström* H.1016. Kuruman: Cotton End, *Esterhuysen* 2237. Vryburg Tosca, *Peeters, Gericke & Burelli* 236.

In the Transvaal this species is very common between Potgietersrus and Pietersburg. The form which occurs here agrees with the description of *M. albicans*, but no grounds can be found for separating it from *M. burchellii* in spite of the disjunct distribution and the difference in habitat. In the Transvaal it grows on a heavy gravelly loam soil which is very different from the loose sand in which it is found in the north-western Cape. It may be noted that the type locality of *M. albicans* is given as Pilgrims Rest. The Rev. William Greenstock, who collected the original specimen, spent some time with Edward Button at Eersteling Mine, between Potgietersrus and Pietersburg, before proceeding to Pilgrims Rest. The plant has not been found at Pilgrims Rest again and it is considered that Greenstock collected this specimen in the neighbourhood of Eersteling. Several similar cases are known where species based on Greenstock specimens have been attributed to Pilgrims Rest, but subsequent investigation has shown that they were without doubt collected in the Eersteling area.

In the Flora Capensis under *M. burchellii* Miss Owen's specimen is cited as coming from 'Zooloo Country'; this is probably another case of the several instances where Miss Owen's specimens, collected after she had left Zululand (that is, after the Dingaan massacre), were labelled as from Zululand, whereas they probably were from the Kuruman or Zeerust Districts.

Regarding another citation in the Flora Capensis, namely Zeyher from the 'Aapies River', it is doubtful whether this locality is correctly cited, since this species has not been found near Pretoria.

Although none of the syntypes of *M. dinteri* has been seen, the description best fits the specimens in this taxon.

12. *Melhania damarana* Harv. in F.C. 2: 590 (1862); M. Friedrich et al., F.S.W.A. 84: 25 (1969). Type: South West Africa, Damaraland, Elliott s.n.

M. ovata var. *oblongata* K. Schum. in Engl., Monogr. Pfl. 5: 7 (1900), pro parte as to Marloth 1314.

Shrublet, 30–60 cm tall, with 1 or more erect or suberect stems from a woody base; branchlets long, erect or ascending, new growth stellate-tomentose with minute reddish stellate scales obvious in parts. *Stipules* subulate 5–10 mm long. *Leaves* variable in texture, shape and size, broadly to narrowly ovate-oblong or narrowly oblong, 2–7 cm long, 1–4,3 cm broad, from irregularly and coarsely crenate to finely and regularly toothed, rounded or obtuse at the base and sometimes obscurely cordate at the point of attachment, broadly rounded or slightly narrowing to an obtuse or acute apex, densely to subdensely stellate-tomentose or finely stellate-pubescent on both surfaces; petiole 1–2,5 cm long. *Inflorescence* axillary, 1–3-flowered; peduncle straight, persistent, 1,5–4,5 cm long, pedicels 5–1,5 cm long. *Epicalyx-lobes* lanceolate to broadly lanceolate-acuminate, acute, 7–11 mm long, 2,5–3 mm broad, tomentose with grouped hairs on both surfaces. *Calyx-lobes* lanceolate-acuminate, acute or narrowed into a subulate apical portion, 8–16 mm long, 3–3,5 mm broad, tomentose on the outer surface. *Petals* yellow, sometimes pale yellow, almost as long as the calyx or slightly longer, 7–20 mm long. *Stamens* with filaments about 2 mm long, anthers 5 mm long, ligulate, staminodes 6–11 mm long. *Ovary* subglobose, stellate-tomentose with short and long, creamy to pale yellow hairs; style 2–7 mm long, branches, 2–3 mm long; ovules 6 in a cell. *Capsule* globose to oblong-globose, stellate-tomentose, 5–12 mm long.

Occurs throughout the length of western South West Africa with one record to date from the northern Cape. Found mostly in dry conditions on the western side of the plateau at the Namib fringe.

S.W.A.—Kaokoland: W. of Etanga, De Winter & Leistner 5411. Karasburg: Mundis, Auret 5601. Luderitz: farm Weissenborn, Kings 2377. Maltahöhe: Abendruhe, Oliver, Muller & Steenkamp 6568. Omaruru: Numas Valley, Wiss 1415. Outjo: Otjiwarongo, Giess 8524. Rehoboth: Buffelspoort, Tölken & Hardy, 668. Tsumeb: 6 km S.W. Tsumeb Giess 8663. Walvis Bay: foothills Erosgebirges, Merxmüller & Giess 3566.

CAPE.—Hay: Rietkloof, Acocks 8520.

This species approaches *M. suluensis* from eastern Natal. For main distinguishing features see the key, p. 264.

M. damarana also resembles forms of *M. ovata* auct. found in tropical Africa with the type from South America, the principal distinguishing feature being the shape of the epicalyx-bracts, which are linear-subulate in *M. ovata* and lanceolate to broadly lanceolate in *M. damarana*.

13. *Melhania suluensis* Gerstner in Jl S. Afr. Bot. 12: 37 (1946). Type: Natal, Eshowe, near Dhlangubo store, Gerstner 2888 (BOL, holo.).

Suffrutex, main stem erect with many slender branches (no new growth from the base), 60–90 cm tall, new growth off-white tomentulose *Stipules* subulate, about 3 mm long, persistent. *Leaves* comparatively thin-textured, broadly ovate to ovate-oblong, sometimes broadly oblong, 1–4,5 cm long, 0,7–2,5 cm broad, very shortly stellate-tomentose on both surfaces, lower surface silvery-grey and sometimes with reddish brown stellate hairs from lepidote scales scattered on the raised nerves, upper surface darker and more uniformly stellate-tomentulose, rounded to shallowly cordate at the base, broadly rounded or rarely subacute at the apex, margins shallowly crenate-dentate; petiole 0,5–1,5 cm long. *Inflorescence* axillary 1–2-flowered, peduncles slender, 0,5–2 cm long, pedicels 0,3–1,2 cm long, in single-flowered inflorescence the peduncle and pedicel are indistinguishable and up to 2 cm long.

Epicalyx-bracts lanceolate-acuminate to ovate-lanceolate (not broadest at the base), 6–9 mm long, 2,5–3,5 mm broad, felted on both surfaces with short off-white stellate tomentum. *Calyx* with lobes lanceolate-acuminate, about 9 mm long and 3 mm broad, dorsally stellate-tomentulose. *Petals* lemon-yellow, about 10 mm long, 5–8 mm broad at the apex. *Stamens* with filaments about 0,5 mm long, anthers about 2,5 mm, united portion, 1 mm long, staminodes ligulate, about 5 mm long. *Ovary* subglobose, stellate-tomentose; style 3–7 mm long, branches about 1,5 mm long; ovules about 5 in a cell. *Capsule* subglobose, about 6×6 mm, densely and shortly stellate-tomentose.

Found in alluvial soil or on rocky slopes in dry bushveld at altitudes of 3–170 m. Recorded from the coastal area of Natal.

NATAL.—Camperdown: Umgeni Valley, Forbes 1259 (NH). Entonjaneni: Nogeys, Venter 3728. Eshowe: near Dhlangubo store, Codd & Verdoorn 10174. Hlabisa: Hluhluwe Game Reserve, Scott-Smith 71. Ngotshe: Itala Nature Reserve, Brown & Shapiro 445. Ubombo: Mkuze Poort, Ward 4071.

M. suluensis is closely related to *M. damarana*, which occurs in South West Africa, west of the escarpment. Besides this difference in distribution the main distinguishing features are given in the key on p. 264.

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UITTREKSEL

Die 13 spesies van Melhania in suidelike Afrika is hersien. Een van die probleme wat opgelos is, is 'n ou een betreffende die identiteite van M. rehmannii Szyszyl. en M. griquensis H. Bol. M. griquensis, in die enge sin, word in die sinonimie van M. rehmannii geplaas.

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