

Southern African species of *Mentha* L. (Lamiaceae)

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ABSTRACT

The species of *Mentha* L. occurring in Southern Africa are reviewed and a key is provided to two indigenous and one naturalized species. *M. wissii* Launert is reduced to *M. longifolia* (L.) Huds. subsp. *wissii* (Launert) Codd.

Although *Mentha* is a clearly defined genus, the determination of species limits is not an easy matter and there has been a proliferation of 'species' by certain authors in Europe. The result is that over a thousand specific and infraspecific names have been published, while conservative estimates place the number of good species at between twenty and thirty, most of which occur in the northern hemisphere. Perhaps Walafrid Strabo was justified when, in the ninth century A.D., he included the following lines in his 'Hortulus' (reproduced, with translation, by the Hunt Botanical Library, 1966):

'But if any man can name

The full list of all the kinds and all the properties
Of mint, he must be one who knows how many
fish

Swim in the Indian Ocean, how many sparks
Vulcan

Sees fly in the air from the vast furnace in Etna'.

Part of the difficulty in deciding on species limits has been attributed to hybridization. It is also evident that some species are extremely polymorphic, particularly *M. longifolia* (L.) Huds., in which 21 subspecies and 150 varieties were recognized by Briquet. The nomenclature of this species and of the related *M. spicata* L. has also been complicated by Linnaeus adopting a different treatment of the complex in the second edition of his *Species Plantarum* (1763) from that of the 1753 edition.

In his first edition of 1753, Linnaeus treated members of this complex as three varieties within a single species without indicating a typical variety, as follows:

- M. spicata* L.
- a. var. *viridis* L.
- b. var. *longifolia* L.
- c. var. *rotundifolia* L.

In edn 2 (1763), he raised the three varieties to species rank, but discarded the name *M. spicata*:

1. *M. viridis* (var. *viridis* L., edn 1)
2. *M. sylvestris* (var. *longifolia* L., edn 1)
3. *M. rotundifolia* (var. *rotundifolia* L., edn 1).

However, in the meantime, Hudson in his *Flora Anglica* (1762) had dealt with them on the following lines which conform with the modern approach:

1. *M. spicata* (var. *viridis* L., edn 1)
2. *M. longifolia* (L.) Huds.
3. *M. rotundifolia* (L.) Huds.

Unfortunately, most subsequent authors, until recently, have followed the nomenclature put

forward in Linnaeus's second edition instead of Hudson's earlier and more logical treatment which should have been adopted.

In the latter part of the same century, J. E. Smith, who had distinguished himself in 1784 by acquiring the Linnaean Herbarium, made a study of British mints and published his conclusions in *Trans. Linn. Soc. London* 5: 171–217 (1899). One point which affects our flora was his clarification of the distinction between *M. longifolia* and *M. spicata* on the basis of the retrorse-pubescent rhachis and the densely pubescent pedicels and calyx of *M. longifolia* as against the glabrous to sparingly pubescent parts of *M. spicata*.

Although this may serve as a basis for distinguishing between the two species, exceptions may be encountered (Harley 1972, 1972a; Harley & Brighton 1977). Over the greater part of its distribution range in southern Africa, *M. longifolia* (in which three subspecies are recognized) exhibits the characteristically pubescent rhachis and calyx. However, in a small area in the southern Cape Province between Humansdorp and Riversdale, and inland to the Swartberg, specimens have been recorded in which all parts are glabrous but which in general appearance agree with *M. longifolia* rather than with *M. spicata*. The link with *M. longifolia* is further supported by the occurrence of specimens with intermediate grades of pubescence. Cooke in *Flora Capensis* identified such glabrous specimens (Burchell 4798, 6457) as *M. viridis* (a synonym of *M. spicata*) but, with more ample material now available, it is considered that they belong in *M. longifolia* as a form of subsp. *polyadena* and that Cooke's key to the species and subspecies should be modified accordingly. In the present study it is concluded that *M. spicata* does not occur naturally in southern Africa, though it has been found as a recent adventive. It is therefore unlikely that the glabrous and intermediate specimens referred to above have been derived from hybridization between *M. longifolia* and *M. spicata*.

Several species are grown for their essential oils or as culinary herbs, the best known being the Peppermint (*M. x piperita* L.) and the Spearmint (*M. spicata*), both of which have been tried commercially in South Africa and are discussed by Baarschers, Horn & Rehm (1962). Several species are used medicinally, as is the case with the two indigenous species, *M. longifolia* and *M. aquatica*. The common mint, *M. spicata*, is widely grown for mint sauce and has been found as a garden escape here and there.

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KEY TO SPECIES AND SUBSPECIES IN SOUTHERN AFRICA.

Leaves sessile or subsessile; inflorescence cylindrical, tapering, 10–14 mm in diameter:

Rhachis, pedicels and calyx pubescent:

Leaves linear, 2–4 mm broad 1a. *M. longifolia* subsp. *wissii*

Leaves linear-lanceolate to lanceolate or oblong-lanceolate, more than 5 mm broad:

Leaves variously pubescent on one or both surfaces 1b. *M. longifolia* subsp. *capensis*

Leaves glabrous or with a few scattered hairs beneath 1c. *M. longifolia* subsp. *polyadena*

Rhachis, pedicels and calyx glabrous, though calyx teeth may be ciliate:

Leaves lanceolate, acuminate, margins shortly and often obscurely toothed. 1c. *M. longifolia* subsp. *polyadena*

Leaves oblong to ovate-elliptic, acute to obtuse, margin serrate; calyx teeth often ciliate 2. *M. spicata*

Leaves usually petiolate; inflorescence of oblong or globose flower clusters, 14–20 mm in diameter... 3. *M. aquatica*

1. *Mentha longifolia* (L.) Huds., Fl. Angl. ed. 1: 221 (1762); Briq. in Natürl. Pfl.Fam. 4,3a: 321 (1896). Cooke in Fl. Cap. 5,1: 304 (1910). Type: from Europe.

M. spicata var. *longifolia* L., Sp. Pl. 576 (1753). *M. sylvestris* L., Sp. Pl. ed. 2,2: 804 (1763); Smith in Trans. Linn. Soc. Lond. 5: 179 (1800); Bak. in Fl. Trop. Afr. 5: 451 (1900), nom. illegit. Type: as above.

Perennial rhizomatous herb; stems erect to straggling, up to 1,5 (–2) m long, usually retrorse-tomentose, rarely (southern Cape) glabrous or subglabrous. Leaves sessile to shortly petiolate; in southern Africa linear to linear-lanceolate, lanceolate or lanceolate-oblong, glabrous to finely felted or coarsely pubescent or white-tomentose beneath (see subspecies), freely gland-dotted, apex acuminate, base obtuse to truncate, margin entire to shortly and distantly toothed. Inflorescence cylindrical, tapering at the apex, 30–100 × 10–12 (–14) mm, usually of many verticils, often somewhat lax below, dense above; rhachis usually densely retrorse-tomentose, rarely subglabrous or glabrous; bracts reduced, bracteoles linear; pedicels usually hispid. Calyx tubular-campanulate, 2–2,5 mm long, densely to sparingly glandular hispid, rarely glabrous (southern Cape). Corolla white to mauve, 3–5 mm long. Stamens exerted or occasionally abortive.

An extremely polymorphic species, widespread in Europe and the Mediterranean region to eastern Asia, the Canary Islands and extending to Ethiopia and Kenya from where there is a gap to Zimbabwe and southern Africa, where 3 subspecies are recognized (see Key). Known in England as Horse Mint because the leaves are usually unpleasantly scented.

If the South African material were studied in isolation it is probable that separate species status would be accorded to subsp. *capensis* and subsp. *polyadena*, with subsp. *wissii* placed as a subspecies of *M. capensis*. Although subsp. *capensis* and subsp. *polyadena* overlap in Lesotho and in parts of the southern Cape, there are few specimens which can be regarded as intermediate between them. However, seen in perspective, they are obviously extensions of the *M. longifolia* complex. In the northern hemisphere the leaves of this species may be ovate to ovate-oblong or oblong-lanceolate, but in southern Africa the leaves tend to be narrower in relation to the length, being lanceolate-oblong to

linear-lanceolate or linear (subsp. *wissii*). In this region, subsp. *polyadena*, with glabrous leaves, is probably one of the most clear-cut subdivisions of the species. In subsp. *capensis* the leaves vary a good deal in the degree of pubescence and the subject is discussed more fully under the subspecies. For obvious reasons synonymy has been limited to names applicable in southern Africa.

(a) subsp. *wissii* (Launert) Codd, stat. nov.

Mentha wissii Launert in Mitt. bot. StSamml., Münch. 2: 311 (1957); Launert & Schreiber in Prodr. Fl. S.W. Afr. 123: 19 (1969). Type: S.W.A./Namibia, Brandberg, *Wiss* 1418 (FR, holo.: M; PRE!).

Leaves linear, grey-green, finely felted on both surfaces, 25–70 × 1,5–4 mm, margin entire or obscurely and distantly toothed.

Recorded from two localities in South West Africa/Namibia (the Brandberg and Naukluft) and from near Garies in Namaqualand; in watercourses and moist places. The leaves are said to be strongly and unpleasantly aromatic.

S.W.A.—2114 (Uis): Brandberg, Numas R. (–AA) *Wiss* 1418; 1440. 2416 (Maltahöhe): Naukluft (–AB), *Dinter* 8288; *Strey* 2008; *Giess* 3879; 8249; *Tölken & Hardy* 675; *Merxmüller & Giess* 28155; *Müller & Tilson* 882.

CAPE.—3018 (Kamiesberg): Kamiesberg (–AC), *Ecklon s.n.* (SAM); near Garies (–CA), *Pearson* 5265 (SAM); 5641.

This group of specimens is very closely allied to subsp. *capensis* and is separated only on the grounds of the rather distinctive linear leaves. The pubescence of the leaves and the inflorescence characters are in no way different from subsp. *capensis*. One or two specimens from Namaqualand have linear-lanceolate leaves and are therefore intermediate between subsp. *wissii* and subsp. *capensis*. In addition, Dr Harley (personal communication) has informed me that, in cultivation, subsp. *wissii* sometimes produces broader leaves than usual, suggesting that separate status for subsp. *wissii* can scarcely be supported. However, the plants from the wild state with linear leaves can be recognized without difficulty and, because they occupy a separate geographical area, it is considered that subspecies status is appropriate in the present state of our knowledge.

(b) subsp. *capensis* (Thunb.) Briq. in Natürl. Pfl.Fam. 4,3a: 321 (1896); Cooke in Fl. Cap. 5,1: 304 (1910); Phillips in Ann. S. Afr. Mus. 16: 242 (1918); Wilman, Checklist Griq. West 228 (1946);

Jacot Guill., Fl. Lesotho 239 (1971); Ross, Fl. Natal 304 (1972). Type: Cape, Lions Head, *Thunberg* s.n. (UPS).

M. capensis Thunb., Prodr. 95 (1800); Fl. Cap. ed. Schult. 444 (1823); Briq. in Bull. Soc. bot. Genève 5: (1889). *M. longifolia* var. *capensis* (Thunb.) Briq. in Bull. Herb. Boiss. 4: 687 (1896).

M. salicina Burch. ex Benth., Lab. 170 (1833); in DC., Prodr. 12: 168 (1848). *M. longifolia* subsp. *capensis* var. *salicina* (Burch. ex Benth.) Briq. in Natürl. Pfl.Fam. 4.3a: 321 (1896); Cooke, l.c. 304 (1910). Type: Cape, Roggeveld, Riet River, *Burchell* 1372 (K. holo.!).

M. lavandulacea sensu Benth. in E. Mey., Comm. 232 (1837); in DC., Prodr. 12: 165 (1848), partly.

—var. *latifolia* Benth. in DC., Prodr. 12: 165 (1848). Syntypes: Cape, Cafraria, Witbergen, *Ecklon* s.n.; *Drège* s.n. (K!); *Burchell* 2645 (K!).

M. capensis subsp. *bouvieri* Briq. in Bull. Soc. bot. Genève 5: 76 (1889). *M. longifolia* var. *bouvieri* (Briq.) Briq. in Bull. Herb. Boissier 4: 687 (1896). *M. longifolia* subsp. *bouvieri* (Briq.) Briq. in Natürl. Pfl.Fam. 4.3a: 321 (1896). Type: Cape (Uitenhage, Coega River), *Ecklon & Zeyher* 673 (in. Hb. Delessert. G. holo.;

SAM!). This specimen was cited, without locality, in Bull. Herb. Boissier 4: 687 (1896). The locality was obtained from the specimen in SAM.

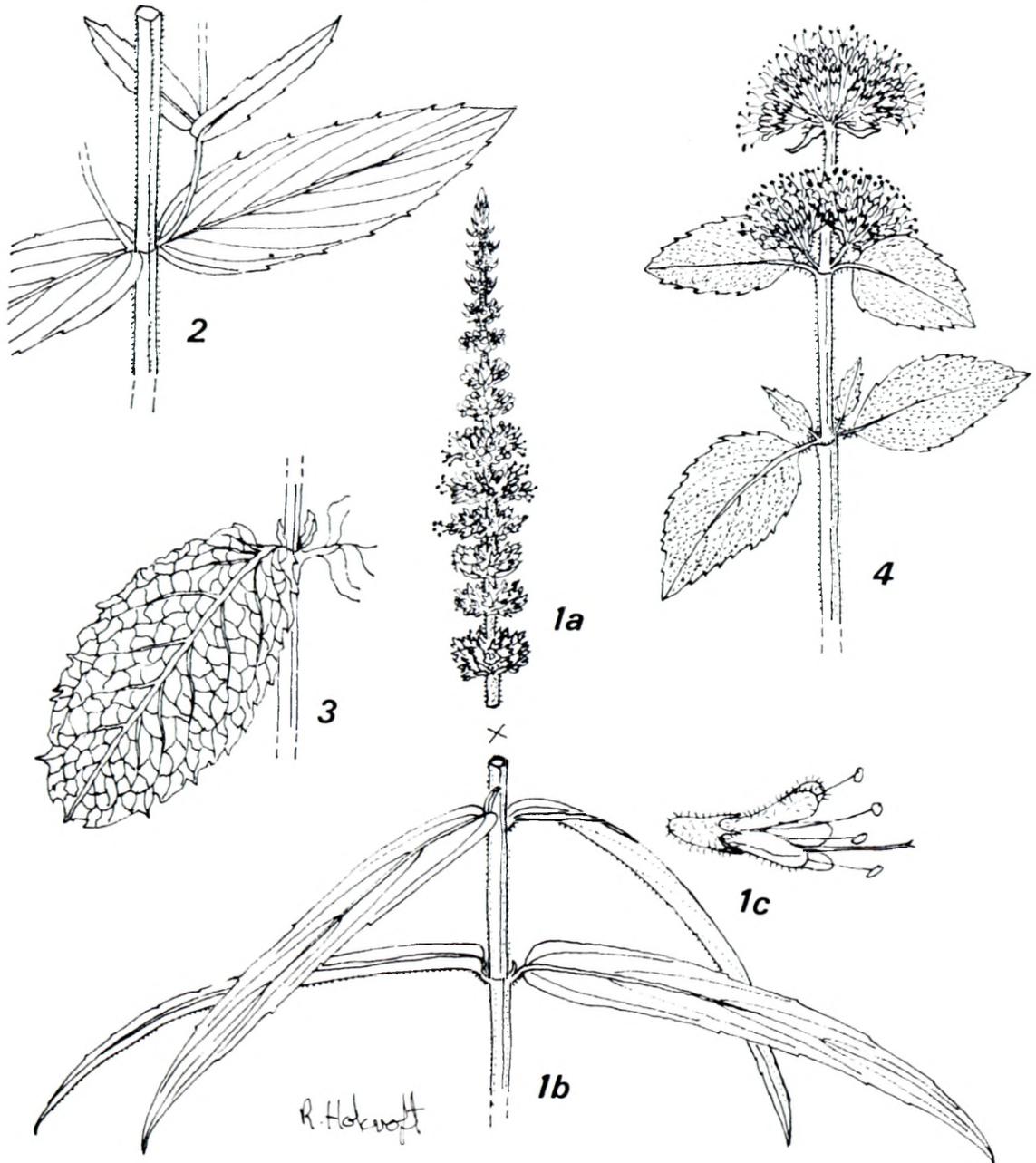
M. longifolia var. *obscuriceps* Briq. in Bull. Herb. Boissier 2: 695 (1894); Cooke, l.c. 304 (1910). Type: without collector or locality, in Herb. Delessert (G. holo.).

—var. *doratophylla* Briq., l.c. 695 (1894); Cooke, l.c. 305 (1910). Type: Cape, *Mund & Maire* (B).

—subsp. *capensis* var. *cooperi* Briq. ex Cooke, l.c. 304 (1910). Type: Cape, Fort Beaufort district, *Cooper* 555 (K. holo.!).

M. longifolia sensu Salter in Fl. Cape Penins. 695 (1950); sensu Jacot Guill., l.c. 239 (1971).

Leaves sparingly to finely pubescent and greyish to dark coloured above, densely white-tomentose to thinly greyish pubescent beneath, lanceolate to linear-lanceolate, (30–) 45–90 (–100) × (5–) 7–18 (–22) mm. apex acuminate, base obtuse to truncate, margin entire to shortly and distantly toothed. (Fig. 1a, b, c.)



FIGS 1–4.—1, *Mentha longifolia* subsp. *capensis*; 1a, inflorescence, × 1; 1b, leaves, × 1; 1c, flower, × 5 (plant from Kirstenbosch seed). 2, *M. longifolia* subsp. *polyadena*, × 1 (*Pont* s.n.) 3, *M. spicata*, × 1 (cultivated plant). 4, *M. aquatica*, × 1 (*Breyer* sub TRV 19520).

A fair amount of variation in leaf pubescence is included in the above concept of subsp. *capensis*. The typical form, with leaves white-tomentose beneath and greyish to dark-coloured above, includes the types of *M. salicina* Burch. ex Benth., subsp. *obscuriceps* Briq., subsp. *doratomylla* Briq., var. *latifolia* Benth. and var. *cooperi* Briq. ex Cooke. This form is distributed from the Orange Free State and adjacent parts of the south-western Transvaal, northern Cape and Lesotho to the eastern Cape and to the Peninsula, extending northwards to the Calvinia District.

Specimens are now included in subsp. *capensis* from north of this distribution area, e.g. from western Transvaal (*Thode* A1488, *Leendertz* sub TRV 11518), northern South West Africa/Namibia (*Leistner* et al. 143) and from Zimbabwe, which have concolorous grey-green leaves, finely pubescent above and thinly to coarsely pubescent beneath. Specimens with leaves having similar pubescence are found sporadically further south, e.g. *Pearson* 1553 and *Compton* 8512 from the Laingsburg area, and *Pappe* s.n. from Devils Peak. A specimen with pubescence of this kind (*Ecklon & Zeyher* 673 from Uitenhage area) was described as subsp. *bouvieri* Briq. In fact, further study is desirable of the extent to which the present concept of subsp. *capensis* grades into *M. longifolia* subsp. *schimperii* (Briq.) Briq. of Ethiopia and other forms of *M. longifolia* from the northern hemisphere.

Subsp. *capensis* appears to be absent from an area in the southern Cape between Humansdorp and Riversdale and, inland, to the Swartberg, in which area it is replaced by a form of subsp. *polyadena*. Along the margins of this area there appears to be some introgression between the two subspecies. Examples of specimens which have dark green concolorous leaves like subsp. *polyadena* but with the leaf surface puberulous to sparingly pubescent, especially on the nerves beneath are: *Lewis* 4222 and *Barker* 7883 from the Humansdorp area, and *Burchell* 7196 from near Riversdale. These specimens are all included in subsp. *polyadena* but an intermediate specimen with more strongly developed pubescence, *Goldblatt* 1686 from near Montagu, is included in subsp. *capensis*. On the other hand, both subspecies occur in Lesotho with no evidence of intermediates occurring.

ZIMBABWE.—1731, Harare district: *Eyles* 1929; *Phipps* 2493; *Biegel* 5189.

S.W.A./NAMIBIA.—1712 (Posto Velho); Kaokoveld, Otjom-borombongo (—BB), *Leistner* et al. 143.

TRANSVAAL.—2526 (Zeerust); Zeerust (—CA), *Thode* A1488; *Leendertz* sub TRV11518. 2725 (Bloemhof); S.A. Lombard Nature Reserve (—DA), *Leistner* 113.

O.F.S.—2828 (Bethlehem): Bethlehem (—AB), *Potts* 2993; *Roberts* 3307; farm Koeberg (—CB), *Scheepers* 1858; Golden Gate National Park (—DA), *Liebenberg* 6853. 2924 (Hopetown): Riet River Station (—BA), *C. A. Smith* 5183. 2925 (Jagersfontein): Fauresmith (—CB); *C. A. Smith* 5240.

LESOTHO.—2828 (Bethlehem): Leribe (—CC), *Dieterlen* 214; Khabos (—CD), *Fawkes* 269 (NBG). 2927 (Maseru): Makhaleng (—AB), *Ruch* 1603; 1604; Mahlatsa (—BB), *Jacot Guillarmod* 457; Roma (—BC), *Schmitz* 308; Maseru (—BD), *Schmitz* 661. 2928 (Marakabei): Molimo Nthuze (—AA), *Schmitz* 7230; Meniameng River (—AA), *Coetzee* 474; Bokong store (—AC), *Jacot Guillarmod* 161; Blue Mtn Pass (—AC), *Bayliss* 2624. 2929

(Underberg): Mokhotlong (—AC), *Compton* 21530; *Jacot Guillarmod* 1106; *Liebenberg* 5782; Sehlabathebe Nat. Park (—CC), *Hoener* 2209. 3028 (Matatiele): Qachas Nek (—BA), *Beverley & Hoener* 551.

CAPE.—2823 (Griekwastad): Ongeluk (—CA), *Burchell* 2645 (K); Campbell (—DC), *Wiltman* sub KMG 23501. 2824 (Kimberley): Riet River (—CD), *Acocks* H1138. 2922 (Prieska): Orange River, near Prieska (—DA), *Bryant* 1055. 3026 (Aliwal North): Aliwal North (—DA), *Flanagan* 1519. 3027 (Lady Grey): Witteberg (—CD?), *Drège* 4766a (K). 3028 (Matatiele): Naudes Nek (—CA), *Hutchinson & Dyer* 3130;

Hilliard & Burt 3775. 3029 (Kokstad): Kokstad (—CB), *Mogg* 4834. 3118 (Vanrhynsdorp): Heerenlogement (—DC), *Pole Evans & Van Nouhuys* 56. 3119 (Calvinia): (—BD), *Adamson* D108; *C. A. Smith* 2467. 3123 (Victoria West): Murraysburg (—DD), *Thorne* s.n. 3124 (Hanover): Roelofsfontein (—DA), *Hanekom* 2073. 3125 (Steynsburg): Middelburg (—AC), *Verdoorn* 1566; *Gill* 44; *Watt & Brandwyk* 1941; *Theron* 116; 3126 (Queenstown): Jamestown (—BB), *Barker* 2153 (NBG). 3128 (Umtata): Tsitsa River (—BA), *Schlechter* 6372. 3219 (Wuppertal): Baliesgat (—CB), *Hanekom* 1378. 3220 (Sutherland): Great Riet River (—BB), *Burchell* 1372 (K); Verlaten Kloof (—DA), *Hall* 977 (NBG). 3221 (Merweville): Fraserburg district, Rietvlei River (—AB), *Shearing* 17. 3222 (Beaufort West): Beaufort West (—BD), *Gibbs Russell* et al. 203. 3225 (Somerset East): Bergkwaga Park (—AD), *Brynard* 71; *Muller* 617; Somerset East (—DA), *Brown* s.n. 3226 (Fort Beaufort): *Cooper* 555 (K); Shiloh (—BB), *Baur* 53 (K); Alice (—DD), *Acocks* 9816; *Giffen* 1425; 1554. 3227 (Stutterheim): Debe Nek (—CC), *Batten* 6/113 (NBG); King Williams's Town (—CD), *Sim* s.n.; Komga (—DB), *Flanagan* 424. 3228 (Butterworth): Kentani (—CB), *Pegler* 1157. 3318 (Cape Town): Devils Mt (—CD), *Ecklon & Zeyher* s.n. (SAM); *Pappe* s.n. (SAM); Lions Head (—CD), *Wolley Dod* 2337. 3319 (Worcester): Prince Alfred (—AD), *Schlechter* 9985; Muishond River (—AD), *Esterhuysen* 1802; Robertson (—DD), *Brüten* 639. 3320 (Montagu): Matjesfontein (—BA), *Pearson* 1553; Whitehill (—BA), *Compton* 8512 (NBG); 13171 (NBG); Montagu (—CC), *Goldblatt* 1686. 3325 (Port Elizabeth): near Enon (—BC), *Drège* 4766c (K); Winterhoeksberg (—CB), *Ecklon & Zeyher* s.n.; Coega River, *Ecklon & Zeyher* 673 (SAM). 3326 (Grahamstown): Alicedale (—AC), *Brink* 109; Grahamstown (—BC), *Bowker* s.n.; Alexandria (—CB), *Archibald* 4938. 3327 (Pieddie): Kidds Beach (—BA), *L. E. Taylor* 5586 (NBG). 3418 (Simonstown): Somerset West (—BB), *Parker* 3780 (NBG). 3419 (Caledon): Caledon (—AB), *Rogers* 17548.

Commonly known in the Karoo and Namaqualand as Balderjan or variations of it, such as Ballerja, Balterja etc. It is also referred to as Wild Mint or Kruisement (Kruistemunt) from the Dutch name for *M. spicata*. The leaves are variously described as having a strong mint-like odour or as smelling of peppermint and are frequently used as a tea to relieve colds and fevers. For this purpose the leaves may be boiled with a little water and sugar until a syrup is formed, of which a tablespoonful is taken three times a day (*Hanekom* 1378).

In Lesotho the vernacular name for both subsp. *capensis* and subsp. *polyadena* is 'koena', a crocodile, reputedly because the plants occur in wet places. Another reason could be that the lanceolate, tapering leaves with small teeth are reminiscent of the shape of the reptile as seen from above. In addition to an infusion being taken as a cure for colds, fresh plants are put under the bedding of a patient in the belief that this will help him to breathe more easily.

(c) subsp. *polyadena* (Briq.) Briq. in Natürl. Pfl.Fam. 4,3a: 321 (1896); Cooke in Fl. Cap. 5,1: 303 (1910); Philips in Ann. S. Afr. Mus. 16: 241 (1918); *Jacot Guill.*, Fl. Lesotho 239 (1971). Type: Transvaal, *Otto Lincke* (G).

M. sylvestris L. subsp. *polyadena* Briq. in Bull. Soc. bot. Genève 5: 84 (1889). Type: as above.

M. viridis sensu Benth. in DC., Prodr. 12: 168 (1848), partly, as to Burchell 4798 (sphalm 4718), 7196; sensu Cooke, l.c. 305 (1910).

Leaves glabrous on both surfaces or with a few scattered hairs, lanceolate to elliptic-lanceolate or oblong-lanceolate, 35–80 × 8–18 mm, apex acuminate, base obtuse to truncate, margin usually shortly toothed, occasionally subentire. *Rhachis* usually retrorse-tomentose, occasionally glabrous — see note below. (Fig. 2.)

Recorded from two disjunct areas: (a) from the Transvaal, Swaziland, northern Natal, eastern Orange Free State and northern Lesotho; and (b) from the southern Cape Province between the Humansdorp and Riversdale districts and inland to the Swartberg (Fig. 5). Found along watercourses, on river banks and in moist places.

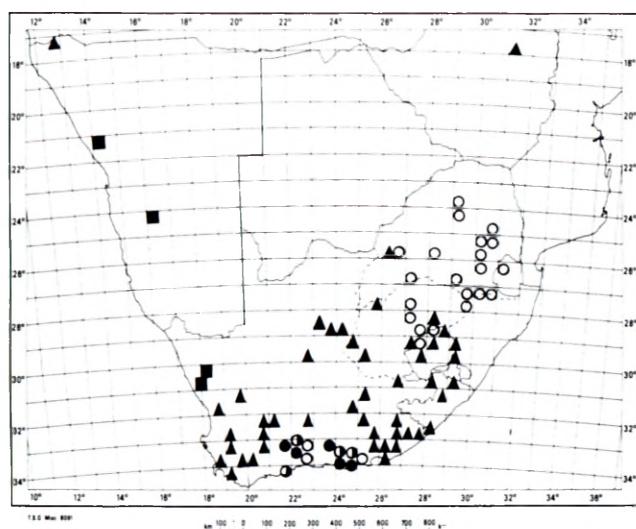


FIG. 5.— ■, *Mentha longifolia* subsp. *wissii*; ▲, *M. longifolia* subsp. *capensis*; ○, *M. longifolia* subsp. *polyadena* (typical); ●, *M. longifolia* subsp. *polyadena* (glabrous rhachis); ◐, *M. longifolia* subsp. *polyadena* (sparingly pubescent rhachis).

The specimens from area (a) are relatively uniform with the rhachis retrorse-tomentose and the calyx densely glandular-pubescent. In area (b), on the other hand, there is a good deal of variation in the degree of pubescence of the rhachis. Some specimens are typical (Oliver 5661), some are sparsely pubescent (Muir 1973, 2004, Dahlstrand 3506), whereas others are completely glabrous (Acocks 18189, Fourcade 3235). In all the specimens from area (b) the leaf shape is lanceolate to oblong-lanceolate, acuminate, and the general appearance is so similar to the rest of the complex that it would be illogical to separate the glabrous specimens from subsp. *polyadena*, as was done by Cooke in *Flora Capensis*.

In *M. spicata* (= *M. viridis*), the rhachis and calyx are glabrous but the South African records of this species, which are considered to be garden escapes, have ovate-oblong leaves with serrate margins and can usually be readily distinguished from the glabrous specimens of *M. longifolia* subsp. *polyadena*.

It is interesting that subsp. *capensis*, which is common in the rest of the Cape Province, appears to be absent from area (b). The two subspecies meet in the Humansdorp, Riversdale, Montagu and Swartberg areas and the evidence of introgression between the two is discussed under subsp. *capensis*. As noted previously, the two occur together in Lesotho, but no intermediates from this area have been encountered.

TRANSVAAL.—2329 (Pietersburg): Marabastad (–CD), Schlechter 4682. 2429 (Zebediela): Potgietersrus (–AA), Leendertz sub TRV6553. 2430 (Pilgrims Rest): Ohrigstad Nature Reserve (–DC), Jacobsen 2637. 2526 (Zeerust): Swartuggens (–DA), Sutton 965. 2527 (Rustenburg): Crocodile River (–DB?), Burke 161 (K). 2528 (Pretoria): Aapies River (–CA), Burt Davy 1077; Pyramids (–CA), Mogg 16768; Prinshof (–CA), C. A. Smith 1464; Pretoria (–CA), Leendertz sub TRV8561; Pienaars River (–CB), Nelson sub TRV11556; Groenkloof (–CC), Turner sub PRE10014; Wolwekloof (–CC), Mogg 15890; Fountains Valley (–CC), Repton 768. 2530 (Lydenburg): Lydenburg (–AB), Wilms sub TRV15888; Dullstroom (–AC), Galpin 13078; Rosehaugh (–BD), Mogg 13679; Waterval Onder (–CB), Jenkins sub TRV6706; Waterval Boven (–CB), Britten 4733; Machadodorp (–CB), Young 26642; Codd 8262. 2627 (Potchefstroom): Klipdrif (–CB), Theron 1200. 2629 (Bethal): Standerton (–CD), Leendertz sub TRV11015; near Amersfoort (–DD), Burt Davy 4010 (SAM). 2630 (Carolina): Carolina (–AA), Nicholson H4608. 2729 (Volksrust): Volksrust (–BD), Jenkins sub TRV9309. 2730 (Vryheid): Wakkerstroom (–AC), Van Dam sub TRV24331; Beeton 129 (SAM); Piet Retief (–BB), Sidey 1976.

O.F.S.—2727 (Kroonstad): Kroonstad (–CA), Pont s.n. 2827 (Senekal): Willem Pretorius Game Reserve (–AC), Leistner 3019; near Ficksburg (–DD), Jarman 132. 2828 (Bethlehem): Bethlehem (–CA), Le Roux s.n. (NBG); Witsieshoek (–DB), Junod sub TRV17320.

SWAZILAND.—2631 (Mbabane): Mbabane (–AC), Compton 25764; 31162 (NBG).

NATAL.—2729 (Volksrust): Boscobello (–DB), Jenkins sub TRV12472.

LESOTHO.—2828 (Bethlehem): Leribe (–CC), Dieterlen 118; Lubke 219. 2927 (Maseru): Roma (–BC), Schmitz 4517; 6588.

CAPE.—3321 (Ladismith): Gamkaskloof (–BC), Van Daalen 124 (glabrous). 3322 (Oudtshoorn): Swartberg Pass (–AC), Marloth 12723 (glabrous); Boomplaas, Cango Valley (–AC), Hugo 29 (intermediate); Meiringspoort (–BC), Acocks 18289 (glabrous); Swartberg, east of Blesberg (–BC), Oliver 5661 (typical); Farm Drinkrivier (–DA), Dahlstrand 3506 (typical); Kammanassie Mt (–DA/DB), Rycroft 1900 (NBG, glabrous). 3323 (Willowmore): Baviaanskloof (BC/BD), Bayliss 3818 (NBG, glabrous). 3324 (Steytlerville): between Cambria and Smitskraal (–CB); McMurty 1244 (intermediate); Kouga River (–CC), Fourcade 3235 (glabrous); between Melk River and Gamtoos River (–DD), Burchell 4798 (glabrous); between Patentie and Mistkraal (–DD), Lewis 4222 (SAM, intermediate). 3325 (Port Elizabeth): Gamtoos River (–CC), Barker 7883 (NBG, intermediate). 3421 (Riversdale): near Krombek River (–AA), Burchell 7196 (K, intermediate); Gourits River, Burchell 6457 (K, glabrous); Gourits River mouth (–BD), Muir 2004 (intermediate). Grid unknown: Zeekoedrif, Muir 1973 (intermediate).

The qualifying notes relating to pubescence after the Cape specimens refer to the pubescence of the rhachis and calyx.

The plant is used medicinally in the same way as subsp. *capensis*.

2. *Mentha spicata* L., Sp. Pl. 576 (1753); Huds., Fl. Angl. 221 (1762); Bailey, Cyclop. Hort. ed. 21,2: 2035 (1962); Harley in Fl. Europ. 3: 186 (1972). Type: from Europe, in Herb. Hort. Cliff. (BM).

M. spicata var. *viridis* L., Sp. Pl. 576 (1753). *M. viridis* (L.) L., Sp. Pl. ed. 2: 804 (1763); Smith in Trans. Linn. Soc. Lond. 5: 185 (1800); Benth., Lab. 173 (1833); in DC., Prodr. 12: 168 (1848), excl. Burchell 4718, 7196; Wilman, Checklist Griq. West 228 (1946); Salter in Fl. Cape Penins. 695 (1950). Type: as above.

Perennial rhizomatous herb; stems ascending up to 600 mm tall, glabrous to sparingly pubescent. Leaves sessile to shortly petiolate; blade glabrous or nearly so, somewhat rugose, freely gland-dotted on both surfaces, lanceolate-oblong to ovate-oblong or ovate, 30–50 (–60) × 13–20 mm, apex acute, base obtuse to truncate, margin serrate. Inflorescence cylindrical, 30–60 × 10–14 mm; rhachis and pedicels glabrous; bracts reduced, bracteoles linear, glabrous. Calyx tubular-campanulate, 2–2.5 mm long, glabrous; teeth sometimes ciliate. Corolla mauve to whitish, 4 mm long. (Fig. 3.)

Commonly known as Spearmint, this is the most widely grown species in kitchen gardens for mint sauce etc, and is also cultivated commercially for its essential oil, which is used medicinally and in confectionery. Its origin is lost in antiquity, having probably arisen in cultivation in Europe in ancient times. Its chromosome complement (usually $2n = 48$) suggests that it is an allopolyploid, possibly derived from *M. suaveolens* Ehrh. and *M. longifolia* (L) Huds., both of which normally have $2n = 24$ (Harley, l.c.). It exists in a wide range of forms, the more desirable ones being propagated vegetatively, and the species is now widely naturalized throughout the world. In South Africa it has been recorded as a garden escape here and there, in moist places.

O.F.S.—2727 (Kroonstad): Heilbron (–BD), Goossens 510.

CAPE.—3423 (Knysna): (–AA), Kapp 93.

CULTIVATED.—Transvaal: Ermelo district, Shand s.n. Cape: Cape Town, Marloth 7328; Somerset East, Brown s.n.; Grahamstown; Brink 62.

As pointed out under the previous heading, certain Burchell specimens identified as *M. viridis* by Bentham in DC., Prodr. 12: 168 (1848) and Cooke in Fl. Cap. 5,1: 305 (1910) are now considered to be a glabrous form of *M. longifolia* subsp. *polyadena*.

3. *Mentha aquatica* L., Sp. Pl. 576 (1753); Thunb., Fl. Cap. ed. Schult. 444 (1823); Benth., Lab. 176 (1833); in E. Mey., Comm. 232 (1837); in DC., Prodr. 12: 170 (1848); Briquet in Natürl. Pfl.Fam. 4,3a: 320 (1896); Cooke in Fl. Cap. 5,1: 305 (1910); Phillips in Ann. S. Afr. Mus. 16: 242 (1918); Wilman, Checklist Griq. West 227 (1946); Salter in Fl. Cape Penins. 696 (1950); Jacot Guill., Fl. Lesotho 239 (1971); Ross, Fl. Natal 304 (1972); Harley in Fl. Europ. 3: 185 (1972). Type: from Europe.

M. dumetorum Schult. var. *natalensis* Briq. in Bull. Herb. Boissier 2: 702 (1894). Type: Natal, Medly Wood 402 (B, holo.).

Perennial rhizomatous herb; stems ascending to 0.8 m tall or trailing in water to 1.5 m long, subglabrous or sparingly to densely pubescent. Leaves petiolate; blade glabrous to fairly densely pubescent, freely gland-dotted on both surfaces, lanceolate to broadly ovate, 20–55 × 5–26 mm, apex acute, base cuneate to rounded, margin obscurely to distinctly toothed. Inflorescence terminal, of 1–3 (–4) spaced flower clusters up to 20 mm

in diameter, the uppermost globose to oblong-capitate, subtended by reduced leaves (bracts), the lower clusters somewhat distant, globose, subtended by normal leaves; bracteoles linear; rhachis and pedicels subglabrous to densely pubescent. Calyx tubular, sparsely to densely pubescent, 3–4 mm long. Corolla pale to deep mauve, pinkish or purple. (Fig. 4).

Widely distributed in Europe and around the Mediterranean, extending eastwards to Siberia; found in tropical Africa from Kenya, Tanzania, Zaïre and Malawi, with a record from the swamps of northern Botswana; locally common in marshes and wet places in the higher rainfall areas of the Transvaal and adjacent parts of northern Cape and Swaziland, widespread in Natal, eastern O.F.S. and Lesotho, extending through eastern Cape, along the coast to the Peninsula and northwards along the mountains to Ceres. (Fig. 6.)

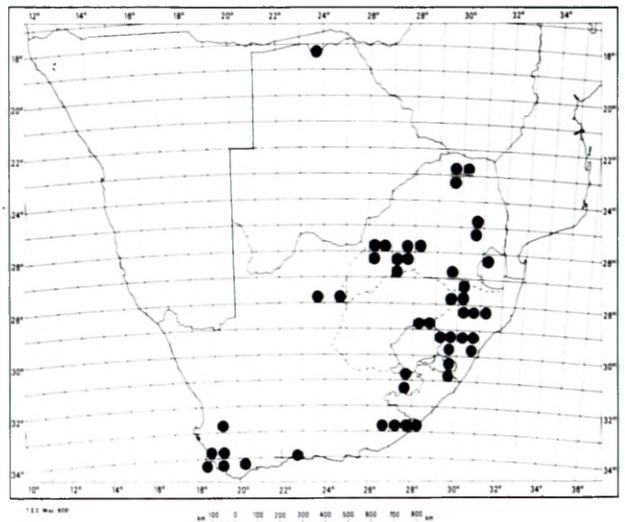


FIG. 6.—●, *Mentha aquatica*.

There is a good deal of variation in leaf shape from lanceolate to broadly ovate, and in pubescence from glabrous (Louw 1391 and Leendertz sub TRV11519 from western Transvaal) to a densely tomentose condition (Galpin 14807, 14830, Breijer sub TRV16991 and Mauve 4860 from Natal). However, there is a complete range of intermediate forms and no clear geographical pattern in the variation emerges. The leaves are usually petiolate but may be sessile in some specimens. The latter may be readily separated from *M. longifolia* and *M. spicata* by the often widely spaced, oblong to globose flower clusters with the lower clusters, when present, being subtended by normal leaves.

M. aquatica is said to have a strong minty scent and is known as Water Mint or Kruisement (Kruistement). An infusion of the leaves is taken for colds and as a tonic, being highly regarded (Hanekom 1379) as a treatment for promoting the flow of milk in nursing mothers.

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UITTREKSEL

Die spesies van Mentha L. wat in suider-Afrika voorkom, is hersien en 'n sleutel vir twee inheemse en

een genaturaliseerde spesies is voorsien. M. wissii Launert is verander na M. longifolia (L.) Huds. subsp. wissii (Launert) Codd.

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