

FLORA OF SOUTHERN AFRICA

VOLUME 19

Editor: O.A. Leistner



Part 3: Anacardiaceae
Fascicle 1: Rhus

by R.O. Moffett



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FLORA OF SOUTHERN AFRICA

which deals with the territories of

SOUTH AFRICA, CISKEI, TRANSKEI, LESOTHO, SWAZILAND, BOPHUTHATSWANA,
NAMIBIA, BOTSWANA AND VENDA

VOLUME 19, PART 3: ANACARDIACEAE

FASCICLE 1: RHUS

by

R.O. Moffett

Scientific editor: O.A. Leistner

Technical editor: E. du Plessis



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* Date of publication: September 1993

INTRODUCTION

This fascicle was compiled in accordance with the Guide for Contributors to the *Flora of southern Africa* (compiled by Leistner, Ross & De Winter and available from the Editor, National Botanical Institute, Private Bag X101, 0001 Pretoria).

The distribution areas shown on maps in this fascicle represent the distribution of the taxon concerned only in the region covered by this flora.

The numbering of the genus is according to De Dalla Torre & Harms in their *Genera Siphonogamarum* (1900–1907).

PLAN OF *FLORA OF SOUTHERN AFRICA*

Cryptogam volumes will in future not be numbered, but will be known by the name of the group they cover. The number assigned to the volume on Charophyta therefore becomes redundant.

Exotic families are marked with an asterisk.

Published volumes and parts are shown in italics.

INTRODUCTORY VOLUMES

The genera of southern African flowering plants

Vol. 1: *Dicotyledons* (published 1975)

Vol. 2: *Monocotyledons* (published 1976)

Botanical exploration of southern Africa (published 1981)

CRYPTOGAM VOLUMES

Charophyta (published as Vol. 9 in 1978)

Bryophyta: Part 1: Mosses: Fascicle 1: *Sphagnaceae–Grimmiaceae* (published 1981)

Fascicle 2: *Gigaspermaceae–Bartramiaceae* (published 1987)

Fascicle 3: *Erpodiaceae–Hookeriaceae*

Fascicle 4: *Fabroniaceae–Polytrichaceae*

Pteridophyta (published 1986)

FLOWERING PLANTS VOLUMES

Vol. 1: *Stangeriaceae, Zamiaceae, Podocarpaceae, Pinaceae**, *Cupressaceae, Welwitschiaceae, Typhaceae, Zosteraceae, Potamogetonaceae, Ruppiaceae, Zannichelliaceae, Najadaceae, Aponogetonaceae, Juncaginaceae, Alismataceae, Hydrocharitaceae* (published 1966)

Vol. 2: *Poaceae*

Vol. 3: *Cyperaceae, Arecaceae, Araceae, Lemnaceae, Flagellariaceae*

Vol. 4: Part 1: *Restionaceae*

Part 2: *Xyridaceae, Eriocaulaceae, Commelinaceae, Pontederiaceae, Juncaceae* (published 1985)

Vol. 5: Part 1: *Colchicaceae, Eriospermaceae, Asphodelaceae*

Part 2: *Alliaceae, Liliaceae**, *Hyacinthaceae*

Part 3: *Dracaenaceae, Asparagaceae, Luzuriagaceae, Smilacaceae* (published 1992)

Vol. 6: *Haemodoraceae, Amaryllidaceae, Hypoxidaceae, Tecophilaceae, Velloziaceae, Dioscoreaceae*

Vol. 7: *Iridaceae*: Part 1: *Nivenioideae, Iridoideae*

Part 2: *Ixiodeae*: Fascicle 1

Fascicle 2: *Syringodea, Romulea* (published 1983)

Vol. 8: *Musaceae, Strelitziaceae, Zingiberaceae, Cannaceae**, *Burmanniaceae, Orchidaceae*

Vol. 9: *Casuarinaceae**, *Piperaceae, Salicaceae, Myricaceae, Fagaceae**, *Ulmaceae, Moraceae, Cannabaceae**, *Urticaceae, Proteaceae*

Vol. 10: Part 1: *Loranthaceae, Viscaceae* (published 1979)

Santalaceae, Grubbiaceae, Opiliaceae, Olacaceae, Balanophoraceae, Aristolochiaceae, Rafflesiaceae, Hydnoraceae, Polygonaceae, Chenopodiaceae, Amaranthaceae, Nyctaginaceae

Vol. 11: *Phytolaccaceae, Aizoaceae, Mesembryanthemaceae*

Vol. 12: *Portulacaceae, Basellaceae, Caryophyllaceae, Illecebraceae, Cabombaceae, Nymphaeaceae, Ceratophyllaceae, Ranunculaceae, Menispermaceae, Annonaceae, Trimeniaceae, Lauraceae, Hernandiaceae, Papaveraceae, Fumariaceae*

Vol. 13: *Brassicaceae, Capparaceae, Resedaceae, Moringaceae, Droseraceae, Roridulaceae, Podostemaceae, Hydrostachyaceae* (published 1970)

Vol. 14: *Crassulaceae* (published 1985)

Vol. 15: *Vahliaaceae, Montiniaceae, Escalloniaceae, Pittosporaceae, Cunoniaceae, Myrothamnaceae, Bruniaceae, Hamamelidaceae, Rosaceae, Connaraceae*

- Vol. 16: Fabaceae: Part 1: *Mimosoideae* (published 1975)
 Part 2: *Caesalpinioideae* (published 1977)
 Part 3: Papilionoideae: Fascicle 1: Swartzieae—Robinieae
 Fascicle 2: Indigofereae
 Fascicle 3: Desmodieae, Phaseoleae
 Fascicle 4: Psoraleae—Galegeae
 Fascicle 5: Loteae—Liparieae
 Fascicle 6: *Crotalarieae (Aspalathus)* (published 1988)
 Fascicle 7: *Crotalarieae (Bolusia—Lebeckia)*
 Fascicle 8: *Crotalarieae (Lotononis—Wiborgia)*
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 Part 2: Rutaceae
 Part 3: *Simaroubaceae, Burseraceae, Ptaeroxylaceae, Meliaceae* (Aitonieae), *Malpighiaceae* (published 1986)
- Vol. 19: Part 1: Polygalaceae, Dichapetalaceae
 Part 2: Euphorbiaceae, Callitrichaceae, Buxaceae
 Part 3: Anacardiaceae: Fascicle 1: *Rhus* (published 1993)
 Fascicle 2: remaining genera
 Aquifoliaceae
- Vol. 20: Celastraceae, Icacinaceae, Sapindaceae, Melianthaceae, Greyiaceae, Balsaminaceae, Rhamnaceae, Vitaceae
- Vol. 21: Part 1: *Tiliaceae* (published 1984)
 Malvaceae, Bombacaceae, Sterculiaceae
- Vol. 22: *Ochnaceae, Clusiaceae, Elatinaceae, Frankeniaceae, Tamaricaceae, Canellaceae, Violaceae, Flacourtiaceae, Turneraceae, Passifloraceae, Achariaceae, Loasaceae, Begoniaceae, Cactaceae* (published 1976)
- Vol. 23: Geissolomaceae, Penaeaceae, Oliniaceae, Thymelaeaceae, Lythraceae, Lecythidaceae
- Vol. 24: Rhizophoraceae, Combretaceae, Myrtaceae, Melastomataceae, Onagraceae, Trapaceae, Haloragaceae, Gunneraceae, Araliaceae, Apiaceae, Cornaceae
- Vol. 25: Ericaceae
- Vol. 26: *Myrsinaceae, Primulaceae, Plumbaginaceae, Sapotaceae, Ebenaceae, Oleaceae, Salvadoraceae, Loganiaceae, Gentianaceae, Apocynaceae* (published 1963)
- Vol. 27: Part 1: Periplocaceae, Asclepiadaceae (*Microlooma—Xysmalobium*)
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- Vol. 29: Scrophulariaceae
- Vol. 30: Bignoniaceae, Pedaliaceae, Martyniaceae, Orobanchaceae, Gesneriaceae, Lentibulariaceae, Acanthaceae, Myoporaceae
- Vol. 31: Part 1: Fascicle 1: Plantaginaceae, Rubiaceae (*Rubioidae—first part*)
 Fascicle 2: *Rubiaceae (Rubioidae—second part): Paederieae, Anthospermeae, Rubieae* (published 1986)
 Fascicle 3: Ixoroideae, Chinchonoideae
 Part 2: Valerianaceae, Dipsacaceae, Cucurbitaceae
- Vol. 32: Campanulaceae, Sphenocleaceae, Lobeliaceae, Goodeniaceae
- Vol. 33: Asteraceae: Part 1: Lactuceae, Mutisieae, 'Tarchonantheae'
 Part 2: Vernonieae, Cardueae
 Part 3: Arctotideae
 Part 4: Anthemideae
 Part 5: Astereae
 Part 6: Calenduleae
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PREFACE

This revision of the southern African species of *Rhus* was based on the study of over 30 000 specimens in 57 herbaria as well as on a careful study of the species in their natural habitats. Without the field study it would not have been possible to delimit many of the species as their delimitation was complicated by the presence of variable complexes apparently still undergoing speciation and also by the great number of putative hybrids. The determination of herbarium specimens was further complicated by the minute flowers and dioecy and the fact that two important diagnostic characters such as habit and mature fruit morphology were usually not indicated or present on the sheets.

Characters that proved to be diagnostically important were habit, bark, branching pattern, spines, basic leaflet shape, leaflet margins, leaflet length/width ratio, petioles, inflorescences, drupes, stones and vestiture of leaves and fruit.

The species have been retained in *Rhus* L., rather than in *Searsia* F.A. Barkley, pending the results of current research in South Africa and in the U.S.A. on the delimitation of the genera of the Anacardiaceae.

A total of 72 species, 2 subspecies, 11 varieties and 5 forms were recognized as well as a further 8 provisional species whose position, through lack of sufficient material, must still be finalized.

This study formed part of a Ph.D. thesis at the University of Stellenbosch with Prof. J.J.A. van der Walt as promoter.

The contribution of the following persons and institutions is gratefully acknowledged:

The respective Heads of the Department of Botany at the University of the Western Cape and the University of the North where most of the work was done; Dr D.J.B. Killick who checked the Latin diagnoses and the nomenclature; the artists Ellaphie Ward-Hilhorst and Claire Smith for their drawings and Kendall L. Winter for subvention of some of the artwork; the C.S.I.R. for a travel grant in the early stages of the revision and the curators of the many herbaria cited in the text.

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RHUS

by R.O. MOFFETT*
(Literature references on p. 120)

Rhus L., *Species plantarum* edn 1: 265 (1753) p.p.; L.: 129 (1754) p.p.; Willd.: 1477 (1798) p.p.; Thunb.: 262 (1823) p.p.; DC.: 67 (1825) p.p.; G. Don: 69 (1832) p.p.; Eckl. & Zeyh.: 142 (1836); Sond.: 504 (1860) p.p.; Benth. & Hook. f.: 418 (1865) p.p.; Engl.: 371 (1883) p.p.; Diels: 568 (1898); Engl.: 198 (1921); Schonl.: 3 (1930); Burt Davy: 494 (1932); Adamson: 560 (1950); R. Fernandes: 351 (1966); R. & A. Fernandes: 590 (1966); Merxm. & A. Schreib.: 9 (1968); R.A. Dyer: 330 (1975); Compton: 329 (1976). Lectotype species: *R. coriaria* L. vide Brizicky: 62 (1963).

Deciduous or evergreen, armed or unarmed suffrutices, shrubs or trees, stems and branches prominently lenticellate. *Leaves* alternate, exstipulate, simple or digitately 3- to 7-foliolate, leaflets sessile or petiolulate. *Inflorescences* panicles, rarely racemes, axillary and terminal, flowers often glomerulate, females fewer than males. *Flowers* minute, unisexual, very rarely bisexual, pedicellate or subsessile, bracteate, bracts subulate; calyx segments (4)5(6), greenish or red, triangular, imbricate; corolla segments (4)5(6), ovate to oblong, greenish yellow to whitish or red, imbricate, petals usually twice as long as the sepals; disc prominent, patelliform, 5(-10)-crenate; male flowers smaller than females; stamens 5, filaments subulate, inserted below the disc, anthers 2-thecate, ovate, dorsifixed, introrse, pistillode wanting; female flowers with tricarpeal syncarpous gynoecium, ovary oblique to subglobose, unilocular with single anatropic ovule or rarely 2- or 3-locular with 2 or 3 ovules; staminodes often present; styles 3, very rarely 4, apical, free or occasionally connate at base, caducous or persistent, stigmas minutely capitate. *Fruit* a small globose or compressed drupe, exocarp thin and chartaceous, mesocarp fleshy, waxy or resinous, endocarp stratified and bony; seed reniform, exalbuminous, compressed, testa thin. Figs 1-4.

A genus of 6 subgenera and about 200 species of tropical, subtropical and warm temperate countries with centres of distribution in both hemispheres. All the African species belong to subg. *Thezera*.

Subgenus *Thezera* (DC.) K. Koch, *Hortus Dendrologicus*: 197 (1853). Lectotype species: *R. pentaphylla* (Jacq.) Desf. (*R. thezera* Pers.), vide Brizicky: 63 (1963).

R. sect. *Sumac* DC.: 67 (1825) p.p.

R. sect. *Gerontogae* Engl.: 379 (1881).

Toxicodendron Mill. (1754) p.p.

Searsia F.A. Barkley: 472 (1942); F.A. Barkley: 57 (1965). Type species: *S. pentaphylla* (Jacq.) F.A. Barkley.

Separated from the other subgenera by a combination of ternate leaves, panicles or racemes, resinous mesocarp adhering to the bony endocarp and non-toxic organs.

A subgenus of about 116 species which are widely distributed in the 'Old World', occurring in Sicily, the Middle-East, India, Nepal, Yunnan (China) and Africa. There are 11 species that occur outside Africa and about 111 in Africa of which 80 are found in the FSA region. Map 1.

The only species that have any economic importance in southern Africa, are the three karree trees, *R. lancea*, *R. leptodictya* and *R. pendulina*, which have become useful roadside trees.

Although some species appear to be closely related to others and tentative groupings can be discerned, there are also many species that appear to be taxonomically isolated. Despite this, the sequence followed in this text attempts where possible to reflect relationships between the species. Formal recognition of distinct groups may be possible after a study of the whole subgenus and once current long-term research on the chemotaxonomy of the group has been completed.

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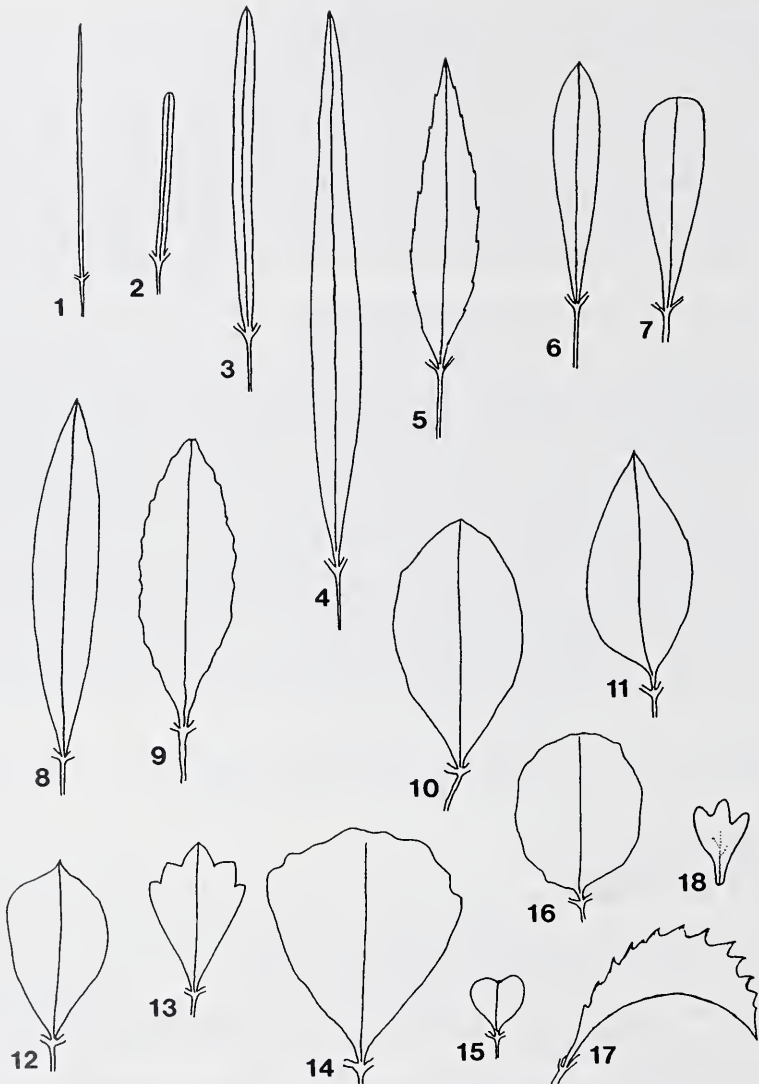
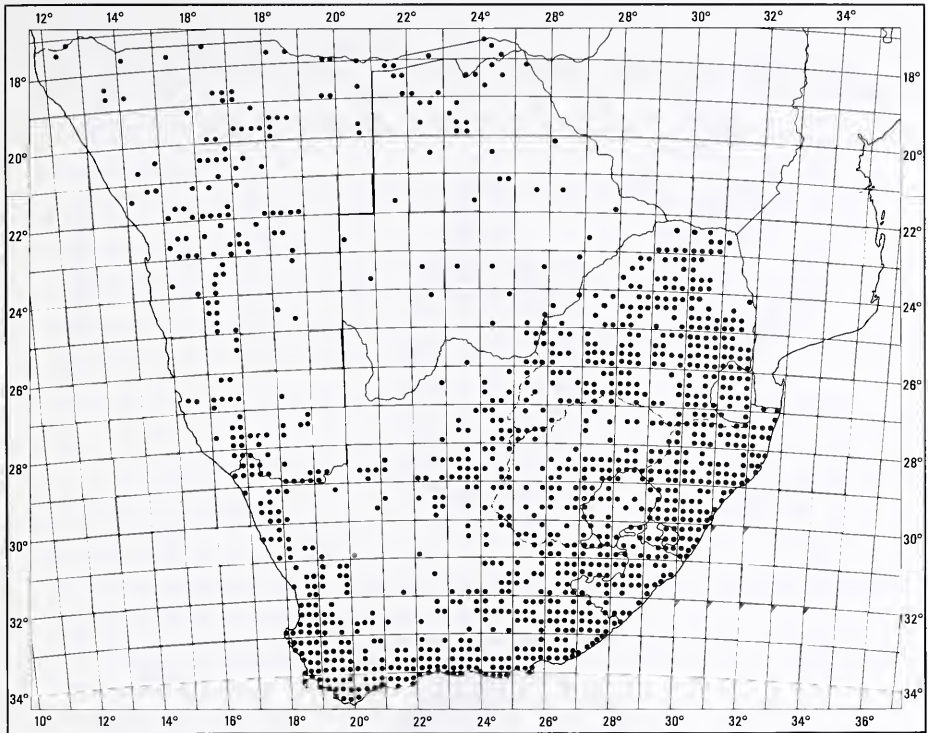


FIGURE 1.—Leaf morphology. Shape of terminal leaflet: 1, acicular, *Rhus gracillima* (Moffett 1849); 2, narrowly linear, *R. tridactyla* (Moffett 1671); 3, linear, *R. wilmsii* (Moffett 1840); 4, narrowly lanceolate, *R. lancea* (Burchell 2728); 5, lanceolate, *R. leptodictya* (Howlett 4); 6, oblanceolate, *R. rimosa* (Pillans 5132); 7, spatulate, *R. pallens* (Moffett 1573); 8, narrowly elliptic, *R. discolor* (Drège 1839); 9, elliptic, *R. natalensis* (Schonland 4025); 10, widely elliptic, *R. tumulicola* (Thorncroft in TM 1831I); 11, ovate, *R. acocksii* (Nicholson 465); 12, obovate, *R. zeyheri* (Moffett 3504); 13, obovate, *R. cuneifolia* (Schlechter 4829); 14, widely obovate, *R. rehmanniana* (Rehmann 5560); 15, obcordate, *R. glauca* (Moffett 1620); 16, subcircular, *R. lucens* (Hutchinson & Gillett 3475); 17, recurved, *R. batophylla* (Moffett 1832). Shape of leaf: 18, trilobed, *R. problematodes* (Wiss 3002). Drawn by R.O. Moffett.

MAP 1.—*Rhus*, all taxa

Note on key

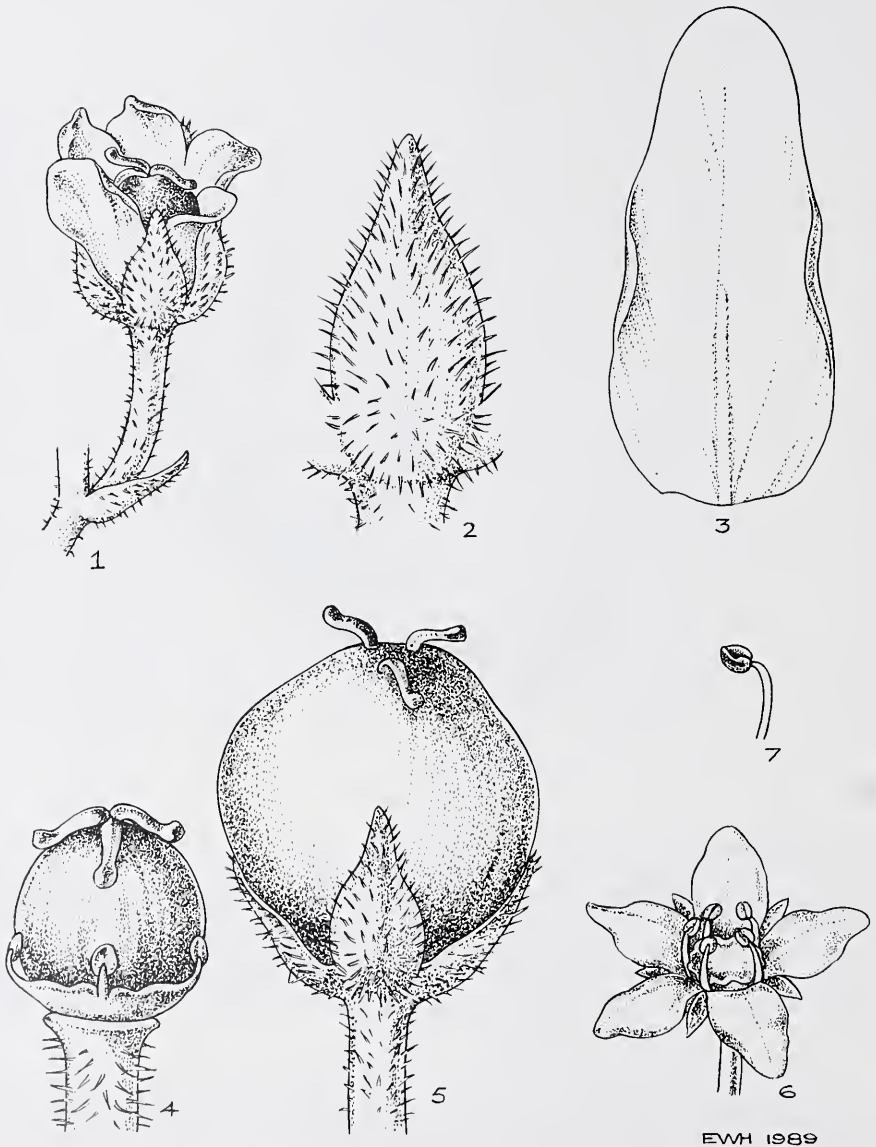
In order to accommodate the great variability within some of the taxa in one key, some taxa appear more than once. *R. tumulicola* var. *tumulicola*, for example, keys out in nine different places.

In constructing the key, the line of least resistance was always taken first and cryptic characters, such as hypo- and amphistomy were only used as a last resort. Geographic distribution is included to prevent unnecessary wrong determinations.

It is unfortunate that characters such as habit and fruit morphology, which are seldom reflected on herbarium sheets, play an important part in the key. Without using them however, it would not have been possible to have constructed a key to all the taxa.

Where two words are used for drupe descriptions, e.g. 'oblate, ellipsoid', they indicate that the drupe is oblate in shape when viewed on the widest face and ellipsoid in thickness.

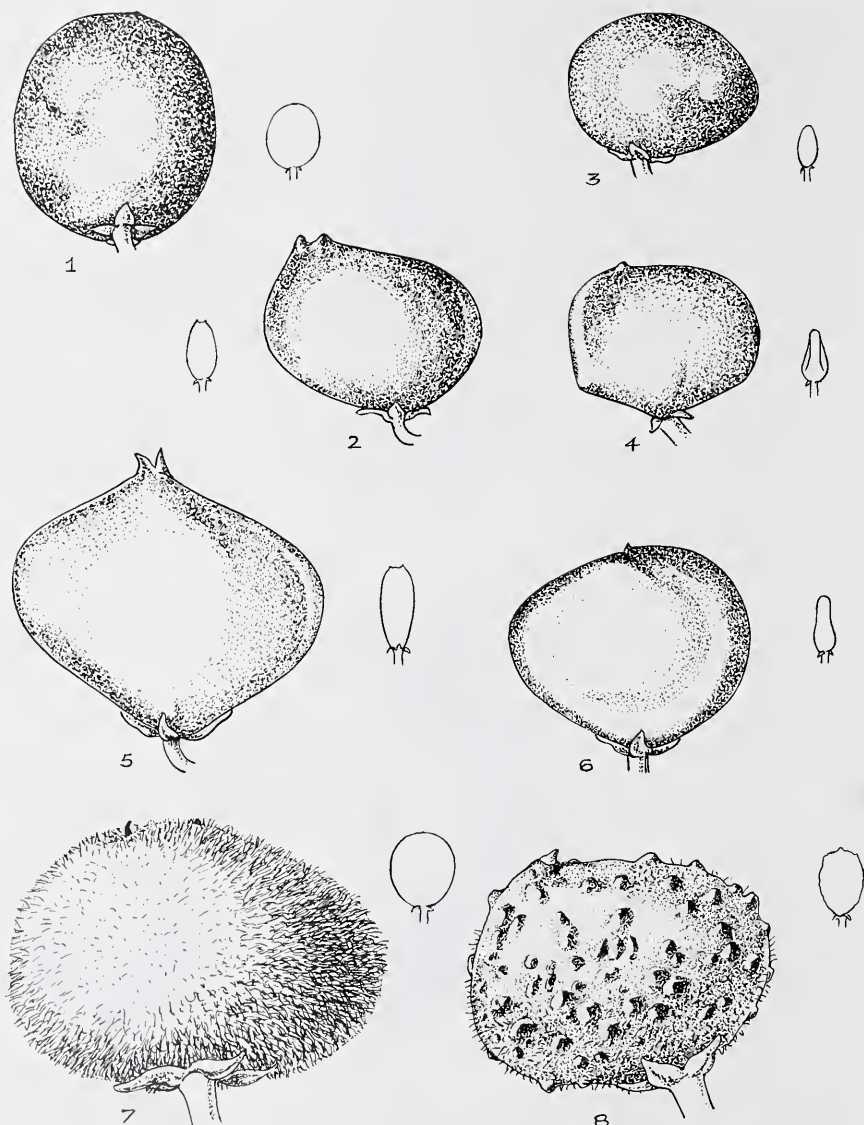
- 1a Leaves simple, sessile, variously lobed, shorter than 4 mm; trichomes stellate; decumbent spiny shrublets (between Witpütz and Aus, Namibia) 72. *R. problematodes*
- 1b Leaves compound:
- 2a Leaves 4–7-foliolate, leaflets generally toothed; small deciduous shrubs of scrub forest margins and grassy slopes at high altitudes (1700–2200 m) (Drakensberg foothills) 6. *R. montana*
- 2b Leaves 3-foliolate:
- 3a Shrublets lower than 1 m, either suffrutices (slender stems with woody rootstocks) or branched and woody, often forming colonies: [3b on p. 9]



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FIGURE 2.—Flower morphology: 1, female flower, $\times 17$; 2, calyx segment of female flower, $\times 42$; 3, corolla segment of female flower, $\times 42$; 4, immature ovary of female flower, $\times 33$; 5, more mature ovary of female flower, $\times 25$; 6, male flower, $\times 8$; 7, single stamen from male flower, $\times 17$; 1–5, *Rhus divaricata* (*I.B. Oliver 480*); 6 & 7, *R. dissecta* (*Moffett 2707*). Artist: E. Ward-Hilhorst.

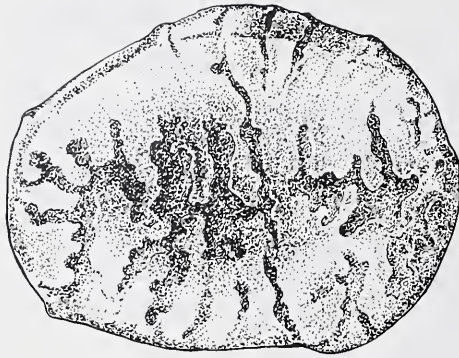
- 4a Mature leaves canescent (white to grey or cream) below:
- 5a Drupes villous or tomentose or puberulous:
- 6a Terminal leaflets more than 12 × longer than broad, margins entire; suffrutices (south-western to eastern Cape) 55. *R. rosmarinifolia*
- 6b Terminal leaflets less than 12 × longer than broad, margins entire or toothed; suffrutices (rare in south-western Cape) 56. *R. stenophylla*
- 5b Drupes glabrous:
- 7a Surface of drupe verrucose; leaflets incised to dentate (south-western Cape) 60. *R. dissecta*
- 7b Surface of drupe smooth (not verrucose):
- 8a Drupes circular, globoid (1.0–1.1 × broader than deep):
- 9a Leaflets whitish below (eastern Cape to north-eastern Transvaal) 52. *R. discolor*
- 9b Leaflets greyish below (morph found in East Griqualand and south-eastern Transvaal) 52. *R. discolor*
- 8b Drupes not circular, globoid (more than 1.2 × broader than deep):
- 10a Margin of leaflets dentate; leaflets bramble-like (around Steelpoort, Transvaal) 63. *R. batophylla*
- 10b Margin of leaflets entire:
- 11a Leaflets linear; drupes obovate, ellipsoid (1.0–1.6 × broader than deep), reddish brown (southern Cape) 55. *R. rosmarinifolia*
- 11b Leaflets not linear; drupes obovate, obovate (c. 1.3 × broader than deep), cinnamon-brown (northern border of Caprivi) 54. *R. kirkii*
- 4b Mature leaves olive-green below:
- 12a Margin of leaflets entire: [12b on p. 9]
- 13a Petiole and/or lamina with hairs:
- 14a Terminal leaflets more than 30 × longer than broad (around Pretoria) 69a. *R. gracillima* var. *gracillima*
- 14b Terminal leaflets less than 30 × longer than broad:
- 15a Angle between primary vein (midrib) and 1st order secondary veins c. 20°; suffrutex with amphistomatous leaflets (near Richmond, Highflats and Umzinto, Natal) 46. *R. rudatisii*
- 15b Angle between primary vein and 1st order secondary veins c. 40–70°:
- 16a Terminal leaflet 4–8 × longer than broad:
- 17a Upper and lower surface of leaflets appear similar (veins equally prominent); stomata deeply sunken, trichomes stellate to sheet-like (rare hairy morph near Warmbaths, Transvaal) 22a. *R. magalismontana* subsp. *magalismontana*
- 17b Upper and lower surfaces of leaflets not similar (veins prominently exerted below); stomata not deeply sunken, trichomes simple hairs and multicellular glands (around Kokstad, Natal, and Ermelo, Transvaal) 52. *R. discolor*
- 16b Terminal leaflet less than 4 × longer than broad:
- 18a Petiole 4–7 mm long; erect shoots, rarely branched (northern Natal and Swaziland) 53. *R. harveyi*
- 18b Petiole 9–15 mm long; generally branched shrublets:
- 19a Petioles glabrous; densely foliated, erect, gregarious shrublets (eastern Cape) 19. *R. fastigata*
- 19b Petioles hairy; less densely foliated, branching shrublets:
- 20a Terminal leaflet longer than 30 mm (high-lying areas of northern and eastern Transvaal) 1b(i). *R. tumulicola* var. *meeuseana* forma *meeuseana*
- 20b Terminal leaflet shorter than 30 mm (high-lying areas of northern and eastern Transvaal) 1b(ii). *R. tumulicola* var. *meeuseana* forma *pumila*
- 13b Petiole and/or lamina glabrous:
- 21a Leaflets amphistomatous, upper and lower surfaces appear similar; margins not prominently revolute:
- 22a Terminal leaflets more than 20 × longer than broad:
- 23a Much-branched, wiry shrublets, relatively densely leaved, inflorescence and fruit not pendulous (north-eastern Cape to southern Orange Free State) 29. *R. dregeana*
- 23b Slender, erect, sparsely leaved shrublets with pendulous inflorescences and fruit:
- 24a Leaves generally on upper half of plants, leaflets with stellate hairs (north-western to eastern Transvaal) 68. *R. keetii*



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FIGURE 3.—Drupe morphology: 1, *Rhus laevigata* var. *laevigata* (Moffett 2322); 2, *R. scytophylla* var. *scytophylla* (Moffett 2338); 3, *R. pallens* (Balsinhas 3332); 4, *R. batophylla* (Moffett 1991); 5, *R. populifolia* (Giess & Merxmüller 3403); 6, *R. tridactyla* (Moffett 1671); 7, *R. rosmarinifolia* (Moffett 2833); 8, *R. dissecta* (Moffett 2341). Larger figure shows greatest width, $\times 5.7$; smaller figure shows depth or thickness, $\times 1.6$. Artist: E. Ward-Hilhorst.

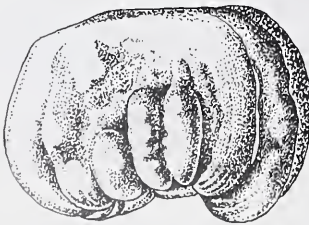
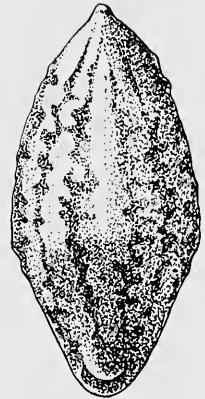
- 24b Leaves generally on all parts of the plant, leaflets without stellate hairs (north-eastern and eastern Transvaal to Pretoria) 69b. *R. gracillima* var. *glaberrima*
- 22b Terminal leaflets less than 20 × longer than broad:
- 25a Terminal leaflets more than 7 × longer than broad:
- 26a Petioles shorter than 6 mm; veins prominent, secondaries penniparallel and number c. 9 per cm; fruit compressed (1,6–1,9 × broader than deep), asymmetrically oblate, bark with prominent ridges (Transkei, southern and northern Natal, eastern and north-eastern Transvaal) 65. *R. pondoensis*
- 26b Petioles longer than 7 mm:
- 27a Terminal leaflet shorter than 25 mm:
- 28a Foliage dense; erect shrublets; lateral leaflets somewhat falcate; drupes oblate, ellipsoid (c. 1,4 × broader than deep) (on hartzburgite just north of Zeerust, Transvaal) 66. *R. maricoana*
- 28b Foliage less dense; divaricate shrublets, lateral leaflets not falcate; drupes oblate, obloid (c. 1,2 × broader than deep) (dwarf morph in southern Botswana and western Transvaal) 21. *R. ciliata*
- 27b Terminal leaflet longer than 25 mm:
- 29a Terminal leaflets wider than 7 mm (Waterberg, north-western Transvaal) 22c. *R. magalismsontana* subsp. *trifoliolata*
- 29b Terminal leaflets narrower than 7 mm:
- 30a Slender, erect, sparsely leaved shrublets; lateral leaflets somewhat falcate, most secondary veins forking close to midrib; secondaries number c. 4 per cm (Waterberg, north-western Transvaal and Steelpoort and Blyde River area, eastern Transvaal) 68. *R. keetii*
- 30b Compact, erect, more densely leaved shrublets forming colonies; lateral leaflets generally not falcate, secondary veins rarely fork close to midrib and number c. 8 per cm (mountains south-west of Lydenburg, Transvaal) 67. *R. wilmsii*
- 25b Terminal leaflets less than 7 × longer than broad:
- 31a Drupes circular to obloid (1,0–1,2 × broader than deep); base of lateral leaflets clawed, not oblique; trichomes neither stellate nor sheet-like, margins dull white (rare, near Grahamstown) 46. *R. albormarginata*
- 31b Drupes oblate, ellipsoid (1,3–1,6 × broader than deep); base of lateral leaflets oblique, stomata deeply sunken, trichomes stellate to sheet-like, young foliage grey, pink or yellow; generally found on quartzitic substrates:
- 32a Terminal leaflets 3–5 × longer than broad:
- 33a Mature leaflets narrower than 8 mm, yellowish (rare morph near Loskop Dam, Transvaal) 22a. *R. magalismsontana* subsp. *magalismsontana*
- 33b Mature leaflets broader than 8 mm, greyish (Waterberg, north-western Transvaal) 22a. *R. magalismsontana* subsp. *magalismsontana*
- 32b Terminal leaflets 2–3 × longer than broad:
- 34a Terminal leaflets longer than 70 mm; branched shrublets forming colonies, older plants with more open habit (Soutpansberg) 22b. *R. magalismsontana* subsp. *coddii*
- 34b Terminal leaflets shorter than 70 mm; dwarf shrublets forming colonies (northern Orange Free State, Transvaal and Botswana) 22a. *R. magalismsontana* subsp. *magalismsontana*
- 21b Leaflets hypostomatous, upper and lower surfaces not similar, or if similar then margins prominently revolute:
- 35a Leaflets linear, 8–14 × longer than broad, upper surface greyish, lower surface olive to pale brown; secondary veins prominently penniparallel, numbering c. 10 per cm. Leaves similar to those of *R. lancea* (north-eastern Kwazulu) 33. *R. kwazuluana*
- 35b Leaflets lanceolate, elliptic to broadly elliptic and obovate, less than 4 × longer than broad:
- 36a Leaflets rigid to coriaceous:
- 37a Tertiary veins of leaflets raised and prominently reticulate; leaflets strongly conduplicate (morph found only in central Soutpansberg) 1a. *R. tumulicola* var. *tumulicola*
- 37b Tertiary veins of leaflets not raised and not prominently reticulate:
- 38a Leaflets not conduplicate, petiole relatively broad and flattened above (not winged); flowers dark red; drupes tricuspidate (south-western Cape) 51a. *R. scytophylla* var. *scytophylla*



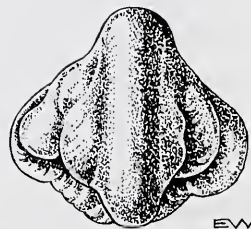
1.



2.



3.



EWH 1989

FIGURE 4.—Stone (pyrena) morphology: 1, *Rhus tenuinervis* (Ngoni 447); 2, *R. dregeana* (Moffett 2889); 3, *R. crenata* (Moffett 2526). Left hand side: lateral view indicating greatest width. Right hand side: side view indicating thickness. All $\times 13.5$. Artist: E. Ward-Hilhorst.

- 38b Leaflets conduplicate, petiole slender; flowers yellow-green; drupes not tricuspidate:
- 39a Leaflets lanceolate to narrowly elliptic, petioles generally longer than 15 mm; erect, sparse shrubs (Albany to Transvaal) 10a. *R. rigida* var. *rigida*
- 39b Leaflets broadly elliptic, petioles generally shorter than 15 mm:
- 40a Petioles and branches yellowish (north-western Transvaal, northern and southern Natal) 10c. *R. rigida* var. *dentata*
- 40b Petioles and branches not yellowish (northern Orange Free State to Transvaal) 10b. *R. rigida* var. *margaretae*
- 36b Leaflets not rigid nor coriaceous:
- 41a Leaflet surfaces sticky; leaves and branches often furfureous (dusted with a sooty powder) (escarpment from Van Reenen, Natal, to near Dirkiesdorp, Transvaal) 14. *R. dracomontana*
- 41b Leaflet surfaces not sticky; leaves and branches without a sooty covering:
- 42a Petiole 4–7 mm long; veins prominent on both surfaces, lower veins reddish brown; erect shoots, generally not branched (northern Natal and Swaziland) 53. *R. harveyi*
- 42b Petiole 9–15 mm long; veins prominent on lower surfaces only, creamy yellow; branched shrublets with dense foliage (southern Natal and eastern Cape) 19. *R. fastigata*
- 12b Margin of leaflets not entire:
- 43a Petioles longer than 15 mm:
- 44a Leaflets less than 2 × longer than broad, branches glabrous, reddish to yellow; fairly densely leaved shrubs (north-western Transvaal and Natal) 10c. *R. rigida* var. *dentata*
- 44b Leaflets more than 2 × longer than broad:
- 45a Leaflet apex truncate; branching shrublets with sparse foliage (eastern and northern Transvaal truncate morph) 9. *R. rogersii*
- 45b Leaflet apex acute:
- 46a Leaves somewhat fleshy to coriaceous; single erect shoots or branched shrublets, generally lower than 0,5 mm (eastern Cape, Transkei, Natal and Zululand) 8. *R. carnosula*
- 46b Leaves not fleshy nor leathery; erect shrublets, generally taller than 0,5 m (eastern Transvaal) 9. *R. rogersii*
- 43b Petioles shorter than 15 mm:
- 47a Drupes tricuspidate (south-western Cape mountains):
- 48a Petioles shorter than 2 mm; leaflets cuneate, upper third of lamina sharply and regularly toothed (south-western Cape) 50. *R. cuneifolia*
- 48b Petioles longer than 4 mm; leaflets cuneate to obovate, upper third of lamina poorly and irregularly toothed (Ceres and Worcester Districts) 51b. *R. scytophylla* var. *dentata*
- 47b Drupes not tricuspidate (north-eastern Cape and Natal):
- 49a Leaflets generally more than 2 × longer than broad; petioles shorter than 7 mm; single erect shoots or rarely branched shrubs (northern Natal and Swaziland) 53. *R. harveyi*
- 49b Leaflets generally less than 2 × longer than broad; petiole longer than 7 mm; much-branched shrublets:
- 50a All leaflets generally toothed, prominently dentate (north-eastern Cape) 7. *R. dentata*
- 50b Not all leaflets generally toothed, indentations not prominent or poorly developed (northern Orange Free State and Transvaal) 10b. *R. rigida* var. *margaretae*
- 3b Trees or shrubs taller than 1 m:
- 51a Trees or shrubs taller than 4 m: [51b on p. 13]
- 52a Leaflets canescent below:
- 53a Margin of leaflets not entire, toothed towards apex only; drupes puberulous, pale creamy grey (scattered in moist parts from the south-western Cape to northern Transvaal) 58. *R. tomentosa*
- 53b Margin of leaflets entire:
- 54a Leaflets generally c. 5 × longer than broad; multistemmed shrubs forming dense thickets; flowering in late September to November (south-western Cape) 57. *R. angustifolia*

- 54b Leaflets generally c. 1.5–3.0 × longer than broad; branched, open shrubs, generally solitary, flowering in the south-western Cape in July and August (scattered in moist parts from the south-western Cape to northern Transvaal) 58. *R. tomentosa*
- 52b Leaflets not canescent below:
- 55a Terminal leaflets more than 4 × longer than broad:
- 56a Leaflets entire:
- 57a Terminal leaflets broadly linear, generally more than 8 × longer than broad, venation prominently penni-parallel, secondary veins number c. 6 per cm; old bark very dark reddish brown, fissured (widespread in the central-western part of southern Africa) 30. *R. lancea*
- 57b Terminal leaflets lanceolate, generally 4–7 × longer than broad; venation not prominently penni-parallel, secondary veins number c. 4 per cm; old bark grey to fairly dark brown:
- 58a Old bark smooth and scaly; leaflets amphistomatous (upper and lower surfaces similar); pendulous, willow-like trees often with spines on older branches (along banks of Vaal and Orange River west of Kimberley and Berg and Olifants River, south-western Cape) 48. *R. pendulina*
- 58b Old bark granular to rough, reticulate; leaflets hypostomatous (upper and lower surface not similar):
- 59a Drupes rhombic, discoid (more than 2.6 × broader than deep) (widespread in central southern Africa) 26. *R. leptodictya*
- 59b Drupes oblate, ellipsoid (1.3–1.6 × broader than deep):
- 60a Spinous, open-branched shrubs or small trees; drupes smooth; branches often pale in bushveld specimens (eastern Cape, Transkei, Natal, eastern and northern Transvaal) 38. *R. guezinii*
- 60b Non-spinous, densely foliaged shrubs; drupes smooth or occasionally verrucose; branches not pale (eastern rim of Bushveld Igneous Complex, Sekhukhuniland, Transvaal) 39. *R. sekhukhuniensis*
- 56b Leaflets not entire:
- 61a Terminal leaflet apex attenuate to acuminate, margins either completely or almost completely toothed; drupes rhombic, discoid (more than 2.6 × broader than deep) (widespread in central southern Africa) 26. *R. leptodictya*
- 61b Terminal leaflet apex acute to obtuse, margin toothed in upper half only; drupe oblate, ellipsoid (1.3–1.6 × broader than deep):
- 62a Spinous, open, branched shrubs or small trees, drupes smooth (eastern Cape, Transkei, Natal, eastern and northern Transvaal) 38. *R. guezinii*
- 62b Non-spinous, densely foliaged shrubs; drupes smooth or occasionally verrucose (eastern rim of Bushveld Igneous Complex, Sekhukhuniland, Transvaal) 39. *R. sekhukhuniensis*
- 55b Terminal leaflets less than 4 × longer than broad:
- 63a Terminal leaflets more than 2 × longer than broad: [63b on p. 12]
- 64a Leaflets entire:
- 65a Old bark smooth:
- 66a Leaflets glaucous, almost rubbery, amphistomatous, generally shorter than 60 mm, apex obtuse to rounded (central, eastern and north-eastern Transvaal) 47. *R. zeyheri*
- 66b Leaflets not glaucous, nor rubbery, hypostomatous, generally longer than 60 mm, apex acuminate to attenuate, margin often undulate and young stems often with spinous spurs (forests from southern Cape to northern Transvaal) 2. *R. chirindensis*
- 65b Old bark granular to rough:
- 67a Drupes circular, globoid (1.0–1.1 × broader than deep):
- 68a Drupes very small (2–3 mm in diameter); glabrous-leaved shrub or small tree, occasionally spinous; leaflets olive-green (banks of rivers and watercourses, Botswana and northern Namibia) 6. *R. quartiniana*
- 68b Drupes small to medium (3.0–4.5 mm in diameter):
- 69a Bark rough, brownish; small, branched trees with rigid, coriaceous leaves; trunk often gnarled and twisted (northern Transvaal to northern Natal) 1a. *R. tumulicola* var. *tumulicola*
- 69b Bark granular, grey; much-branched shrubs or small trees with dull leaves often hairy; trunk generally erect:

- 70a Non-spinous shrubs or trees; leaflets olive-green, glabrous or puberulous; veins generally slightly prominent below (northern Transvaal to eastern Cape interior) 15c. *R. pyroides* var. *gracilis*
- 70b Spinous shrubs or trees:
- 71a Secondary venation prominently exerted below; leaflets generally revolute and puberulous to tomentose (widespread in central southern Africa) 15a. *R. pyroides* var. *pyroides*
- 71b Secondary venation not prominently exerted below, leaflets not markedly revolute, glabrous and long-petioled (smooth-leaved morph of Karoo and Orange Free State) 15a. *R. pyroides* var. *pyroides*
- 67b Drupes not circular, globose:
- 72a Drupes oblate, ellipsoid (1,3–1,6 × broader than deep):
- 73a Spinous, open shrubs or small trees; bark rough, reticulate (eastern Cape, Transkei, Natal, eastern and northern Transvaal) 38. *R. gueinzii*
- 73b Non-spinous, densely leaved shrubs or small trees:
- 74a Branches not ascending; often small trees (eastern rim of Bushveld Igneous Complex, Sekhukhuni-land, Transvaal) 39. *R. sekhukhuniensis*
- 74b Branches ascending; seldom trees:
- 75a Leaflets obovate, becoming orange-yellow when old; secondary veins few (c. 3 per cm) (widespread in moist areas, south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*
- 75b Leaflets oblanceolate, remaining olive-green to pale brown when old; secondary veins c. 5 per cm (southern Cape to Natal and southern Transvaal) 44. *R. pallens*
- 72b Drupes lenticular (1,6–2,6 × broader than deep), not discoid:
- 76a Terminal leaflet shorter than 15 mm, obovate to spatulate; large, rounded shrubs, branches ending in short, dark spurs (widespread in arid central southern Africa) 43. *R. burchellii*
- 76b Terminal leaflet longer than 15 mm:
- 77a Terminal leaflets longer than 35 mm; dark-foliaged trees, seldom producing fruit; putative hybrids between *R. leptodictya* and *R. petheri* (lowveld, eastern Transvaal) 75. *R. taxon C*
- 77b Terminal leaflets shorter than 35 mm; bark reticulate, blocky; leaflets obovate (Transkei to northern Transvaal) 34. *R. petheri*
- 64b Leaflets not entire (generally irregularly toothed and usually only along upper part of margin):
- 78a Erect, fairly straight-stemmed trees, foliage not dense; bark smooth; leaflets generally undulate, only rarely toothed, apices acuminate to attenuate; terminal leaflets petiolulate (forests from southern Cape to northern Transvaal) 2. *R. chirindensis*
- 78b Erect, much-branched shrubs or small, crooked trees; foliage relatively dense; bark granular to rough; leaflet apices acute, terminal leaflets sessile:
- 79a Drupes circular, globose (1,0–1,1 × broader than deep):
- 80a Drupes very small (2–3 mm in diameter); shrubs or small trees, generally spinous; leaflets glabrous, olive-green (banks of rivers and watercourses, Botswana and northern Namibia) .. 16. *R. quartziana*
- 80b Drupes small to medium (3,0–4,5 mm in diameter):
- 81a Bark rough, brown; small, branched trees with rigid, coriaceous leaflets, trunks often gnarled and twisted (northern Transvaal to northern Natal) 1a. *R. tumulicola* var. *tumulicola*
- 81b Bark granular, grey; much-branched shrubs or small trees with dull, often hairy leaflets; trunks generally not gnarled and twisted:
- 82a Non-spinous shrubs or trees; leaflets olive-green, glabrous or puberulous; veins generally slightly prominent below (northern Transvaal to eastern Cape interior) 15c. *R. pyroides* var. *gracilis*
- 82b Spinous shrubs or trees:
- 83a Secondary venation prominently exerted below; leaflets generally revolute and puberulous to tomentose (widespread in central southern Africa) 15a. *R. pyroides* var. *pyroides*
- 83b Secondary venation not prominently exerted below, leaflets not markedly revolute, glabrous and long-petioled (smooth-leaved morph of Karoo and Orange Free State) 15a. *R. pyroides* var. *pyroides*

- 79b Drupes not circular, globose:
- 84a Drupes obovate, obovoid to ellipsoid (1,3–1,6 × broader than deep):
- 85a Spinous, open shrubs or small trees; bark rough, reticulate (eastern Cape, Transkei, Natal, eastern and northern Transvaal) 38. *R. guenzii*
- 85b Non-spinous, densely foliated shrubs or small trees:
- 86a Branches ascending, leaflets obovate becoming orangy yellow when old; marginal indentations few and large; not forming trees (widespread in moist areas, south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*
- 86b Branches less ascending, leaflets oblanceolate, not becoming orangy yellow, marginal indentations shallow; often small trees (eastern rim of Bushveld Igneous Complex, Sekhukhuniland, Transvaal) 39. *R. sekukhuniensis*
- 84b Drupes lenticular (1,6–2,6 × broader than deep) or discoid (more than 2,6 × broader than deep); bark rough, reticulate, often blocky in old trees:
- 87a Leaflets generally shorter than 35 mm, obovate, margins weakly toothed (Transkei to northern Transvaal) 34. *R. petheri*
- 87b Leaflets generally longer than 35 mm:
- 88a Margins of leaflets prominently toothed, crenate to dentate, leaflets elliptic to broadly lanceolate; putative hybrid (northern Cape) 76. *R. taxon D*
- 88b Margins of leaflets less prominently toothed, leaflets elliptic to broadly lanceolate; putative hybrid (Nelspruit, Transvaal) 75. *R. taxon C*
- 63b Terminal leaflets less than 2 × longer than broad:
- 89a Leaflets entire:
- 90a Old bark smooth, young bark almost waxy; leaflets bluish green, somewhat rubbery, amphistomatous; nearly always on dolomite (central, eastern and north-eastern Transvaal) 47. *R. zeyheri*
- 90b Old bark granular to rough and fissured:
- 91a Branches ending in pale (yellowish brown) spinous spurs; large rounded shrubs; drupes obovate, ellipsoid (1,3–1,9 × broader than deep) (karroid parts, western to eastern Cape) ... 42. *R. longispina*
- 91b Branches not ending in pale spinous spurs:
- 92a Old bark rough and deeply fissured; drupes globose to obovoid (1,0–1,3 × broader than deep); open, woody shrubs or often small trees with gnarled and twisted trunks:
- 93a Leaflets polished, glossy above (Coprosma-like), drying pale brown in herbarium specimens, becoming golden yellow in late summer on shrubs; apex rounded to retuse, petioles often feintly winged; old bark dark brown to blackish, branchlets with longitudinal stretch marks (north-eastern Cape and Drakensberg foothills) 13. *R. krebsiana*
- 93b Leaflets glabrous, coriaceous, drying olive-green when picked, not becoming golden yellow, apex acute, rarely rounded; petioles not winged; old bark dark brown, branchlets without stretch marks (northern Transvaal to northern Natal) 1a. *R. tumulicola* var. *tumulicola*
- 92b Old bark grey, granular; drupes obovate, ellipsoid (1,3–1,9 × broader than deep); fairly densely foliated shrubs, seldom small trees:
- 94a Leaflets less than 1,5 × longer than broad, apex retuse; large rounded shrubs with branching not ascending (southern and eastern Cape coastal areas) 41. *R. glauca*
- 94b Leaflets more than 1,5 × longer than broad, apex rounded to acute; large shrubs with ascending branching:
- 95a Leaflets obovate, a number becoming orangy yellow; secondary first order veins number c. 3 per cm (widespread in moister areas, south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*
- 95b Leaflets oblanceolate, remaining olive-green to pale brown; secondary first order veins number c. 5 per cm (southern Cape to Transvaal) 44. *R. pallens*
- 89b Leaflets not entire:
- 96a Drupes globose to obovoid (1,0–1,3 × broader than deep):
- 97a Drupes more than 5 mm diameter; scandent shrub in coastal bush (East London to Tongaland) .. 37. *R. natalensis*

- 97b Drupes less than 5 mm diameter; erect woody shrubs or small trees:
- 98a Densely foliated shrubs with thin ascending branches; leaflets obovate, some turning orangy yellow, tertiary venation not prominent; drupes 1,1–1,3 × broader than deep (widespread in moister areas, south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*
- 98b Open, woody shrubs or more commonly small trees with a gnarled trunk, leaflets cuneate, obovate or elliptic, not becoming orangy yellow, tertiary venation prominent; drupes 1,0–1,1 × broader than deep:
- 99a Leaflets broadly cuneate, apex truncate, lamina dull (puberulous to tomentose) or gritty, often slightly ruffled to rugose; stems occasionally spinous (Transkei to northern Transvaal) 18a. *R. rehmanniana* var. *rehmanniana*
- 99b Leaflets elliptic to obovate, apex acute to rounded, rarely truncate, lamina glabrous, not ruffled; stems not spinous (northern Transvaal to northern Natal) 1a. *R. tumulicola* var. *tumulicola*
- 96b Drupes discoid (more than 2,6 × broader than deep) often asymmetrical:
- 100a Leaflets olive-green, puberulous to glabrous, usually prominently toothed (northern Cape, Botswana, Namibia and western Transvaal) 25. *R. tenuinervis*
- 100b Leaflets blueish, glabrous to puberulous, usually weakly toothed (rare in north-eastern Botswana) 27. *R. lucens*
- 51b Trees or shrubs lower than 4 m:
- 101a Leaflets discolorous:
- 102a Leaflets rufescent below; erect, multistemmed to somewhat open-branched shrubs, often forming colonies; drupes circular, globose, leaflets entire, shape variable from ovate to narrowly obovate (mountainous areas from Middelburg, Cape, to Witwatersrand) 20. *R. divaricata*
- 102b Leaflets canescent below (and in one species overlain with yellowish indumentum):
- 103a Leaflets entire:
- 104a Drupes compressed (more than 1,9 × broader than deep); leaflets sessile:
- 105a Leaflet blades sericeous; drupes 1,9–2,6 × broader than deep, tricuspidate and transversely oblong; much-branched woody shrublets (Naaukluft and Tsaris Mountains, central Namibia) 62. *R. volkii*
- 105b Leaflet blades not sericeous; drupes discoid (more than 2,6 × broader than deep) not tricuspidate; much-branched woody shrublets, often spinous (central and north-eastern Transvaal) 23. *R. engleri*
- 104b Drupes not compressed, oblate, elliptic (1,3–1,6 × broader than deep); leaflets petiolulate:
- 106a Multistemmed shrubs forming thickets; leaflets generally c. 5 × longer than broad; flowering from late September to early November (south-western Cape) 57. *R. angustifolia*
- 106b Single-stemmed, much-branched, open shrubs; leaflets generally 1,5–3 × longer than broad; flowering in July and August in the south-western Cape (scattered in moist parts from south-western Cape to northern Transvaal) 58. *R. tomentosa*
- 103b Leaflets not entire:
- 107a Flowers sessile, drupes with long russet hairs:
- 108a Leaflets deeply incised (pinnatifid); drupes oblate, ellipsoid (1,61–1,90 × broader than deep), reniform, of medium size (4,6–6,5 mm broad) (south-western Cape) 59a. *R. incisa* var. *incisa*
- 108b Leaflets not deeply incised, irregularly and shallowly toothed; drupes oblate, obovate (1,1–1,3 × broader than deep), often grouped together in tight clusters and therefore misshapen, generally larger than above (more than 6,5 mm broad) (Namaqualand and south-western to eastern Cape) 59b. *R. incisa* var. *effusa*
- 107b Flowers pedicellate, drupes without long russet hairs:
- 109a Leaflets petiolulate; drupes not compressed, oblate, ellipsoid (1,31–1,60 × broader than deep), creamy grey, reniform (scattered in moist parts from south-western Cape to northern Transvaal) 58. *R. tomentosa*
- 109b Leaflets sessile; drupes compressed (more than 1,9 × broader than deep):
- 110a Drupes tricuspidate, transversely oblong (1,91–2,60 × broader than deep), with a greenish yellow indumentum; woody, branched shrubs (north-western Cape and southern Namibia) 61. *R. populifolia*
- 110b Drupes not tricuspidate, neither transversely oblong nor having a greenish yellow indumentum:

- 111a Leaflets oblanceolate to narrowly obovate, poorly toothed; drupes discoid (more than 2.6 × broader than deep), rhombic; much-branched shrubs, often spinous (central and north-eastern Transvaal) 23. *R. engleri*
- 111b Leaflets ovate, prominently dentate, bramble-like; narrow, erect shrublets, generally with one or more stems arising from a woody rootstock; drupes dull dark red when fresh, shiny coppery brown when dry (Steelepoort, Transvaal) 63. *R. batophylla*
- 101b Leaflets concolorous, or if discolorous, the lower surface differing only in shade and not in texture and neither canescent nor rufescent:
- 112a Shrubs, scandent:
- 113a Leaflets entire:
- 114a Leaflet apices acute or acuminate:
- 115a Leaflets petiolulate, apices acuminate, often twisted; branches with short recurved spines (quartzites of Transkei and southern Natal) 3. *R. acocksi*
- 115b Leaflets sessile, apices acute:
- 116a Leaflets generally 1.2–2.0 × longer than broad, fairly rigid and shiny, venation prominently reticulate, margins feintly revolute (coast from Port Alfred to Tongaland) 12a. *R. nebulosa* forma *nebulosa*
- 116b Leaflets generally 2–4 × longer than broad, not rigid, venation less prominently reticulate, margins not revolute; rarely 4- or 5-foliolate (Nelspruit and near Wakkerstroom, Transvaal) 73. *R. taxon A*
- 114b Leaflet apices rounded:
- 117a Leaflet blades glabrous, shiny, tertiary veins prominent (coast, from Port Alfred to Tongaland) 12a. *R. nebulosa* forma *nebulosa*
- 117b Leaflet blades tomentose to velutinous, dull, tertiary veins not prominent (coast, in and around the Alexandria forest, eastern Cape) 12b. *R. nebulosa* forma *pubescens*
- 113b Leaflets not entire:
- 118a Leaflet apices obtuse, often slightly retuse; leaflets trifoliolate only, rigid, drying blueish black, margins generally clearly toothed (coast, from East London to Tongaland) 37. *R. natalensis*
- 118b Leaflet apices acute; leaflets rarely 4- or 5-foliolate, not rigid, nor drying blueish black, margins irregularly and poorly incised (Nelspruit and near Wakkerstroom, Transvaal) 73. *R. taxon A*
- 112b Shrubs or small trees, not scandent:
- 119a Leaflets entire: [119b on p. 19]
- 120a Terminal leaflets less than 2 × longer than broad: [120b on p. 16]
- 121a Leaflet blades glabrous:
- 122a Leaflets sessile:
- 123a Terminal leaflets generally longer than 20 mm, obovate, rigid, revolute; branches generally ascending, shrubs fairly dense (coast, Cape Peninsula to Hermanus) 40c. *R. lucida* forma *elliptica*
- 123b Terminal leaflets generally shorter than 20 mm, obovate, rigid, revolute; branches less ascending, shrubs more open (coast, Gansbaai to Port Elizabeth) 40b. *R. lucida* forma *scoparia*
- 122b Leaflets petiolate:
- 124a Young leaflets glutinose (shiny and sticky), leaving yellowish imprint on drying paper:
- 125a Mature terminal leaflets generally shorter than 30 mm, often with a glaucous bloom; drupes oblate, ellipsoid (1.31–1.60 × broader than deep); much-branched squarrose shrubs (coast, Saldanha Bay to Fish River, eastern Cape) 41. *R. glauca*
- 125b Mature terminal leaflets generally longer than 30 mm:
- 126a Drupes almost circular, globoid (1.1–1.3 × broader than deep); deciduous shrubs:
- 127a Small trees or large shrubs with rough, fissured, dark bark, trunks often gnarled, young branchlets with longitudinal stretch marks; leaflets Coprosma-like, polished above, rigid, golden yellow in January, margins revolute, apices rounded or retuse (north-eastern Cape and Drakensberg foothills) 13. *R. krebsiana*
- 127b Branched shrub or shrublets with thin, blackish stems arising from a woody rootstock; leaflets furfuraceous (blackish granular indumentum), neither rigid nor margins revolute (Drakensberg escarpment from Van Reenen, Natal, to near Dirkiesdorp, Transvaal) 14. *R. dracomontana*

- 126b Drupes obovate, ellipsoid to slightly compressed (1,61–2,10 × broader than deep); much-branched, fairly open, evergreen shrubs; leaflets generally undulate:
- 128a Leaflets amphistomatous, apical margins often irregularly toothed (south-western Cape and Namaqualand) 45. *R. undulata*
- 128b Leaflets hypostomatous, apical margins often emarginate and seldom toothed (southern Cape to Transvaal) 44. *R. pallens*
- 124b Young leaflets not glutinose (sometimes shiny but not sticky):
- 129a Leaflets blueish green, somewhat rubbery; veins often reddish:
- 130a Tertiary venation prominent; leaflets hypostomatous with multicelled glandular trichomes (on limestone, Cango Valley and near Bredasdorp) 11a(ii). *R. laevigata* var. *laevigata* forma *cangoana*
- 130b Tertiary venation not prominent, leaflets amphistomatous without multicelled glandular trichomes (usually on dolomite, southern, eastern and north-eastern Transvaal) 47. *R. zeyheri*
- 129b Leaflets olive-green, fairly rigid to rigid; veins not reddish:
- 131a Flowers dark red; drupes tricuspidate; petioles relatively broad and flattened above (not winged) (south-western Cape) 51a. *R. scytophylla* var. *scytophylla*
- 131b Flowers greenish yellow; drupes not tricuspidate, petioles relatively narrow:
- 132a Petioles shorter than 4 mm; leaflets elliptic to obovate; dwarf to medium-sized shrubs with ascending, crowded branches (leaflets less rigid than 40c) (Albany) 40b. *R. lucida* forma *scoparia*
- 132b Petioles longer than 4 mm:
- 133a Large, rounded shrubs, much-branched, branches ending in spurs or spines:
- 134a Branches, spurs and spines pale (greyish yellow); terminal leaflets generally longer than 15 mm (karroid plains from south-western to eastern Cape) 42. *R. longispina*
- 134b Branches and spurs (if present) greyish brown; terminal leaflets generally shorter than 15 mm (widespread on hill slopes and koppies of the arid central southern Africa) ... 43. *R. burchellii*
- 133b Small trees with gnarled trunks or branched shrubs, neither with spurs or spines:
- 135a Leaflets rugose; reticulate venation prominently exerted (rough to the touch); bark rough and fissured (northern Transvaal to Swaziland and northern Natal) 1a. *R. tumulicola* var. *tumulicola*
- 135b Leaflets relatively smooth, not rugose:
- 136a Venation prominently reticulate; fairly open shrubs:
- 137a Branches with galls; veins translucent; spreading, much-branched shrubs, usually in clumps; deciduous in winter (coastal plain, south-western to eastern Cape) 11a(i). *R. laevigata* var. *laevigata* forma *laevigata*
- 137b Branches without galls; veins not translucent; erect, branched shrubs, usually scandent (coast from Port Alfred to Tongaland) 12a. *R. nebulosa* forma *nebulosa*
- 136b Venation not prominently reticulate; fairly densely foliated shrubs:
- 138a Secondary veins number c. 3 per cm; leaflets obovate, apices generally obtuse; older leaflets turn orange yellow (widespread in moist areas from south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*
- 138b Secondary veins number c. 5 per cm; leaflets elliptic to obovate, apices acute; older leaflets not turning orange yellow (north-western Transvaal, northern and southern Natal) 10c. *R. rigida* var. *dentata*
- 121b Leaflet blades not glabrous, puberulous to velutinous:
- 139a Spinous, much-branched, woody shrubs; terminal leaflets shorter than 25 mm (central Namibia) 15b. *R. pyroides* var. *dinteri*
- 139b Non-spinous, much-branched shrubs; terminal leaflets longer than 25 mm:
- 140a Venation pennipinnate, tertiary veins not prominent; leaflets dark olive-green, drying dark; low shrubs in understorey of forest and scrub (coast, in and around the Alexandria forest, eastern Cape) 12b. *R. nebulosa* forma *pubescens*
- 140b Venation reticulate, tertiary veins prominent:

- 141a Leaflet blades uneven, slightly puckered; large shrubs with prominent exserted inflorescences; branches rarely with galls (favouring clay soils in south-western Cape, common along fences and roads in the southern and eastern Cape and occurring sporadically in Natal and eastern Transvaal) 18b. *R. rehmanniana* var. *glabrata*
- 141b Leaflet blades relatively smooth, not puckered:
- 142a Branches with galls, leaflets tomentose, veins translucent; low shrubs, usually in clumps; bark grey granular (sandy parts, coastal areas, south-western Cape) 11b. *R. laevigata* var. *villosa*
- 142b Branches without galls; leaflets tomentose to velutinous; veins not translucent; low shrubs, seldom in clumps; bark often rough and fissured (escarpment, eastern Transvaal and Soutpansberg) 1b(i). *R. tumulicola* var. *meuseana* forma *meuseana*
- 120b Terminal leaflets more than 2 × longer than broad:
- 143a Terminal leaflets less than 4 × longer than broad: [143b on p. 18]
- 144a Leaflet blades glabrous: [144b on p. 18]
- 145a Drupes circular, globose to obovate, obloid (1,0–1,3 × broader than deep):
- 146a Leaflets blueish green, somewhat rubbery; amphistomatous; bark smooth, young bark and veins reddish (usually on dolomite, southern, eastern and northern Transvaal) 47. *R. zeyheri*
- 146b Leaflets olive-green:
- 147a Trees or shrubs with single, smooth upright stems:
- 148a Terminal leaflets generally wider than 25 mm, apices acuminate, margins often finely undulate; small tree with young stems prominently spiny (forests, southern Cape to northern Transvaal) 2. *R. chirindensis*
- 148b Terminal leaflets generally narrower than 25 mm, apices acute, margin always entire; shrubs without spines (forest verges, eastern to northern Transvaal) 4. *R. transvaalensis*
- 147b Trees or shrubs, multiple-stemmed or much-branched:
- 149a Flowers dark red; drupes tricuspidate; leaflets rigid, revolute; petiole relatively broad, flattened above but not winged (mountains, south-western Cape) 51a. *R. scytophylla* var. *scytophylla*
- 149b Flowers greenish yellow; fruits not tricuspidate:
- 150a Drupes less than 3 mm in diameter; leaflets distinctly olive-green; small tree or large shrubs, often spiny (banks of rivers, northern Namibia, Caprivi and northern Botswana) 16. *R. quartiniana*
- 150b Drupes more than 3 mm in diameter:
- 151a Leaflets amphistomatous, upper and lower surfaces appear similar, oblanceolate; petiole prominently channelled above; low shrubs with branched shoots arising from a woody rootstock; often in colonies (rare, near Grahamstown) 46. *R. albomarginata*
- 151b Leaflets hypostomatous, upper and lower surfaces generally not similar, or if similar, then revolute:
- 152a Leaflets conduplicate, strongly folded; smooth-stemmed, low shrublets, seldom above 1 m (Albany to Witwatersrand) 10a. *R. rigida* var. *rigida*
- 152b Leaflets not conduplicate:
- 153a Petioles broadly winged; leaflets strongly revolute; venation reticulate, secondary veins prominently exserted, numbering c. 3 per cm; young growth with russet indumentum; much-branched shrubs, branches ending in stout spines; drupes elliptic, ellipsoid, resinous and extremely unpleasant to the taste (Langebaan peninsula, south-western Cape, and southern to eastern Cape) 70. *R. pterota*
- 153b Petioles not broadly winged:
- 154a Leaflets shiny and sticky, with blackish mealy indumentum; branched shrublets rarely above 1 m; shoots prominently lenticellate, arising from a woody rootstock; deciduous (Drakensberg escarpment from Van Reenen, Natal, to near Dirkie'sdorp, Transvaal) 14. *R. dracomontana*
- 154b Leaflets not as above:
- 155a Veins prominently exserted above; small trees or shrubs with gnarled trunks; old bark rough and fissured, bark on young branchlets smooth and reddish (high-lying areas from south-eastern Transvaal to Soutpansberg) 1a. *R. tumulicola* var. *tumulicola*

- 155b Veins not exerted above:
- 156a Terminal leaflets generally longer than 30 mm; old bark granular, not blocky:
- 157a Venation not reticulate, pennipinnate, tertiary veins indistinct; densely foliated shrubs with ascending branches; older leaves turning orangy yellow; galls often on leaflets, rare on branches (widespread in moister areas from south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*
- 157b Venation reticulate, tertiary veins prominent but not exerted:
- 158a Leaflets generally 2–3 × longer than broad; veins translucent; branches often with galls, not spinous; spreading, open shrubs (coastal plain, south-western to eastern Cape) 11a(i). *R. laevigata* var. *laevigata* forma *laevigata*
- 158b Leaflets generally 3–4 × longer than broad; veins not translucent; branches rarely with galls, often spinous; petioles relatively long and slender; large, open shrubs (Karoo, southern Natal, Transkei and Orange Free State), southern morph of 15a. *R. pyroides* var. *pyroides*
- 156b Terminal leaflets generally shorter than 30 mm:
- 159a Small, crooked-stemmed trees; old bark rough and blocky; leaflets obovate, veins impressed (eastern Cape interior), smooth-leaved morph of 35. *R. refracta*
- 159b Dense, small shrubs, often in colonies; old bark granular; leaflets elliptical, secondary veins pale and prominently pinnate below (eastern Cape to southern Natal) 19. *R. fastigata*
- 145b Drupes oblate, ellipsoid to compressed (more than 1,3 × broader than deep):
- 160a Spinous small trees and large shrubs:
- 161a Terminal leaflets generally longer than 45 mm; leaflets narrowly elliptical to oblanceolate, pale in bushveld, dark green in moister areas; old bark rough and fissured (eastern Cape to northern Transvaal) 38. *R. gueinzii*
- 161b Terminal leaflets generally shorter than 30 mm:
- 162a Terminal leaflets generally longer than 15 mm, elliptic to obovate, rarely glaucous; spinous spurs massive, pale (yellowish brown); large, rounded shrubs (karroid parts, western to eastern Cape) 42. *R. longispina*
- 162b Terminal leaflets generally shorter than 15 mm, obovate, emarginate, often glaucous; spurs less spiny, dark (greyish brown); large, open, much-branched shrubs (widespread on hill slopes and koppies of the arid central southern Africa) 43. *R. burchellii*
- 160b Non-spinous trees and shrubs:
- 163a Terminal leaflets generally shorter than 15 mm, obovate, emarginate, often glaucous; spurs dark (greyish brown); large, open, much-branched shrubs (widespread on hill slopes and koppies of the arid central southern Africa) 43. *R. burchellii*
- 163b Terminal leaflets longer than 15 mm:
- 164a Leaflets amphistomatous, upper and lower surfaces appear similar:
- 165a Young leaflets glutinose, obovate to spatulate, smooth, often markedly undulate; trichomes absent; woody, much-branched open shrubs (south-western Cape and Namaqualand) 45. *R. undulata*
- 165b Young leaflets not glutinose, dull and either golden or pink, ovate, not markedly undulate, with stellate to sheet-like trichomes; erect, branched, sparsely foliated shrubs, stems arising from a woody rootstock (Soutpansberg) 22b. *R. magalimontana* subsp. *coddii*
- 164b Leaflets hypostomatous, upper and lower surfaces not similar, or if similar, margins revolute:
- 166a Small trees with rough reticulate bark:
- 167a Old bark blocky; leaflets obovate, young branchlets tomentose; drupes pale straw-coloured, lenticular (more than 1,7 × broader than deep) (Transkei to northern Transvaal) 34. *R. pentheri*
- 167b Old bark fissured, less blocky; leaflets elliptical to oblanceolate; drupes chestnut colour, oblate, ellipsoid (1,31–1,60 × broader than deep) (eastern Cape, Transkei, Natal, eastern and northern Transvaal) 38. *R. gueinzii*

- 166b Small trees or somewhat upright shrubs with granular to slightly stringy bark:
- 168a Leaflets somewhat shiny, yellowish green to dark olive-green, drying polished bronze, narrowly elliptic to obovulate, secondary venation pale and slightly exerted above; densely foliaged small trees; drupes usually verrucose (eastern rim of Bushveld Igneous Complex, Sekhukhuniland, Transvaal) 39. *R. sekhukhuniensis*
- 168b Leaflets dull, brownish olive-green, secondary venation dark and immersed in lamina; fairly densely foliaged shrubs; drupes never verrucose (southern Cape to Natal and southern Transvaal) 44. *R. pallens*
- 144b Leaflet blades puberulous to tomentose:
- 169a Terminal leaflets longer than 30 mm:
- 170a Leaflet blades uneven, slightly puckered; venation reticulate; leaflet margins rarely all entire, apices acute, obtuse and retuse; large, spreading shrubs (favouring clay soils in south-western Cape, common along fences and roads in the southern and eastern Cape and occurring sporadically in Natal and eastern Transvaal) 18b. *R. rehmanniana* var. *glabrata*
- 170b Leaflet blades relatively even, not puckered; venation penniparallel:
- 171a Small, crooked-stemmed, grey-barked trees or open shrubs; leaflets elliptical to obovate, terminal leaflets generally 2–3 × longer than broad:
- 172a Leaflet apices obtuse, rarely acute; non-spinous shrubs or small trees without galls; secondary veins not prominently pinnate nor surface tomentose below (forest and scrub forest margins from around Hogsback, eastern Cape to eastern Transvaal) 15c. *R. pyroides* var. *gracilis*
- 172b Leaflet apices acute; spinous shrubs or small trees, generally with galls on branchlets, secondary veins prominently pinnate and surface tomentose below (widespread in open places in central southern Africa) 15a. *R. pyroides* var. *pyroides*
- 171b Densely foliaged shrubs, leaflets narrowly elliptical to oblanceolate, terminal leaflets generally 3–4 × longer than broad; inflorescences large and prominent:
- 173a Leaflets yellowish green, margins rarely all entire; inflorescences much-branched and large, covering large parts of the shrub when fully developed (lower altitudes, Natal and Zululand) 15d. *R. pyroides* var. *integrifolia*
- 173b Leaflets greyish to dark olive-green, generally all entire; inflorescences less prominent; small-fruited morph has drupes 1–2 mm in diameter (southern Natal); medium-fruited morph has drupes 3–4 mm in diameter (higher altitudes, central Natal to eastern Transvaal) 15d. *R. pyroides* var. *integrifolia*
- 169b Terminal leaflets shorter than 30 mm:
- 174a Densely foliaged, low shrubs, often in colonies: non-spinous; leaflets elliptical, margins slightly revolute, with prominent, pale yellow, pinnate secondary veins below (eastern Cape to southern Natal) 19. *R. fastigata*
- 174b Small, crooked-stemmed trees or much-branched, open shrubs; often spinous; leaflets obovate, margins strongly revolute, secondary veins not pale yellow below (scrub forests, Albany) 35. *R. refracta*
- 143b Terminal leaflets more than 4 × longer than broad:
- 175a Terminal leaflets less than 8 × longer than broad:
- 176a Leaf blades glabrous:
- 177a Terminal leaflets shorter than 30 mm; much-branched, often spinous, low growing shrubs usually forming thickets; leaflets often ciliate, apices acute; drupes oblate, obloid (northern Cape, Orange Free State, western Transvaal and eastern Namibia) 21. *R. ciliata*
- 177b Terminal leaflets longer than 30 mm:
- 178a Angle between secondary veins and midrib less than 30°; erect shrubs with straight branches; leaflets rigid, amphistomatous, oblanceolate; drupes tricuspidate (mountains from Porterville to Vanrhynsdorp, Cape) 49. *R. rimosa*
- 178b Angle between secondary veins and midrib more than 45°:
- 179a Bark smooth, becoming flaky when old; leaflets amphistomatous; pendulous trees or large shrubs, often with spines on lower trunks (banks of Vaal and Orange River west of Kimberley, and Berg and Olifants River in south-western Cape) 48. *R. pendulina*

- 179b Bark granular or rough, becoming fissured when old, leaflets hypostomatous:
- 180a Drupes discoid (more than 2,6 × broader than deep), rhombic; erect, small to fairly large trees with somewhat pendulous branches; bark rough and reticulate; leaflets lanceolate, margins rarely all entire (northern Cape, Orange Free State, Botswana, Namibia and Transvaal) 26. *R. leptodictya*
- 180b Drupes oblate, ellipsoid (1,31–1,60 × broader than deep):
- 181a Spinous, open shrubs or small crooked-stemmed trees; old bark fissured to blocky; leaflets dry olive-green to blueish green; drupes always smooth (eastern Cape, Transkei, Natal, Zululand, eastern and northern Transvaal) 38. *R. gueinzii*
- 181b Non-spinous, densely foliated shrubs or small erect trees; old bark granular to fissured, not blocky; leaflets dry polished bronze; drupes usually verrucose (eastern rim of Bushveld Igneous Complex, Sekhukhuniland, Transvaal) 39. *R. sekhukhuniensis*
- 176b Leaf blades not glabrous:
- 182a Terminal leaflets shorter than 12 mm, apices rounded, petioles broadly winged, trichomes stellate; new growth russet; much-branched, squarrose shrubs with branches ending in sharp spines (on granite, in the Kamieskroon–Springbok area, Namaqualand) 71. *R. horrida*
- 182b Terminal leaflets longer than 15 mm, apices acute, petioles not winged, trichomes simple or glandular; new growth not russet; much-branched shrubs, often spiny; leaflets often ciliate (northern Cape, Orange Free State, western Transvaal and eastern Namibia) 21. *R. ciliata*
- 175b Terminal leaflets more than 8 × longer than broad:
- 183a Leaflets puberulous, ciliate, narrowly elliptic to oblanceolate (only rarely more than 8 × longer than broad); much-branched, spiny shrubs forming thickets; drupes oblate, obovoid (northern Cape, Orange Free State, western Transvaal, Botswana and eastern Namibia) 21. *R. ciliata*
- 183b Leaflets glabrous:
- 184a Trees, rarely large shrubs, bark dark, fissured, very dark reddish brown when old; branches somewhat pendulous; leaflets linear to rarely falcate, venation prominently penniparallel, secondaries number c. 6 per cm; drupes oblate, ellipsoid (1,31–1,60 × broader than deep) (widespread in the central-western part of southern Africa) 30. *R. lancea*
- 184b Shrubs; bark smooth or granular, not dark and fibrous:
- 185a Drupes discoid (more than 2,6 × broader than deep), generally rhombic; leaflets linear, amphistomatous, apices rounded; woody, pale-barked, crooked-stemmed shrubs, often spiny (northern Cape) 28. *R. tridactyla*
- 185b Drupes from almost globose to ellipsoid (1,1–1,6 × broader than deep):
- 186a Leaflets acicular (more than 20 × longer than broad), rigid, adaxial surface slightly concave; much-branched, wiry shrubs, only rarely more than 1 m high (north-eastern Cape to southern orange Free State) 29. *R. dregeana*
- 186b Leaflets not acicular (less than 15 × longer than broad):
- 187a Terminal leaflets shorter than 30 mm, hypostomatous; much-branched shrubs, often spiny, usually forming thickets; bark granular; inflorescences exerted, not pendulous (northern Cape, Orange Free State, western Transvaal, Botswana and eastern Namibia) 21. *R. ciliata*
- 187b Terminal leaflets longer than 40 mm, amphistomatous; slender-stemmed, erect shrublets, only rarely more than 1 m high; bark smooth; foliage sparse, leaflets linear to falcate; inflorescences and drupes pendulous (north-western to eastern Transvaal) 68. *R. keetii*
- 119b Leaflets not entire:
- 188a Terminal leaflets less than 2 × longer than broad:
- 189a Leaf blades glabrous:
- 190a Leaflets rugose, reticulate venation prominently exerted (blade rough to the touch); small tree or large shrub, generally with a gnarled trunk; bark rough and fissured; margins irregularly dentate and teeth often confined to terminal leaflet (northern Transvaal to Swaziland and northern Natal) 1a. *R. tumulicola* var. *tumulicola*
- 190b Leaflet surfaces relatively smooth, not rugose:
- 191a All leaflets generally toothed; drupes circular to oblate, globose:
- 192a Densely foliated, erect shrubs occurring in clumps on coastal dunes; margins shallow toothed:

- 193a Leaves petiolate (petioles longer than 4 mm), leaflets broadly obovate, feintly revolute; pyrena with slight lateral processes; dark green, compact shrubs at foot of coastal dunes (southern Natal) 74. *R. taxon B*
- 193b Leaves sessile to subsessile (petioles shorter than 2 mm), leaflets obovate, revolute; pyrena with prominent lateral processes; dark green shrubs (coastal dunes, Cape Peninsula to southern Natal) 36. *R. crenata*
- 192b Less densely foliaged, open, woody shrubs or small trees; not occurring on coastal dunes, margins prominently toothed:
- 194a Leaflet apices truncate; small, much-branched shrubs with sparse foliage; leaflets broadly obovate, somewhat cuneiform (rare near Vaalhoek, eastern Transvaal and the Downs, north-eastern Transvaal), small-leaved morph of 9. *R. rogersii*
- 194b Leaflet apices acute; much-branched shrubs or small crooked-stemmed trees:
- 195a Leaflets fairly rigid, elliptical to obovate, margins with generally more than 3 indentations per each half of leaflet, petioles often yellowish (Waterberg, northern Transvaal and rare in Natal) 10c. *R. rigida* var. *dentata*
- 195b Leaflets pliable, broadly elliptical to obovate, margins with few and large indentations (generally fewer than 3 per each half of leaflet) (widespread on rocky outcrops, along streams and in forest understorey of the interior from north-eastern Cape to northern Transvaal) ... 7. *R. dentata*
- 191b Not all leaflets generally toothed; drupes oblate, ellipsoid:
- 196a Drupes circular, obloid (1,1–1,3 × broader than deep), leaflet margins with few irregular, deep lobes; densely foliaged shrubs with ascending branches, older leaves turning orangy yellow (widespread in moister areas from south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*
- 196b Drupes oblate, ellipsoid (1,5–1,9 × broader than deep), leaflet margins with few to many shallow, generally terminal irregular teeth:
- 197a Leaflets amphistomatous, often crisped to undulate; shrubs squarrose, open, not spiny (south-western Cape and Namaqualand) 45. *R. undulata*
- 197b Leaflets hypostomatous, not undulate or crisped, only apical margin toothed; large rounded shrubs, branches ending in short spurs (widespread in arid central southern Africa; toothed morph in eastern Orange Free State and Lesotho) 43. *R. burchellii*
- 189b Leaf blades not glabrous:
- 198a Drupes discoid (more than 2,6 × broader than deep):
- 199a Leaflets pubescent on both surfaces, margins coarsely crenate; much-branched, thorny shrub or small tree up to 9 m tall (Namibia, Botswana, northern Cape and north-western Transvaal) 26. *R. leptodictya*
- 199b Leaflets glabrous, margins shallowly crenate; shrub or small tree up to 4,5 m tall (near Chobe, north-eastern Botswana) 27. *R. lucens*
- 198b Drupes globoid (1,0–1,1 × broader than deep):
- 200a Lateral margins prominently toothed, teeth few and dentate; leaflet apices acute; much-branched shrubs to small, crooked-stemmed trees with broadly elliptical, tomentose leaflets (widespread on rocky outcrops, along streams and in forest understorey of the interior from north-eastern Cape to northern Transvaal) 7. *R. dentata*
- 200b Lateral margins rarely toothed, if so, not dentate:
- 201a Terminal leaflet apices truncate and irregularly crenate; leaflets somewhat cuneiform; small to relatively large trees with crooked trunks and rough bark (in thorn and grass veld, away from forests, Transkei to northern Transvaal) 18a. *R. rehmanniana* var. *rehmanniana*
- 201b Terminal leaflet apices obtuse to rounded, occasionally retuse, rarely acute; leaflet margins weakly lobed; leaf surfaces often uneven (puckered); inflorescences often glomerulate and prominently exserted; small to large, much-branched, spreading shrubs (favouring clay soils in south-western Cape to eastern Cape, common along fences and roads in southern and eastern Cape and occurs sporadically in eastern Transvaal) 18b. *R. rehmanniana* var. *glabrata*
- 188b Terminal leaflets more than 2 × longer than broad:
- 202a Terminal leaflets less than 4 × longer than broad: [202b on p. 22]

- 203a Drupes compressed (more than 1,6 × broader than deep):
- 204a Drupes lenticular (1,6–2,1 × broader than deep), leaflet teeth shallow:
- 205a Single stemmed, densely foliated, large shrubs, also often smaller and crooked-stemmed; bark rough, reticulate becoming blocky; leaflets dark green, never glutinose:
- 206a Terminal leaflets generally shorter than 40 mm, young branchlets pale, tomentose (Transkei to northern Transvaal) 34. *R. pentheri*
- 206b Terminal leaflets generally longer than 40 mm, young branchlets not pale, tomentose (near Nelspruit, Transvaal) 75. *R. taxon C*
- 205b Much-branched, sparsely foliated, squarrose shrubs; bark granular, not reticulate; leaflets olive-green, often glutinose:
- 207a Leaflets amphistomatous, obovate to spatulate, apices often acute, margins crisped to undulate; spreading, non-spinous shrubs (south-western Cape and Namaqualand) 45. *R. undulata*
- 207b Leaflets hypostomatous, obovate to spatulate, apices truncate to emarginate, often crenate; large, rounded shrubs, branches ending in short, dark spurs (widespread in arid central southern Africa) 43. *R. burchellii*
- 204b Drupes discoid (more than 2,6 × broader than deep):
- 208a Leaflet margins shallow-toothed to scalloped; leaflets obovate; open shrubs or small trees, bark grey (Namibia) 24. *R. marlothii*
- 208b Leaflet margins more prominently toothed, crenate to dentate; leaflets elliptic to broadly lanceolate; large shrubs or small trees (north-western Cape and southern Botswana) 76. *R. taxon D*
- 203b Drupes not compressed, globoid to obloid (1,0–1,2 × broader than deep):
- 209a Leaflet apices acute, acuminate or attenuate:
- 210a Leaflet apices acuminate or attenuate, terminal leaflets petiolulate, trunks often spinous; leaflet margins generally undulate to slightly crisped towards the apex; erect, smooth-barked tree (widespread in forests from southern Cape to northern Transvaal) 2. *R. chirindensis*
- 210b Leaflet apices acute, terminal leaflets not petiolulate; trunks often spinous:
- 211a Leaflets rugose, reticulate venation prominently exerted (blade rough to the touch); margins irregularly dentate, teeth often only in terminal leaflet; small tree or large shrub, generally with a gnarled trunk; bark rough and fissured (northern Transvaal to Swaziland and northern Natal) 1a. *R. tumulicola* var. *tumulicola*
- 211b Leaflets without prominently exerted venation, not rugose:
- 212a Much-branched, woody shrubs; bark granular:
- 213a Terminal leaflets narrow, lanceolate to oblanceolate, more than half of margins generally toothed; leaflets sparse, olive-green, dark above, pale below (isolated occurrences from north-eastern Cape to eastern Orange Free State and Lesotho) 32. *R. bolusii*
- 213b Terminal leaflets relatively broad, elliptical; less than half of margins toothed (rocky outcrops in southern Transvaal), longer-leaved morph of 7. *R. dentata*
- 212b Generally single-stemmed, erect shrubs or with multiple shoots from a woody rootstock; bark smooth, leaves dark green:
- 214a Terminal leaflets generally longer than 60 mm and wider than 15 mm; leaflets markedly dentate towards apex; thin-stemmed shrubs (eastern Transvaal) 9. *R. rogersii*
- 214b Terminal leaflets generally shorter than 60 mm and narrower than 15 mm; leaflets somewhat fleshy and markedly dentate; fairly densely foliated shrubs (north-eastern Transvaal, Swaziland and Natal) 5. *R. grandidens*
- 209b Leaflet apices obtuse, rounded or truncate:
- 215a Leaflet apices truncate; leaflets cuneiform, foliage somewhat sparse, small-branched shrubs (rare near Vaalhoek, eastern Transvaal, and The Downs, north-eastern Transvaal), truncate-leaved morph of 9. *R. rogersii*
- 215b Leaflet apices obtuse to rounded, sometimes retuse:
- 216a Leaflet margins lobed; densely foliated shrubs with ascending branches, older leaves turning orangy yellow (widespread in moister areas from south-western Cape to Soutpansberg) 40a. *R. lucida* forma *lucida*

- 216b Leaflet margins shallowly toothed, teeth acute, leaflets serrate to serrulate:
- 217a Leaves sessile to subsessile (petiole shorter than 3 mm); on coastal dunes:
- 218a Leaves sessile; stone of drupe (pyrena) with pronounced lateral processes; densely foliated, non-spinous, gregarious shrubs (Cape Peninsula to southern Natal) 36. *R. crenata*
- 218b Leaves subsessile; stone of drupe without pronounced lateral processes; open shrubs, generally spinous (morph found only at Port Alfred, eastern Cape) 35. *R. refracta*
- 217b Leaves petiolate (petiole longer than 3 mm):
- 219a Terminal leaflets generally longer than 40 mm, elliptical, dry blueish black; scandent shrub to small, crooked-stemmed tree in coastal bush, rare in interior (East London to Tongaland) 37. *R. natalensis*
- 219b Terminal leaflets generally shorter than 40 mm, obovate:
- 220a Low growing, densely foliated shrubs forming thickets at base of coastal dunes; branches erect (southern Natal) 74. *R. taxon B*
- 220b Woody, branched shrubs to crooked-stemmed, small trees with rough, reticulate bark (interior of eastern Cape) 35. *R. refracta*
- 202b Terminal leaflets more than 4 × longer than broad:
- 221a Leaflets with one or two large teeth at apex only, amphistomatous, rigid, pale olive-green; drupes tricuspidate; erect shrubs with ascending, straight branches (Porterville to Vánrhynsdorp, south-western Cape) 49. *R. rimosa*
- 221b Leaflets with toothed lateral margins:
- 222a Drupes discoid (more than 2.6 × broader than deep); large shrubs or more often small to fairly large (up to 9 m) trees with a single trunk; bark rough, reticulate, often blocky when old; foliage somewhat pendulous; leaflets lanceolate, apices acuminate (northern Orange Free State, northern Cape and Transvaal; Transvaal lowveld morph has prominently toothed leaflets) 26. *R. leptodictya*
- 222b Drupes globoid to ellipsoid (1.0–1.6 × broader than deep):
- 223a Leaflet margins prominently toothed, erose (jagged); drupe circular, globoid to obloid (1.0–1.3 × broader than deep):
- 224a Terminal leaflets broader than 10 mm; large shrubs with ascending straight branches; bark reddish brown with prominent lenticels; drupes small (less than 3 mm in diameter); occurring only on stream banks (north-eastern Orange Free State, Lesotho, Natal interior, Transkei Swaziland and south-eastern Transvaal) 17. *R. gerrardii*
- 224b Terminal leaflets narrower than 10 mm:
- 225a Terminal leaflets longer than 60 mm, leaves pale olive-green; inflorescences prominently exerted; drupes c. 4.5 mm in diameter; large, rounded, much-branched shrubs, usually on rocky koppies (widespread in Orange Free State, Lesotho and north-eastern Cape, reaching to near East London) 31. *R. erosa*
- 225b Terminal leaflets shorter than 40 mm; leaves dark green, leaflets somewhat fleshy; drupes c. 3 mm in diameter; slender, straggling shrubs on quartzites along scrub forest verges (southern Natal, Transkei, Swaziland and Transvaal) 5. *R. grandidens*
- 223b Leaflet margins less prominently toothed, not erose, irregularly serrate to serrulate; drupes oblate, ellipsoid (1.3–1.6 × broader than deep):
- 226a Spinous open shrubs or small crooked-stemmed trees; old bark fissured to blocky; leaflets dry olive- to blueish green; drupes always smooth (eastern Cape, Transkei, Natal, Zululand, eastern and northern Transvaal) 38. *R. gueinzii*
- 226b Non-spinous, densely foliated shrubs or small, erect trees; old bark granular to fissured, not blocky; leaflets dry polished bronze; drupes often verrucose (eastern rim of Bushveld Igneous Complex, Sekhukhuniland, Transvaal) 39. *R. sekhukhuniensis*

Leaflet venation

In the description of the taxa, the following terms, after Hickey (1973), are used to describe the various forms of pinnate venation of the leaflets:

1. **Craspedodromous**: secondary veins terminating at the margin.
 - (a) **Simple**: all of the secondary veins and their branches terminating at the margin.
 - (b) **Semi-**: secondaries branching just within the margin, one of the branches terminating at the margin, the other joining the superadjacent secondary.
 - (c) **Mixed**: some of the secondaries terminating at the margin and an approximately equal number of (usually intervening) secondaries otherwise.
2. **Camptodromous**: secondary veins not terminating at the margin.
 - (a) **Brochidodromous**: secondaries joined together in a series of prominent arches.
 - (b) **Reticulodromous**: secondaries losing their identity towards the leaf margin by repeated branching into a vein reticulum.
 - (c) **Kladodromous**: secondaries freely ramified toward the margin.
3. **Hypodromous**: all but the primary vein absent, rudimentary or concealed within the coriaceous mesophyll.

1. **Rhus tumulicola** S. Moore in Journal of Botany 59: 226 (1921). Type: Transvaal, The Downs, Dec. 1917, *Rogers 22033* (BM, holo.!: Z, iso.!).

Two varieties are distinguished:

la. var. **tumulicola**.

R. dura Schönl.: 35, t. p. 35 (1930); Burt Davy: 498 (1932); Compton: 330 (1976). *Secarsia dura* (Schönl.) F.A. Barkley: 57 (1965). Type: Transvaal, Graskop, 1100 m, Jan. 1925, *Evans* sub. *Schonland 5070* (GRA, holo.!: K, iso.!).

R. culminum R. & A. Fernandes: 184, t. 44-45 (1965a); R. & A. Fernandes: 612 (1966). Type: Zimbabwe, Chimanimani Mts, *Chase 2958* (BM, holo.!: COI!, SRGH!, iso.).

R. synstylica R. & A. Fernandes var. *synstylica*: 255, t. 13 (1965b). Type: Transvaal, Zoutpansberg, 1350 m, 27.10.1948, *Codd & Dyer 4481* (PRE, holo.!: COI!, K!, LD!, SRGH!, iso.).

Straggling shrub or tortuous small tree to 3,5 m high. *Bark* rough, somewhat fissured; older branches gnarled, younger branches occasionally striate, glabrous to densely puberulous. *Leaves* trifoliolate, petiolate; petiole rigid, shallowly canaliculate above, (8-)27(-56) mm long; leaflets sessile to shortly petiolulate, membranous, becoming rigidly coriaceous, concolorous, glabrous, dark olive-green, hypostomatous; lamina widely elliptic, elliptic to obovate, rarely conduplicate; base attenuate, apex variable, cleft to acute, mucronate, margin entire or often irregularly serrate towards apex; venation appears

reticulodromous above, kladodromous below, midrib and secondaries prominent above and below, veins pale yellow to rufous; terminal leaflets (20-)49(-108) × (13-)27(-49) mm, lateral leaflets (15-)27(-58) × (10-)20(-42) mm. *Panicles* pyramidal, much-branched, branches pubescent, males generally terminal and exerted beyond foliage, females shorter and axillary. *Flowers* normal (i.e. as for subgenus), styles sometimes partially fused. *Drupe* circular, obloid, glabrous, shiny, brown, 3,5 mm wide × 3,2 mm thick to 4,2 × 3,9 mm. Fig. 5.

Occurs along the mountain chain and adjacent highveld from the Soutpansberg in the northern Transvaal through the eastern Transvaal to Swaziland and northern Natal. Also occurs in Zimbabwe and Mozambique. Flowering recorded in September, October and November. Map 2.

Although the leaf morphology is extremely variable, the coriaceous leaflets with rough exerted vein reticulation are diagnostic. It is however sometimes difficult to separate this species from herbarium sheets of the single-drupe morph of the central African *R. longipes* Engl., into which it may yet have to be sunk.

Vouchers: *Hemm 244* (PRE); *Moffett 1747* (MO, PRE); *Prosser 1275* (J, K, NBG, PRE); *Schlieben 7140* (B, G, HBG, K, M, Z); *Thorncroft* in *T.M. 1831l* (PRE).

lb. var. **meeuseana** (R. & A. Fernandes) *Moffett*, comb. nov.

Type: Venda, Lake Funduzi, 16.11.1954, *Meeuse 9409* (PRE, holo.!: BOL!, K!, LISC!, SRGH!, iso.).

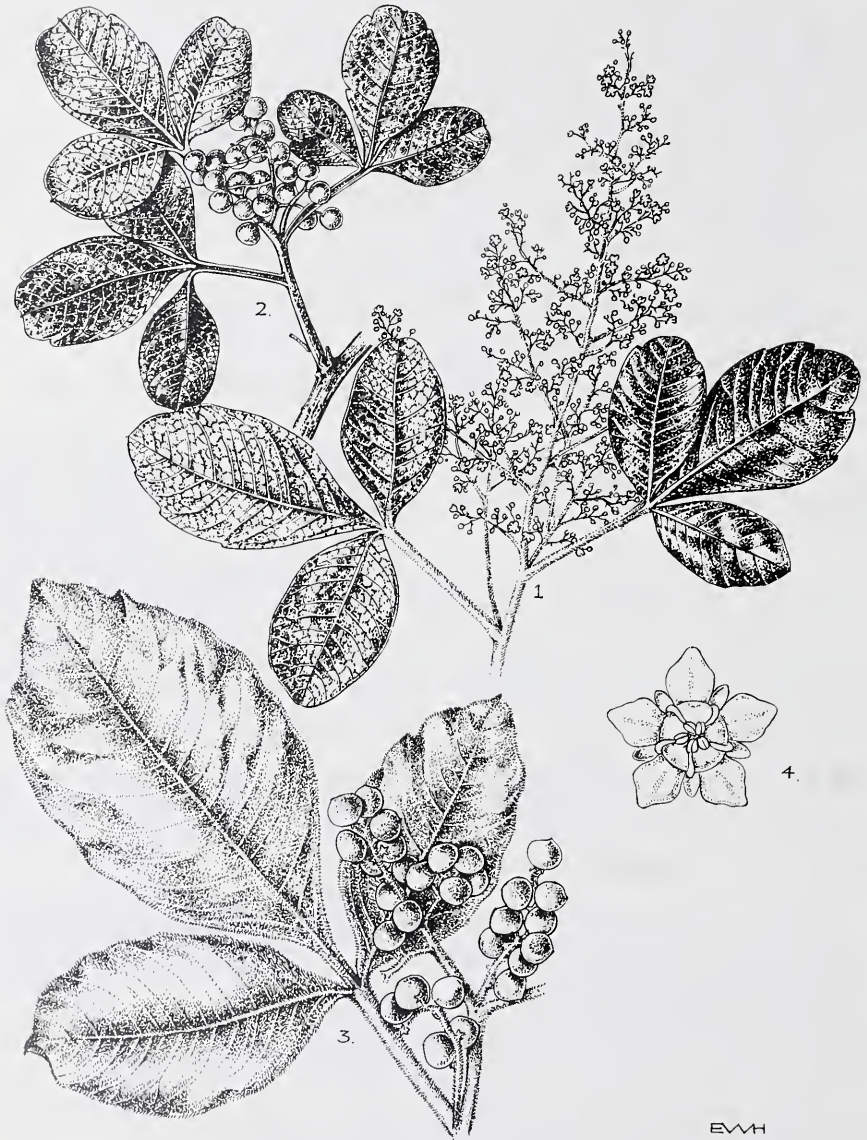
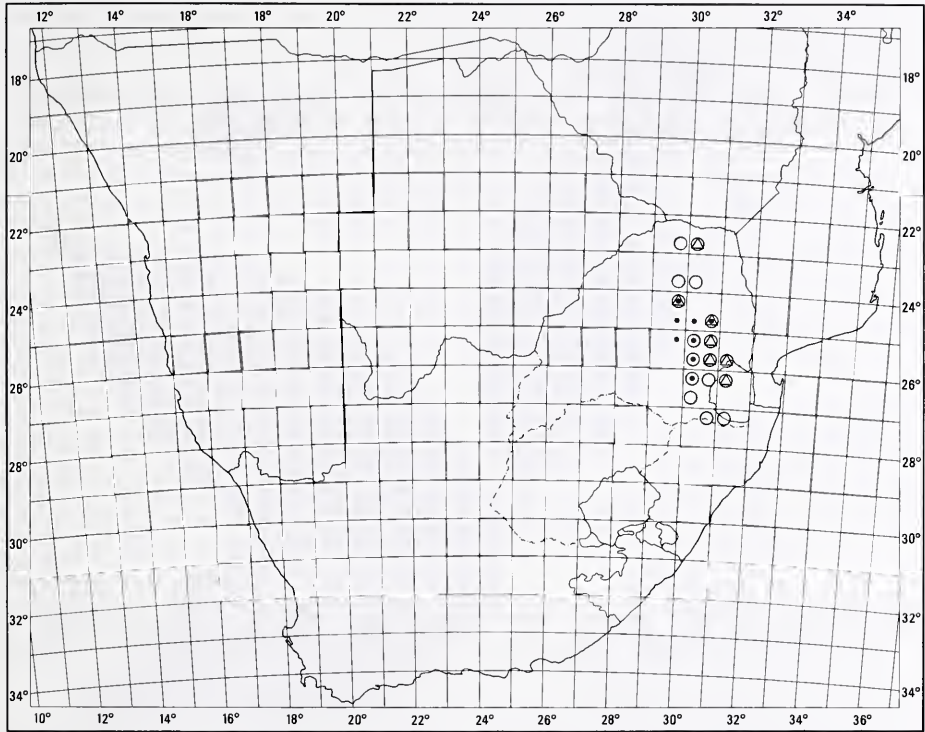


FIGURE 5.—*Rhus tumulicola* var. *tumulicola*: 1, branch with male inflorescence, $\times 0,8$; 2, fruiting branch, $\times 0,8$ (*Van der Schiff 4893*); 4, male flower, $\times 8$ (1 & 4, *Thorncroft* in *T.M. 183II*). *Rhus tumulicola* var. *meeuseana* forma *meeuseana*: 3, leaf and fruit, $\times 0,8$ (*Moffett 2130*). Artist: E. Ward-Hilhorst.

EWH



MAP 2. —○ *Rhus tumulicola* var. *tumulicola*
 △ *R. tumulicola* var. *meeuseana* forma *meeuseana*
 ● *R. tumulicola* var. *meeuseana* forma *pumila*

R. synstylica R. & A. Fernandes var. *meeuseana* R. & A. Fernandes: 257, t. 14 & 15 (1965b).

Two forms are distinguished:

1b(i). forma **meeuseana**.

R. ernestii Schönl.: 23, t. p. 24 (1930); Burt Davy: 496 (1932); Compton: 330 (1976). Type: Transvaal, Barberton, 1300 m, *Galpin 1016* (K, lecto.! here designated; BOL!, GRA!, NH!, PRE!, SAM!, Z!, isolecto.).

Distinguished from var. *tumulicola* by its shorter and more spreading habit and by the leaflets being densely tomentose to villous below and pubescent above. The drupes are also generally larger. *Petiole* (5–)28(–56) mm long; terminal leaflets (17–)60(–110) × (8–)31(–55) mm, lateral

leaflets (10–)41(–68) mm × (4–)20(–36) mm. *Drupe* 4,6 × 4,1 to 6,3 × 5,6 mm. Fig. 5.

Sympatric with var. *tumulicola* in its central area of distribution, from the Soutpansberg along the mountains of the eastern Transvaal to northern Swaziland. Flowering recorded in October. Map 2.

Vouchers: *Balsinhas 2798* (K, PRE); *Compton 29352* (NBG, PRE); *Miller 6054* (K, M, PRE, SRGH); *Moffett 2130* (MO, PRE); *Rogers 23123* (BM, PRE).

1b(ii). forma **pumila** *Moffett*, forma nov. Forma haec ab forma *meeuseana* habitu pumilo et foliis et drupis minoribus differt.

Type: Transvaal, Carolina, in rock crevices on hillsides, 1690 m, 23.10.1932, *Galpin 12493*



FIGURE 6.—*Rhus chirindensis*: 1, leaf and fruit, $\times 0.8$; 2, drupe, $\times 3.3$ (Moffett 2097); 3, male inflorescence, $\times 0.8$ (Bennie 392); 4, habit. Artist: E. Ward-Hilhorst.

(=12506) (PRE, holo.; BOL (herb. no. 31927)!, K!, iso.).

Differs from forma *meeuseana* in its dwarf habit and smaller leaves and drupes. Usually less than 0,5 m high and confined to cracks in rocks. *Petiole* (4–)9(–18) mm long; terminal leaflets (10–)17(–26) × (6–)8(–15) mm, lateral leaflets (8–)13(–19) × (3–)6(–10) mm. *Drupe* 4,1 × 3,5 to 5,0 × 4,6 mm.

Found in the colder, higher parts of the north-eastern and eastern Transvaal. Flowering recorded in October and November. A disjunct specimen, *Hilliard & Burt* 16344 (E, NU, PRE), from Transkei, is included here as it cannot morphologically be separated from this taxon.

A number of specimens from the Wolkberg area near Tzaneen, north-eastern Transvaal, e.g. *Gerstner* 5649 (K, PRE); *Moffett* 1748, 1772, 1779, 1780, 1790 (PRE); *Verdoorn* 2475 (PRE), are included here for the present. These plants are also dwarf and densely hairy, but have slightly more prominent pinnate venation below and somewhat revolute margins. They resemble *R. humpatensis* Meikle from Angola and may have to be united with that species following a revision of the whole subgenus. Map 2.

Vouchers: *Galpin* 12366 (BOL, K, PRE); *Gerstner* 5649 (K, PRE); *Moffett* 1790 (MO, PRE); *Rademacher* in *T.M.* 7270 (GRA, PRE).

2. *Rhus chirindensis* Bak. f. in Botanical Journal of the Linnean Society 40: 49 (1911); Eyles: 402 (1916); R. & A. Fernandes: 605 (1966); Compton: 329 (1976). Type: Zimbabwe, near Chirinda, 1200 m, 1906, *Swynnerton* 168 (BM, holo.!; SRGH!, iso.).

R. legatii Schönl.: 51, t. p. 52 (1930); Burt Davy: 502 (1932). *R. laevigata* sensu Thunb.: 52 (1794) non L.; Sond.: 514 (1860); Papp: 12 (1862); Engl.: 443 (1883); Diels: 589, 639 (1898); Sim: 195, t. 45 (1907). *R. chirindensis* Bak. f. forma *legatii* (Schönl.) R. & A. Fernandes: 700, t. 14 (1965c). *Searsia legatii* (Schönl.) F.A. Barkley: 54 (1965). Type: Cape of Good Hope, *Thunberg* in *herb. Thunberg* 7345 β (UPS, lecto.! here designated).

R. acuminata E. Mey. nom. nud. Vide Schönl.: 51 (1930) (*Drège* 3452, P!).

A shrub or small to sometimes large single-stemmed semi-evergreen tree reaching 23 m in South Africa. *Bark* smooth, older branches often spinous. *Leaves* trifoliolate; petiole glabrous, rarely pubescent, shallowly canaliculate above, (8–)41(–91) mm long; leaflets petiolulate, membranous, glabrous, concolorous, dark green

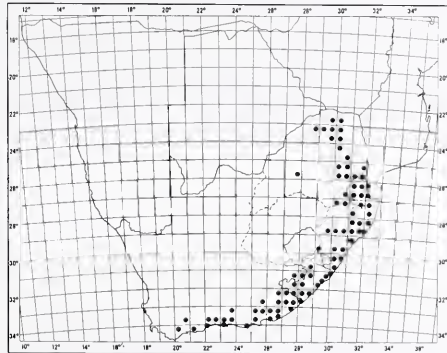
sometimes turning red before falling, hypostomatous; lamina ovate to ovate-lanceolate, base cuneate to attenuate, apex acuminate, rarely cirrhose; margin entire, undulate, often minutely serrulate; venation simple craspedodromous, midrib prominent below, impressed above, secondaries slightly prominent below; terminal leaflets (30–)85(–130) × (13–)28(–54) mm, lateral leaflets (11–)55(–103) × (6–)22(–46) mm. *Panicles* much branched, multiflorous, males chiefly terminal, up to 200 mm long, females shorter, chiefly axillary. *Flowers* normal. *Drupe* circular, globose, shiny, dark reddish brown, 2,9 × 2,8 to 7,0 × 6,3 mm. Fig. 6.

Widely distributed in the moister parts of the subcontinent from the northern Transvaal Soutpansberg through eastern Transvaal, Swaziland, Natal, Transkei, eastern Cape and southern Cape as far west as Swellendam. An unusual disjunction is *Van Vuuren* 158 (PRE) from the Magaliesberg near Brits. It is also found in Zimbabwe and Mozambique and probably extends into Central Africa. Flowering recorded from November to March. Map 3.

The South African specimens of *R. chirindensis* are the largest trees in the subgenus and possibly in the genus. They root from truncheons and have horticultural potential and also provide a rich red heartwood for furniture.

Like *R. tumulicola*, this species shows similarities with *R. longipes* Engl. *Adam* 11530 (PRE), determined as *R. longipes* from Labé in Guinea, is difficult to separate from this species as is *Ross* 1352 (SRGH) determined as *R. retinorrhoea* Steud., from Mt Elgon, Kenya.

Vouchers: *Bennie* 392 (GRA); *Moffett* 2999 (NH, PRE); *Nel* 376 (NBG, PRE); *Rogers* 18070 (BM, GRA, Z); *Schlieben* 10621 (K, M, PRE).



MAP 3.—*Rhus chirindensis*



EVH

FIGURE 7.—*Rhus acocksii*: 1, fruiting branch, $\times 0,8$ (Nicholson 465); 2, male inflorescence, $\times 0,8$; 3, climbing branch, $\times 0,8$; 4, male flower, $\times 8$ (Acocks 13250). Artist: E. Ward-Hilhorst.

3. *Rhus acocksii* *Moffett* in South African Journal of Botany 54: 2: 172 (1988). Type: Transkei, southern edge of Msikaba Gorge, Lusikisiki District, 13.1.1947, *Acocks 13250* (PRE, *holo.*).

Semi-evergreen prostrate to scandent shrub or woody climber with short recurved spines. *Bark* smooth, surface peeling. *Leaves* trifoliolate, petiolate; petiole semiterete, shallowly canalliculate above, (4–)27(–46) mm long; leaflets dark green, drying olive-brown, glabrous, hypostomatous, petiolulate; petiolules canalliculate, terminal \pm 6 mm long, lateral \pm 3 mm long; lamina ovate to elliptical, base cuneate to attenuate, apex acuminate often mucronulate and twisted; margin entire; venation simple craspedodromous, midrib prominent below, impressed above, other veins impressed; terminal leaflets (8–)45(–74) \times (5–)23(–34) mm, lateral leaflets (6–)35(–60) \times (4–)18(–40) mm. *Panicles* much branched, axillary and terminal, axillary peduncles persisting as recurved spines; *Flowers* normal. *Drupe* circular, globoid, green becoming shining dark red, 6,0 \times 5,5 to 7,0 \times 6,0 mm. Fig. 7.

This species occurs on the coastal platform from Oribi Gorge in southern Natal to just south of the Msikaba Gorge in Transkei. Flowering recorded from December to February. This species grows among quartzites in the understory of forest margins along the upper edges of the riverine escarpments. Map 4.

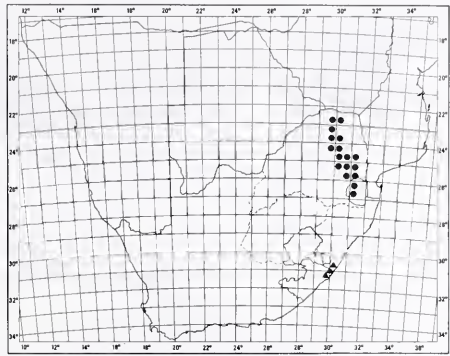
Rhus acocksii is possibly closely related to the sympatric *R. chirindensis*. The latter species however, differs in being a large erect tree with long straight spines on the lower part of its stems and having differently shaped leaflets with considerably shorter petiolules. There appears also to be a superficial resemblance between *R. monticola* Meikle of Malawi and *R. acocksii*.

Vouchers: *Balkwill & Cron 285* (J, PRE); *Schrire 1810* (NH, PRE); *Strey 6531* (BR, K, NH, NU, PRE).

4. *Rhus transvaalensis* *Engl.* in A. & C. DC., *Monographiae phanerogamarum* 4: 440 (1883); *Schönl.*: 53, t. p. 53 (1930); *Burt Davy*: 497 (1932). Type: Transvaal, Houtbosch, *Rehmann 5559* (Z, lecto.! here designated; GRA!, isolecto.).

Toxicodendron transvaalense (Engl.) Kuntze: 154 (1891).

R. eburnea *Schönl.*: 67, t. p. 67 (1930); *Burt Davy*: 504 (1932). Type: Transvaal, Pilgrim's Rest District, Mariepskop



MAP 4. — ▲ *Rhus acocksii*
● *R. transvaalensis*

Forest Reserve, *Keet 1457* (1547 vide *Schönl.*, sphalm.) (GRA, *holo.*!; K, *iso.*!).

Lax, many-stemmed shrub up to 2 m high, rarely small tree up to 4 m with pendulous pale branches. *Bark* smooth; young branches tomentose or glabrescent. *Leaves* trifoliolate, petiolate; petiole shallowly canalliculate above, pilose or glabrous, (5–)16(–37) mm long; leaflets subsessile, subcoriaceous, glabrous, dark green above, pale olive below, hypostomatous; lamina elliptic to narrowly elliptic, base cuneate to attenuate, apex acute, mucronulate; margin entire, weakly revolute; venation somewhat kladodromous; midrib yellow, prominent below, impressed above, other veins impressed above and below; terminal leaflets (12–)36(–60) \times (3–)12(–19) mm, lateral leaflets (7–)23(–40) \times (3–)9(–18) mm. *Panicles* numerous, relatively short (up to 50 mm long), mostly axillary, also terminal. *Flowers* normal. *Drupe* circular, globoid, glabrous, shiny, yellowish becoming light brown when mature 3,9 \times 3,4 to 4,9 \times 4,8 mm. Fig. 8.

Common in the Soutpansberg and along the mountains of the north-eastern and eastern Transvaal reaching Swaziland and northern Natal. Also occurs in the eastern Transvaal Lowveld. Flowering recorded from October to December. Map 4.

Rhus transvaalensis occurs along the edges of forests and streams. In the Mariepskop Forest Reserve near Sabie, *Keet 1457* in (PRE) stated that it (*R. eburnea* *Schönl.*) formed one of the chief constituents of the 'fynbos'.



FIGURE 8.—*Rhus transvaalensis*: 1, fruiting branch, $\times 0,8$ (Hanekom 1980); 2, branch with male inflorescence, $\times 0,8$; 3, male flower, $\times 6,6$ (Breier in *TM* 18319); 4, habit. Artist: E. Ward-Hilhorst.

The narrow elliptic leaflets, entire margins, prominent yellow midrib and short panicles readily separate this species from *R. chirindensis* (no. 2) with which it has been confused.

Vouchers: *Breyer in TM 18319* (PRE); *Hanekom 1980* (K, PRE, SRGH, WAG); *Miller S/245* (K, PRE); *Moffett 1932* (MO, PRE); *Van der Schijff 6124* (PRE, W).

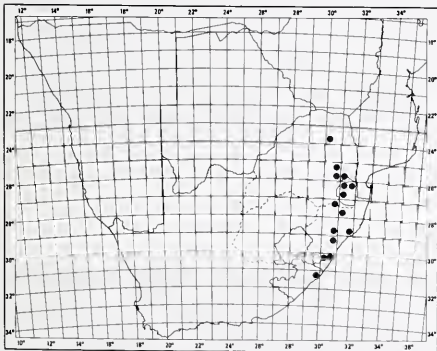
5. *Rhus grandidens* Harv. ex Engl. in A. & C. DC., Monographiae phanerogamarum 4: 440 (1883); Diels: 587 (1898); Engl.: 215 (1921); Schonl.: 41, t. p. 40 (1930). Type: Natal, *Gerrard & McKen 1399* (K, holo.!; BM!, TCD!, W!, iso.).

Toxicodendron grandidens (Harv.) Kuntze: 154 (1891).

R. galpinii Schinz: 638 (1908); Engl.: 208 (1921); Schonl.: 37 (1930); Burt Davy: 501 (1932). Type: Transvaal, Barberton, Umvoti Creek, 700 m., fl. 10.1889, *Galpin 646* (Z, holo.!; BOL!, K!, PRE!, iso.).

Slender to fairly dense shrub from 1,5 to 2 m high with a vegetative and floral morphology similar to *R. transvaalensis* (no. 4). Bark and young branchlets are, however, always smooth and glabrous and the leaflets narrowly elliptic to oblanceolate and prominently paucidentate to pauciserrate with each tooth mucronate. *Petiole* (8–)15(–32) mm long; terminal leaflets (18–)38(–70) × (3–)14(–30) mm, lateral leaflets (13–)25(–51) × (3–)10(–20) mm. *Drupe* 3,0 × 2,4 to 4,2 × 3,8 mm.

Nowhere plentiful, this species occurs along forest verges in a number of disjunct localities from the north-eastern Transvaal and eastern Transvaal through Swaziland, Zululand and Natal to Transkei. Flowering recorded in December and January. Map 5.



MAP 5.—*Rhus grandidens*

The width and size of the leaflets and drupes decrease progressively southwards. *Acocks 13415* (PRE) from Lusikisiki District has some lateral leaflets 3 mm wide and drupes 3,0 × 2,4 mm. It is also not unusual to find that one of the lateral leaflets has an entire margin while the other leaflets are severely toothed.

Unlike Schonland (1930), who regarded it as a hybrid of *R. dentata* (no. 7), I consider this to be a good species, easily recognized by its unusual irregularly toothed margin.

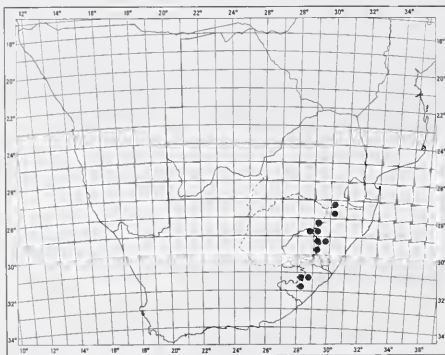
Vouchers: *Acocks 13415* (BR, K, PRE); *Codd 2099* (E, PRE); *Compton 27656* (K, NBG, PRE); *Moffett 2122* (PRE); *Moffett 3532* (NH, MO).

6. *Rhus montana* Diels in Engl., Botanische Jahrbücher 40: 86 (1907); Schonl.: 247 (1911); Engl.: 215 (1921). Type: Transkei, near Engcobo, 1350 m, *Bolus 8837* (B†; K, lecto.! vide Fernandes: 131 (1967); BOL!, GRA!, PRE!, isolecto.).

R. gerrardii (Harv. ex Engl.) Diels var. *montana* (Diels) Schonl.: 78, t. p. 78 (1930); Burt Davy: 507 (1932).

Slender, single to multistemmed deciduous shrub to small spreading tree up to 2,25 m high. Bark smooth, glabrous, grey-brown; young branchlets glabrous, pale brown. *Leaves* (3–)5(–7)-foliolate, petiolate; petiole terete to canaliculate above, (11–)24(–34) mm long; leaflets sessile, membranous, slightly discolorous, glabrous, dark green above, pale olive below, turning orange-red in autumn, hypostomatous; lamina elliptic to narrowly elliptic or obovate, base cuneate to attenuate, apex acute to acuminate, mucronulate; margins entire or prominently pauciserrate in upper half, teeth mucronulate; venation kladodromous to semicraspedodromous in toothed leaflets, midrib pale, prominent below, other veins impressed yet still visible below; terminal leaflets (27–)44(–68) × (8–)12(–16) mm, lateral leaflets (19–)30(–42) × (6–)9(–14) mm. *Panicles* much branched, multiflorous, terminal and axillary, up to 100 mm long. *Flowers* normal. *Drupe* circular, obloid, glabrous, shiny, pale brown, 3,5 × 3,0 to 4,0 × 3,5 mm.

Occurs in scrub forest along the escarpment just north of Wakkerstroom, then in the higher foothills of the Qwa Qwa and Natal Drakensberg reaching as far south as the mountains near Engcobo west of Umtata. Flowering recorded in October and January. Map 6.

MAP 6.—*Rhus montana*

The 5(–7)-foliolate plants are readily recognizable but as entire, toothed, 3- and 5-foliolate leaves sometimes occur on the same plant, each type usually on its own branch, the determination of isolated herbarium sheets is very difficult. Habit is of the utmost importance and to the trained eye the venation pattern below and the membranous leaflets are diagnostic. Trifoliate specimens are however easily confused with either *R. transvaalensis* (no. 4), *R. grandidens* (no. 5), *R. dentata* (no. 7) or more rarely *R. pyroides* var. *gracilis* (no. 15c).

Vouchers: *Flanagan 2752* (PRE); *Moffett 2187* (PRE); *Moffett 3518* (MO, NBG, PRE); *Thode 262* (K, NH, PRE); *West 1644* (BOL, NH).

7. *Rhus dentata* Thunb., *Prodromus plantarum capensium* 1: 52 (1794); Willd.: 1482 (1798); Pers.: 325 (1805); Desf.: 326 (1809); Thunb.: 219 (1818); Schult.: 653 (1820); Thunb.: 265 (1823); DC.: 72 (1825); G. Don: 74 (1832); Eckl. & Zeyh.: 149 (1836); Sond.: 513 (1860) p.p., excl. var. β ; Engl.: 435 (1883); Diels: 584 (1898); Sim: 196, t. 49 fig. II (1907); Schonl.: 242 (1911); Engl.: 215 (1921); Schonl.: 37 (1930); Burt Davy: 499 (1932) p.p.; R. & A. Fernandes: 596 (1966); R. Fernandes: 124 (1967); Compton: 329 (1976). Type: Cape of Good Hope, *Thunberg in herb. Thunberg 7325* [UPS, lecto.! vide R. Fernandes: 124 (1967)].

R. dentata var. *typica* Schonl.: 37 (1930). *R. dentata* var. *typica* forma *genuina* Schonl.: 38, t. p. 37 (1930); Burt Davy: 499 (1932). *Toxicodendron dentatum* (Thunb.) Kuntze: 153 (1891). *Searsia dentata* (Thunb.) F.A. Barkley: 54 (1965).

R. micrantha Thunb.: 221 (1818); Schult.: 654 (1820); Thunb.: 266 (1823); DC.: 72 (1825); G. Don: 74 (1832); Eckl.

& Zeyh.: 146 (1836). Type: Cape of Good Hope, *Thunberg in herb. Thunberg 7326* (UPS, lecto.! here designated, S!, isolecto.).

R. grandidentata DC.: 72 (1825); G. Don: 75 (1832). Type: Cape Province, *Burchell 3079* (G-DC holo.!; K!, S!, iso.).

R. parvifolia Harv. ex Sond.: 510 (1860). *R. dentata* var. *parvifolia* forma *glabrescens* Schonl.: 38 (1930); Burt Davy: 499 (1832). *R. dentata* var. *parvifolia* forma *parvifolia*, R. Fernandes: 125 (1967). Type: Eastern Cape Province, Buffelrivier, *Drège 5583* (P, lecto.! here designated; S!, isolecto.).

R. dentata var. *puberula* Sond.: 513 (1860); Burt Davy: 500 (1932). *R. dentata* var. *grandifolia* Schonl. forma *pilosa* (Engl.) Schonl.: 39 (1930). *R. dentata* var. *puberula* forma *puberula*, R. Fernandes: 126 (1967). Type: Eastern Cape Province, Zuurbergen, *Drège s.n.* (K, lecto.! vide R. Fernandes: 126 (1967); S!, isolecto.).

R. sonderi Engl. var. *glaberrima* Engl.: 436 (1883); Diels: 584 (1898). Type: Transvaal, Pretoria, *Rehmann 4744* (K, lecto.! here designated; BM!, Z!, isolecto.).

R. sonderi var. *pilosa* Engl.: 436 (1883); Diels: 584 (1898). *R. dentata* var. *dentata* forma *sparsepilosa* R. Fernandes: 124 (1967). Type: Eastern Cape Province, Caffraria, *Cooper 274* (K, lecto.! vide R. Fernandes: 125 (1967); E, G!, NH!, PRE!, TCD!, isolecto.).

R. sonderi var. *pilosissima* Engl.: 436 (1883); Diels: 584 (1898). *R. dentata* var. *grandifolia* Schonl. forma *pilosissima* (Engl.) Schonl.: 40, t. p. 39 (1930); Burt Davy 500 (1932). *R. dentata* var. *puberula* Sond. forma *pilosissima* (Engl.) R. Fernandes: 126 (1967). Type: Transvaal, Wakkerstroom, Kloof near Page's Hotel, *Rehmann 6863* (K, lecto.! vide R. Fernandes: 126 (1967); BM!, Z!, isolecto.).

R. dentata var. *grandifolia* Schonl. forma *glabra* Schonl.: 39 (1930); Burt Davy: 500 (1932). *R. dentata* var. *puberula* Sond. forma *glabra* (Schonl.) R. Fernandes: 126 (1967). Type: Transkei, Ntsubane, between Lusikisiki and coast, 560 m, *Fraser sub. Schonland 5048* (GRA, lecto.! vide R. Fernandes: 126 (1967); PRE!, PRF!, isolecto.).

R. dentata var. *parvifolia* forma *vilosissima* R. Fernandes: 125 (1967). Type: Natal, Mooi River, 1800 m, *Schlechter 3348* (COI, lecto.! vide R. Fernandes: 125 (1967); BM!, BOL!, G!, GRA!, K!, PRE!, S!, W!, WU!, Z!, isolecto.).

Much-branched, deciduous, dwarf shrub or spreading 1–2 m high shrub and occasionally a small tree reaching 5 m. *Bark* smooth, dull grey-brown; young branchlets glabrous, brown to fulvous or puberulous to pubescent, greyish. *Leaves* trifoliate, petiolate; petioles slightly canaliculate above, (8–)17(–33) mm long; leaflets sessile, membranous, concolorous, pale to dark green above, paler below, turning dull yellow to orange-red in autumn, hypostomatous; lamina obovate to widely obovate, rarely elliptic, base cuneate, apex acute, rarely acuminate,

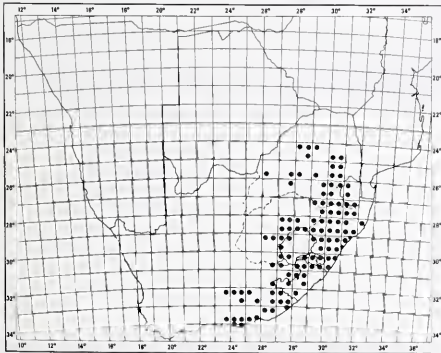
mucronate; margins prominently dentate with (1–)3(–5) mucronulate teeth in upper half; venation kladodromous to craspedodromous, midrib impressed above, prominent below, other veins immersed above, secondaries slightly prominent below; terminal leaflets (10–)26(–43) × (9–)17(–30) mm, lateral leaflets (6–)17(–30) × (7–)13(–22) mm. *Panicles* glabrous or puberulous, much branched, terminal and axillary, males up to 90 mm long extending beyond foliage. *Flowers* normal, styles slightly connate at base. *Drupe* circular, globose, glabrous, shiny, pale to dark brown, 3,4 × 3,0 to 5,2 × 5,3 mm. Fig. 9.

Widespread over the eastern parts of the subcontinent ranging from the Transvaal through Swaziland, Natal, the eastern half of the Orange Free State, Transkei, eastern Cape as far west as the mountains around Graaff-Reinet and as far south as Storms River. Flowering recorded from October to January. Map 7.

It occurs on rocky koppies and along the verges and in the understorey of scrub forest. Thunberg's type specimen is similar to dwarf plants in the mountains around Graaff-Reinet.

The many synonyms testify to the problem this species has given taxonomists in the past. The widely obovate, dentate leaflets are diagnostic and unlike Schonland (1930), I have had no trouble in regarding it as one taxon as the variation in size of leaflets and indumentum cannot be meaningfully separated. This species may however be confused with the previous species, *R. montana*, and the more fleshy leaved next species, *R. carnosula*.

Vouchers: *Leistner 3026* (K, KMG, M, PRE, SRGH); *Moffett 2863* (PRE); *D.B. Muller 1282* (PRE); *Schlechter 5984* (BM, BOL, COI, G, K, S, W, WU, Z); *A.E. van Wyk 63* (BLFU, PRE, PUC).



MAP 7.—*Rhus dentata*

8. *Rhus carnosula* *Schonl.* in *Bothalia* 3, 1: 41, t. p. 42 (1930); *R. Fernandes*: 123 (1967). Type: Eastern Cape Province, Gekau, *Drège 5569* β (P, lecto.! here designated).

R. crassinervia *Prest*: 42 (1844) nom. nud.

R. laevigata L. var. *β dentata* (E. Mey.) *Sond.*: 514 (1860).

R. carnosula *Schonl.* var. *parvifolia* *Schonl.*: 42 (1930). Type: Transkei, Ntsubane, *Fraser sub. Schonland 5053* (GRA, lecto.! here designated; K!, isolecto.).

Suffrutex, exposed rootstock up to 100 mm wide with prostrate or erect branches, to small shrub up to 1,5 m high. *Branches* glabrous, often brownish when young. *Leaves* trifoliolate, petiolate; petiole rigid, semi-terete, canaliculate above, (10–)20(–31) mm long; leaflets sessile, coriaceous, slightly fleshy, glaucous, hypostomatous; lamina elliptic to obovate, base cuneate, apex acute, mucronate; margin slightly thickened, often white, paucidentate in upper half with (1–)3(–7) prominent mucronate teeth; venation craspedodromous to kladodromous, midrib and other veins impressed above, prominent below; terminal leaflets (27–)39(–63) × (11–)19(–31) mm, lateral leaflets (9–)27(–48) × (8–)14(–23) mm. *Panicles* up to 90 mm long, exerted from the foliage when terminal, within when axillary. *Flowers* similar to but slightly larger than those of *R. dentata* (no. 7). *Drupe* also slightly larger than the previous species, circular, globose, glabrous, shiny dark brown, 4,9 × 4,4 to 6,1 × 5,7 mm.

Occurs mainly along the coast and adjacent interior from Oribi Gorge near Port Shepstone to East London, with outlying populations in northern Natal and Zululand. Flowering recorded from December to January and in April. Map 8.

While herbarium specimens of this species may be confused with *R. dentata* (no. 7), the plants *in situ* are very distinct, differing from the previous species by the suffrutescent habit and the obovate, glaucous, coriaceous to slightly fleshy leaves.

Vouchers: *Flanagan 1751* (BOL, PRE, SAM); *Fraser sub Schonland 5053* (GRA, K, PRE); *Moffett 3035* (PRE); *Smook 1840* (PRE); *Van Hoepen 1504* (PRE).

9. *Rhus rogersii* *Schonl.* in *Bothalia* 3, 1: 42, t. p. 42 (1930); *Burt Davy*: 501 (1932);



EWH

FIGURE 9.—*Rhus dentata*: 1, fruiting branch of glabrous morph, $\times 0,9$ (Killick 4369); 2, branch with male inflorescence of hairy morph, $\times 0,9$; 3, leaf of hairy morph, $\times 0,9$ (Mogg 14774); 4, male flower, $\times 9$ (2 & 4, Elan-Putick 152); 5, habit. Artist: E. Ward-Hilhorst.

R. & A. Fernandes: 190, t. 51 (1965a); R. & A. Fernandes: 613 (1966). Type: Transvaal, Barberton, 920 m, Dec., *Rogers 18270* (GRA, lecto.! here designated; G!, K!, PRE!, S!, Z!, isolecto.).

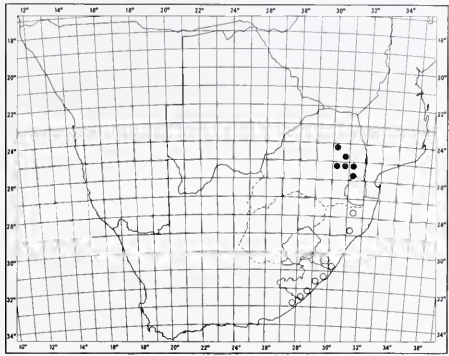
R. dentata Thunb. var. *truncata* Burt Davy: 501 (1932). Type: Transvaal, Lydenburg, The Downs, *Rogers 25076* (PRE, holo.!).

Suffrutex or slender, fastigiate shrub, 1.5–2 m high. Bark smooth, prominently lenticellate, dull grey-brown, young branchlets glabrous, sometimes puberulous, chestnut-brown to grey. Leaves trifoliolate, petiolate; petiole semiterete, (6–) 23(–52) mm long; leaflets sessile, subcoriaceous, concolorous, dark green, glabrous, hypostomatous; lamina narrowly elliptic to elliptic, obovate to widely obovate, base cuneate, apex extremely variable, acuminate, acute, truncate, mucronate; margin thickened, slightly revolute, whitish, markedly pauciserrate and teeth mucronulate towards apex; venation craspedodromous to kladodromous, midrib dull yellow to brown, slightly raised above, prominent below, secondaries impressed above, slightly prominent below; terminal leaflets (17–)55(–121) × (9–) 19(–48) mm, lateral leaflets (15–)37(–91) × (5–)18(–40) mm. Panicles much branched, males longer than females, terminal up to 150 mm long, usually exserted from foliage, axillary shorter, usually within foliage. Flowers as for *R. dentata* (no. 7). Drupe circular, globoid, glabrous, shiny, yellowish maturing dark brown, 4,1 × 4,1 to 5,6 × 5,4 mm.

Confined to the north-eastern and eastern Transvaal from north of Lydenburg to between Nelspruit and Barberton. Also occurs near the Swaziland border in Mozambique and probably also in Zimbabwe (see next paragraph). Flowering recorded from October to February. Map 8.

Plants from the type locality in the south as well as those from between Nelspruit and Machadodorp are easily recognized by the distinct long, obovate toothed leaflets. These leaflets however, become narrower and smaller further northwards eventually being truncate in the Downs area north of Lydenburg. The northern specimens may easily be confused with *R. dentata* (no. 7) and the Zimbabwean specimens attributed to that species are probably better regarded as *R. rogersii*.

Vouchers: *Elan-Puttick 235* (PRE); *Fourie 4/29* (PRE); *Junod 4154* (G, PRE); *Moffett 2077* (PRE); *Smuts & Gillett 1055* (K, PRE).



MAP 8.—○ *Rhus carnosula*
● *R. rogersii*

10. *Rhus rigida* Mill., Gardener's dictionary 8: 14 (1768); DC.: 71 (1825) excl. quoad specim. *Burchell 2929*; G. Don: 74 (1832) excl. quoad specim. *Burchell 2929*. Type: Ex herb. Miller (BM, holo.!).

Toxicodendron rigidum (Mill.) Kuntze: 154 (1891). *Searsia rigida* (Mill.) F.A. Barkley: 54 (1965).

Three varieties are distinguished:

10a. var. *rigida*.

R. eckloniana Sond.: 515 (1860); Engl.: 446 (1883); Diels: 590 (1898); Engl.: 217 (1921); Schönl.: 65, t. p. 65 (1930); Burt Davy: 504 (1932); Compton: 330 (1976). *Toxicodendron ecklonianum* (Sond.) Kuntze: 154 (1891). Type: Cape Province, 'ex hort. urbis Cap', *Ecklon & Zeyher 1095* (S, lecto.! here designated; SAM!, isolecto.).

R. schoenlandii Engl.: 215 (1921). Type: Eastern Cape Province, Grahamstown, *Daly & Gane 747* vide Schönl.: 65 (1930), (GRA!; Z!).

Dwarf shrublet to slender, much-branched erect shrub; branches dull grey-brown to chestnut when young, glabrous, lateral branches often spinous. Leaves trifoliolate, petiolate; petiole dull yellow, shallowly canaliculate above, (1–)11(–19) mm long; leaflets sessile, subcoriaceous, concolorous, dark green to blue-green, conduplicate, hypostomatous; lamina recurved, lanceolate, narrowly elliptic to narrowly ovate, base cuneate, apex acute, mucronulate; margin entire, slightly



MAP 9.—○ *Rhus rigida* var. *rigida*
 △ *R. rigida* var. *margaretae*
 ● *R. rigida* var. *dentata*

thickened, whitish; venation kladodromous, midrib prominent below, other veins impressed, obscure; terminal leaflets (3–)20(–37) × (1–)6(–11) mm, lateral leaflets (3–)15(–25) × (1–)5(–8) mm. *Racemes* and few branched panicles up to 60 mm long, mostly axillary, also terminal. *Flowers* normal but styles basally connate, persistent. *Drupe* circular to oblate, obloid, glabrous, shiny, pale to dark brown, 4,9 × 4,6 to 6,0 × 5,5 mm.

Distributed in two widely separated areas. One in the southern Transvaal and northern Orange Free State in an area circumscribed by Swaruggens, Pretoria and Frankfort, the other in the eastern Cape between Queenstown and Bathurst. Flowering recorded from January to March. Map 9.

The glabrous, subcoriaceous, conduplicate, recurved leaflets are diagnostic for this variety.

Vouchers: *Acocks 12155* (K, PRE); *Galpin 1494* (BOL); *Moffett 2219* (MO, PRE); *Sidey 3607* (PRE); *Wells 4209* (PRE).

10b. var. *margaretae* Burt Davy ex Moffett, var. nov. a var. *rigida* habitu plus prostrato et foliolis minus recurvis latioribus plerumque pubescentibus et/vel ciliatis differt.

Type: Transvaal, among rocks near Elsburg, 1800 m, 22.10.1893, *Schlechter 3539* (PRE, holo.; BM!, BOL!, BR!, E, G!, GRA!, K!, Z!, iso.)

R. margaretae Burt Davy ms. Schonl.: 65 (1930) ut. syn. *R. eckloniana* Sond.

Differs from the typical variety by the more prostrate habit and less recurved, broader leaflets

which are often pubescent or ciliate with the petiole and main veins pubescent. The secondary venation is also more prominent. *Petiole* (4–)13(–28) mm long; terminal leaflets (8–)19(–39) × (4–)10(–27) mm, lateral leaflets (7–)14(–29) × (4–)8(–21) mm. *Drupe* 4,6 × 3,6 to 4,8 × 3,7 mm.

Widespread in the southern Transvaal centred in the Witwatersrand with isolated occurrences ranging from Pietersburg and Lydenburg in the Transvaal through Vryheid and Umzimkulu in Natal to Cala in the Transkei and near Marquard in the Orange Free State. Flowering recorded in October. Map 9.

Because the plants are often prostrate, Burt Davy (1932) likened them to the creeping cotoneaster and suggested they might make good rockery plants.

Vouchers: *Burt Davy 15138* (GRA); *Codd 2664* (PRE); *Moffett 1735* (PRE); *Moffett 1870* (MO, PRE); *Morris 1053* (K, PRE).

10c. var. *dentata* (Engl.) *Moffett*, comb. nov.

Type: Transvaal, Drakensberg, Laingsnek, *Rehmann 6942* (Z, holo.!).

R. zeyheri Sond. var. *dentata* Engl.: 433 (1883).

R. rupicola Wood & Evans: 350 (1897); *Schönl.*: 50, t. p. 50 (1930); *Hilliard & Burt*: 170 (1987). Type: Natal, Liddesdale near Howick, among rocks near waterfall, 17 Feb. 1888, *Wood 3932* (NH, holo.!), *BOL.*, *GRA.*, *SAM.*, iso.).

R. truncata Schinz: 86 (1908). Type: Transkei, Insiowa (Insizwa), 2300 m, 26.1.1895, *Schlechter 6465* (Z, lecto.! here designated; *BM.*, *G.*, *GRA.*, *P.*, *Sl.*, *W.*, *WU.*, isolecto.).

R. tysonii Phil.: 119 (1913). Type: Griqualand East, near Sibiskraal, Matatiele, 5200 ft., Jan. 1884, *Tyson 1628* (SAM, holo.!), *GRA.*, *NBG.*, *PRE.*, iso.).

R. dyeri R. & A. Fernandes: 252, t. 8 & 9 (1965b). Type: Transvaal, Blaauwberg, 1650 m, 12.1.1955, *Codd & Dyer 9096* (PRE, holo.!), *K.*, *LISC.*, iso.).

Differs from the other varieties by the non-spinous, conspicuous, dull yellow stems, branches and veins, the broader, widely obovate, shiny leaflets, rarely pubescent in southern material, the margin, which apart from the Blaauwberg specimens is paucidentate to crenulate towards the apex, and by the apex varying from emarginate to erose and acute.

Fairly widespread in the Waterberg between Thabazimbi and Potgietersrus and in the Blaauwberg of the northern

Transvaal. Then ranges in a dwarfier morph through Lydenburg and Piet Retief in the Transvaal, Natal and Zululand and as far south as the Ngeli Mountain between Kokstad and Harding in East Griqualand and Insizwa near Mount Ayliff in Transkei. Flowering recorded in December and January. Map 9.

Vouchers: *Acocks 11518* (NH, PRE); *Codd 8703* (BM, PRE, SRGH); *Devenish 1292* (K, PRE); *Louw 3938* (PRE, PUC); *Moffett 1882* (PRE).

11. *Rhus laevigata* L., *Species plantarum* 2: 1672 (1763) non Thunb.; *Willd.*: 1485 (1798); *Pers.*: 326 (1805); *Desf.*: 327 (1809); *DC.*: 70 (1825); *G. Don*: 73(1832). Type: Cape of Good Hope, *herb. LINN 378–23* [LINN, lecto.! vide *R. Fernandes*: 129 (1967)].

R. lividum Salisb.: 169 (1796). *Toxicodendron laevigatum* (L.) Kuntze: 154 (1891). *R. mucronata* Thunb. var. *laevigata* (L.) *Schönl.*: 21 (1930). *Searsia laevigata* (L.) F.A. Barkley: 54 (1965).

Two varieties are distinguished:

11a. var. *laevigata*.

Two forms are distinguished:

11a(i). forma *laevigata*.

R. viminalis Vahl: 50 (1794) non Ait. Type: *Hort. Paris ex herb. Vahl* (C, lecto.! here designated).

R. atomaria Jacq.: 51, t. 343 (1798); *DC.*: 70 (1825); *G. Don*: 72 (1832). *R. mucronata* Thunb. var. *atomaria* (Jacq.) *Schönl.*: 21 (1930). *R. laevigata* var. *atomaria* (Jacq.) *R. Fernandes*: 129 (1967). Type: *Jacquin in herb. W 315177* (W, lecto.! here designated).

R. elongata Jacq.: 52, t. 345 (1798). *Toxicodendron elongata* (Jacq.) Kuntze: 153 (1891). *R. mucronata* Thunb. var. *β jacquinii* *Sönd.*: 513 (1860); *Engl.*: 433 (1883). Type: *Hort. Schoenbr.* t. 345, icono.!

R. mucronata Thunb.: 27 (1803); *Thunb.*: 216 (1818); *Schult.*: 657 (1820); *Thunb.*: 264 (1823); *Diels*: 583 (1898) p.p.; *Schönl.*: 19 (1930); *Adamson*: 564 (1950). *R. nervosa* Poir. var. *mucronata* (Thunb.) *DC.*: 70 (1825). *R. mucronata* var. *typica* *Schönl.*: 21, t. p. 21 (1930). *R. laevigata* var. *mucronata* (Thunb.) *R. Fernandes*: 129 (1967). Type: Cape of Good Hope, *Thunberg in herb. Thunberg 7353* [UPS, lecto.! vide *R. Fernandes*: 130 (1967)].

R. burmannii *DC.*: 69 (1825); *G. Don*: 73 (1832). *R. mucronata* var. *α burmannii* (*DC.*) *Sönd.*: 513 (1860); *Engl.*: 433 (1883). Type: *Burm. Afr. t. 91, fig. 2, icono.*!

R. pubescens Thunb. var. *subglabra* *Eckl. & Zeyh.*: 145 (1836). *nom. nud.*, *Ecklon & Zeyher II008* (NHI, Sl, SAM!).

R. pubescens var. *tulbaghica* *Eckl. & Zeyh.*: 145 (1836). *nom. nud.*, *Ecklon & Zeyher II009* (BOL, Sl).

R. pilipes Presl: 41 (1844). Type: Cape Province, Paarl, 3.12.1827, *Drège 680l* (PR, holo. photo.!; BM!, E, G!, K!, P!, S!, TCD!, TUB!, W!, iso.).

R. tenuiflorum Presl: 41 (1844). Type: Cape Province, Lion's Head, *Ecklon sub U.J. 683* (PRC, holo. photo.!; BM!, C!, E, G!, K!, M!, TUB!, W!, WU!, Z!, iso.).

Much-branched, unarmed or somewhat spinous, multistemmed deciduous shrub generally 1–2,5 m high, often forming thickets. *Bark* smooth, grey-brown; young branches glabrous, chestnut brown. *Leaves* trifoliolate, petiolate; petiole semiterete, narrowly winged, shallowly canaliculate above, (4–)13(–32) mm long; leaflets sessile, subcoriaceous, concolorous, dark green above, slightly paler below, glabrous, hypostomatous; lamina widely obovate to occasionally lanceolate, base cuneate to attenuate, apex rarely retuse, generally rounded, obtuse or acute, mucronate; margin entire, slightly revolute; venation semicraspedodromous to reticulodromous, midrib and reticulation prominent above and below; terminal leaflets (7–)33(–67) × (4–)15(–36) mm, lateral leaflets (6–)25(–53) × (3–)12(–28) mm. *Panicles* prominent, up to 60 cm long, fairly lax, glabrous, axillary and terminal. *Flowers* rarely bisexual, rarely 6-merous, corolla lobes relatively large, up to 2 mm long, styles free. *Drupe* circular, globose, glabrous, shiny, dull yellow to reddish, drying brown, 5,1 × 4,8 to 5,3 × 4,9 mm.

Distributed along the coast and coastal foreland of the south-western, southern and eastern Cape from Lambert's Bay to East London. A recent collection (*Le Roux 283l*, STE) from near Komaggas in Namaqualand has extended this range northwards by 250 km. Flowering recorded from October to December. Map 10.

The plants lose their leaves in late winter and flowers appear before or with the new foliage in October but continue flowering until December, so that flowers and fruit are often found together on the same plant. The prominent reticulate venation, translucent in fresh material is diagnostic, as is the fact that the branches of this taxon are parasitized by *Scyrtis athleta* (Tortricidae) resulting in spherical galls rich in tannin, a source utilised by the early settlers at the Cape.

Vouchers: *Galpin 294l* (BOL, GRA, PRE); *Moffett 1519* (MO, NBG, PRE, S); *Moffett 1616* (PRE, STE); *Schlechter 947l* (BM, BOL, BR, COI, E, GRA, K, L, P, PRE, S, W, WAG); *L.E. Taylor 4142* (NBG).

11a(ii). forma *cangoana* *Moffett*, forma nov. Forma haec ab forma *laevigata* habitu minori et foliolis minoribus glaucis coriaceis subtus venis ferrugo-croceis differt.

Type: Southern Cape Province, Oudtshoorn District, Cango Valley, Boomplaas, 25.6.1974, *Moffett 118* (PRE, holo.; STE, iso.).

Similar to the typical form in almost all respects except for its smaller habit and smaller, glaucous, coriaceous, almost rubbery leaflets with rusty to saffron venation below. Outwardly very close to *R. zeyheri* (no. 47), a Transvaal limestone species, but that species has amphistomatous leaflets whereas *R. laevigata* forma *cangoana* is hypostomatous. *Terminal leaflets* (16–)26(–35) × (9–)11(–13) mm, lateral leaflets (13–)18(–23) × (5–)8(–11) mm. *Drupe* 4,1 × 3,6 mm to 4,7 × 3,9 mm.

This form is confined to the geologically old limestones in the Cango Valley near Oudtshoorn and to recent limestones in the De Hoop Nature Reserve near Bredasdorp and at Klein Hagelkraal in the Caledon Division. Flowering recorded in December. Map 10.

Vouchers: *Britten 1730* (GRA, PRE); *Burgers 173l* (STE); *Hugo 1579* (STE); *Moffett 1569* (GRA, MO, NBG, PRE); *L.E. Taylor 4747* (K, S, SRGH, STE).

11b. var. *villosa* (*L. f.*) *R. Fernandes* in *Boletim da Sociedade Broteriana Sér. 2: 130* (1967). Type: *Herb. LINN 378.26* [LINN, lecto.! vide *Schonl.*: 17 (1930)].

R. villosa L.f.: 183 (1781) non sensu auct. plur.; Ait.: 368 (1789); Thunb.: 52 (1794); Willd.: 1483 (1798); Pers.: 325 (1805); Desf.: 328 (1809); Ait. f.: 165 (1811); Thunb.: 217 (1818); Schult.: 656 (1820); Thunb.: 265 (1823); DC.: 70 (1825); G. Don: 73 (1832); Sond.: 510 (1860); Engl.: 424 (1883) p.p. excl. var. cit.; Diels: 578 (1898) p.p. excl. var. cit.; Engl.: 211 (1921) excl. var. cit. *R. hirsutum* Salisb.: 170 (1796). *Toxicodendron villosum* (L.f.) Kuntze: 154 (1891). *R. mucronata* Thunb. var. *villosa* (L.f.) *Schonl.*: 22, t. p. 23 (1930).

R. incana Mill.: 8 (1768); Schult.: 656 (1820); Burt Davy: 495 (1932); Adamson: 563 (1950). Type: *Herb. Sloane 97: 155b*, specim. at top, [BM, lecto.! here designated as typotype for Pluk.: t. 219, fig. 8 (1692)].

R. mucronata Thunb. var. *latifolia* *Schonl.*: 22, t. p. 22 (1930). *R. laevigata* var. *latifolia* (*Schonl.*) *R. Fernandes*: 129 (1967). Type: Cape Province, Kommetjie, *Pillans 5012* [GRA, lecto.! vide *R. Fernandes*: 129 (1967)].

Differs from the sympatric typical variety by having slightly smaller leaves and young branches, leaves and inflorescence axes covered in an indumentum of long straight hairs. These may be sparse and confined to the petioles, veins and margins or both surfaces of the blade may be densely pubescent to somewhat tomentose below. *Terminal leaflets* (11–)31(–47) × (6–)15 (–24) mm, *lateral leaflets* (9–)23(–38) × (5–)11(–21) mm. *Drupe* 4,7 × 4,5 to 5,9 × 5,5 mm.

Rhus laevigata var. *villosa* is widespread along the coast and adjacent foreland in the south-western Cape from near Velddrif to the De Hoop Nature Reserve in the Bredasdorp District with isolated records also from Belvidere near Knysna and Port Elizabeth. Flowering recorded from October to December. Map 10.

Vouchers: *Burchell 125* (K, S); *Moffett 1526* (MO, PRE); *Moffett 2333* (GRA, MO, NBG, PRE); *Moffett 2676* (PRE, STE); *Penther 2280* (M, S, W).

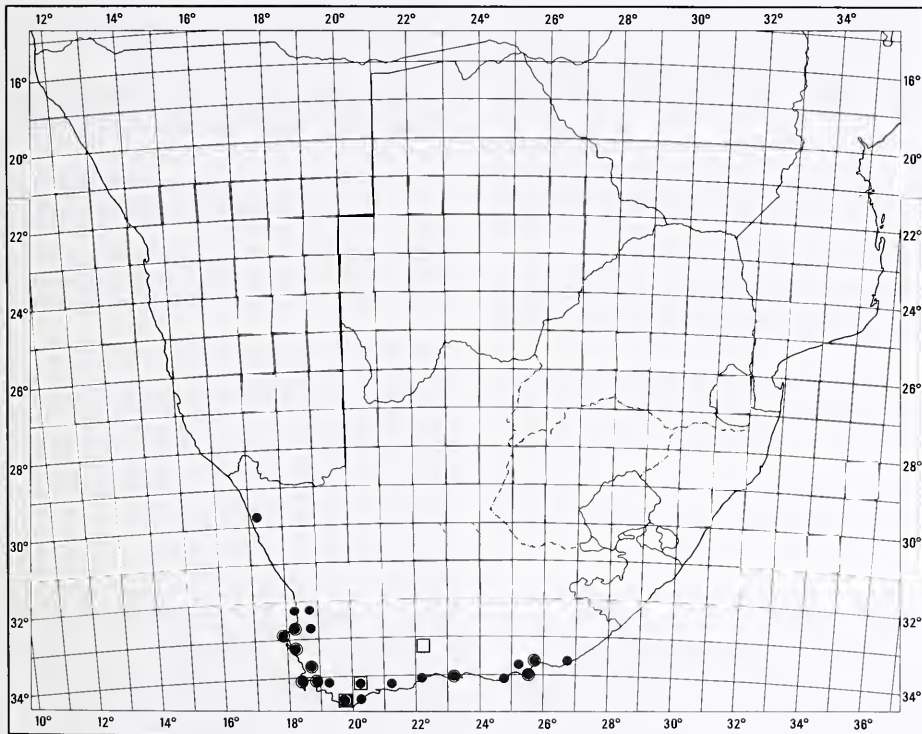
12. *Rhus nebulosa* *Schonl.* in *Bothalia*: 33, t. p. 34 (1930). Type: Natal, near Durban, 50 m, 1.7.1893, *Schlechter 2858* (GRA, lecto.! here designated; BM!, BOL!, G!, K!, S!, W!, WU!, Z!, isolecto.).

Two forms are distinguished:

12a. forma *nebulosa*.

R. microcarpa sensu R. & A. Fernandes: 613 (1966) non *Schonl.*

Straggling to scandent slender shrub, up to 4 m high. *Bark* smooth; branches glabrous, usually unarmed, sometimes spinous. *Leaves* trifoliolate, petiolate; petiole semiterete, (5–)17(–33) mm long; leaflets and the distinct semicraspedo-



MAP 10. — ● *Rhus laevigata* var. *laevigata* forma *laevigata*
 □ *R. laevigata* var. *laevigata* forma *cangoana*
 ○ *R. laevigata* var. *villosa*

dromous to reticulodromous venation are similar to those of the previous species but differ by the leaflets being membranous to subcoriaceous and shiny dark green above and rarely petiolulate; terminal leaflets (15-)41(-69) × (7-)21 (-34) mm, lateral leaflets (10-)28(-44) × (6-)17 (-30) mm. *Panicles* much branched, multiflorous, forming exposed sprays among the sparse foliage, axillary up to 70 mm long, females up to ± 400 flowers, terminal up to 200 mm long, males up to 1 600 flowers. *Flowers* minute, calyx lobes shorter than 0,25 mm, corolla lobes rarely exceeding 1 mm, rarely 6-merous, otherwise normal. *Drupe* as for previous species, but slightly smaller, 3,1-4,5 mm in diameter.

Ranges from Kosi Bay in Tongaland to just south-west of Port Alfred in the eastern Cape. It is strictly coastal except in a few parts of southern Natal where in the Port Shepstone area it may be found up to 20 km inland and in northern Zululand where it reaches inland as far as Ingwavuma and Pongola near the Swaziland border. This taxon also occurs in Mozambique (and on Inhaca Island). Flowering recorded in April. Map 11.

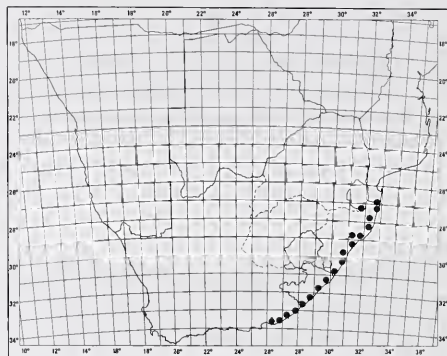
Although the leaves and fruit are very similar to *R. laevigata* var. *laevigata* forma *laevigata* [no. 11a(i)], its scandent habit and extremely small flowers serve to separate it fairly easily. Despite the scandent nature, it is cultivated as a hedge at Kirstenbosch, Cape Town, where it is semi-evergreen and distinctly different to the local *R. laevigata*.

Vouchers: *Acocks* 21059 (PRE); *Galpin* 2853 (GRA, K, PRE); *Gerstner* 3408 (B, K, NH, PRE); *Harrison* 499 (NH, PRE); *Ward* 5590 (NH, PRE, UDW).

12b. forma **pubescens** *Moffett*, forma nov. a forma *nebulosa* trichomatibus brevibus quae caulibus foliis et inflorescentiis vestiunt differt.

Type: Eastern Cape Province, Alexandria Forest, Olifantshoek, 150 m, 29.5.1953, *Johnson* 649 (PRE, holo.; K!, iso.).

Differs from forma *nebulosa* by the presence of short pubescent hairs on all parts. Those on the branchlets, petioles and veins are straight while those on the leaflet blades are slightly adpressed giving a velutinous feel. *Terminal leaflets* (26-)35(-46) × (12-)15(-20) mm, lateral leaflets (17-)18(-32) × (8-)12(-18) mm. *Drupe*, only immature seen, ± 3 mm in diameter.



MAP 11. — ● *Rhus nebulosa* forma *nebulosa*
 ◆ *R. nebulosa* forma *pubescens*

Adjacent to but allopatric with forma *nebulosa*, this form has only been collected in the coastal Alexandria Forest south of Alexandria in the eastern Cape. It grows on forest margins, along roads and around openings. Map 11.

Vouchers: *Moffett* 2471A (GRA, NBG, PRE); *Moffett* 2471B (GRA, MO, PRE); *Troughton* 252 (GRA); *Wells* 2768 (GRA).

13. *Rhus krebsiana* *Presl ex Engl.* in A. & C. DC., *Monographiae phanerogamarum* 4: 409 (1883); *Presl*: 41 (1844) nom. nud.; *Diels*: 573 (1898); *Engl.*: 203 (1921); *Schonl.*: 34, t. p. 35 (1930). Type: Cape of Good Hope, *Krebs* s.n. (G-DC (MP), holo.!; G!, PRC photo.!, iso.).

Toxicodendron krebsianum (Presl) Kuntze: 154 (1891).

Gnarled shrub branching close to ground or small crooked tree up to 3 m high. *Bark* dark and rough; branches blackish, rough, prominently striate, branchlets glabrous, chestnut brown. *Leaves* trifoliolate, petiolate; petiole dull yellow, semiterete, deeply canaliculate above, (11-)23 (-30) mm long; leaflets sessile, coriaceous, glutinous, concolorous, dark green above slightly paler below, hypostomatous; lamina elliptic, obovate to widely obovate, base cuneate, apex retuse, rounded, obtuse to rarely acute, mucronulate; margin entire, slightly revolute; venation semi-craspedodromous, midrib prominent below, impressed above, secondaries slightly prominent above and below, tertiaries prominently reticulate above, impressed below; terminal leaflets (21-)37(-70) × (11-)21(-35) mm, lateral leaf-

lets (12-)27(-39) × (10-)17(-25) mm. *Panicles* relatively short, up to 60 mm long, axillary within the dense foliage, terminal partially exerted. *Flowers* not seen, vide Engler (1883) relatively large, calyx lobes 1 mm long, corolla lobes 2 mm long. *Drupe* obovate, obloid, glabrous, shiny, light to dark brown, 4,3 × 3,0 to 8,0 × 7,5 mm.

Occurs in scrub forest in the foothills of high mountains ranging from the Loteni area north of Himeville in Natal, through the districts of Kokstad, Maclear, Cradock, Somerset East, Adelaide and Pearston reaching nearly to Graaff-Reinet. Map 12.

The gnarled dark stems and branches, coprosma-like leaflets and large fruit make this species easily recognizable. Through its habit and venation, it is probably related to the more northern *R. tumulicola* (no. 1). *R. krebsiana* is unusual in being summer deciduous with the new glossy foliage, flowers and fruit following in succession from January to July.

Vouchers: *Moffett 2616* (GRA, MO, PRE); *Moffett 2945* (GRA, MO, NBG, PRE); *Sim* in *PRE 47140* (PRE); *P.T. van der Walt 206* (PRE).

14. *Rhus dracomontana* Moffett, sp. nov.
Species distincta, 0,8-1,2 m alta, habitu deciduo, virgato, suffruticoso, ramis et foliis nigrescentibus farinosis, foliolis obovatis glutinosis, drupis globosis, facile distinguenda.

Type: Natal, Van Reenen, 1700 m, 4.3.1895, *Schlechter 6754* (6954 in BOL) (BOL, holo.; BM!, G!, K!, S!, Z!, iso.).

Deciduous, virgate suffrutex to 0,8 m high, occasionally forming dense shrubs 1,25 m high and 1,5 m wide. *Branches* rough, prominently lenticellate, darkly farinose. *Leaves* trifoliolate, petiolate, darkly farinose; petiole semiterete, canaliculate above, (7-)28(-48) mm long; leaflets sessile, thin, membranous, glutinose, concolorous, dark green above, slightly paler below, hypostomatous; lamina obovate, rarely elliptic, base cuneate, apex rounded to acute, mucronulate; margin entire; venation semicraspedodromous, translucent, midrib slightly prominent above, prominent below, secondary and tertiary veins impressed above and below; terminal leaflets (19-)46(-75) × (9-)21(-34) mm, lateral leaflets (12-)21(-50) × (6-)15(-23) mm. *Panicles* axillary and terminal, males up to 100 mm long, females up to 60 mm long. *Flowers*

normal. *Drupe* circular to obovate, globose, glabrous, shiny, drying brown, ± 4,2 × 3,5 mm. Fig. 10.

Found on the escarpment of the low Drakensberg in the Charlestown and Wakkerstroom area of Transvaal and at Van Reenen on the Orange Free State-Natal border. Flowering recorded from October to January. Map 12.

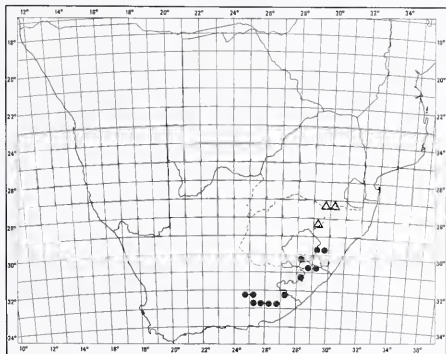
Rhus dracomontana is usually found on dolerite in grassland at the edge of scrub forest and is easily recognized by its suffrutescent habit, highly glutinous leaves and blackish farinose indument. The gap in distribution between Charlestown and Van Reenen is possibly due to a lack of collections along that part of the escarpment.

Vouchers: *Bews 1651* (NU); *Devenish 797* (PRE); *Moffett 3520* (MO, NBG, PRE); *Smook 1212* (PRE); *Wood 4767* (K, NH).

15. *Rhus pyroides* Burch., *Travels in the interior of southern Africa* 1: 340 (1822); *Sond.*: 511 (1860) excl. var. *β glabrata*; *Engl.*: 430 (1883) p.p.; *Diels*: 582 (1898); *Engl.*: 211 (1921) p.p.; *Dinter*: 135 (1926); *Schönl.*: 29, t. p. 30 (1930); *Burt Davy*: 497 (1932); *Mill.*: 47 (1952); *R. & A. Fernandes*: 604 (1966); *Merxm. & A. Schreib.*: 13 (1968); *R. Fernandes*: 131 (1967). Type: Northern Cape, Asbestos Mtns, *Burchell 1796* (K, holo!).

R. villosa auct. mult. non L.f. *Toxicodendron pyroides* (Burch.) Kuntze: 154 (1891).

Four varieties are distinguished (to appreciate the differences in the various taxa it is essential to study them *in situ*; characters such as habit, branching and colour of foliage combine to give



MAP 12.—● *Rhus krebsiana*
△ *R. dracomontana*



FIGURE 10.—*Rhus dracomontana*: 1, fruiting branch and caudex, $\times 0.8$; 2, leaves and male inflorescence, $\times 0.8$; 3, female flower, $\times 8$ (2 & 3, *Devenish 390*); 4, drupe, $\times 2.5$ (1 & 4, *Devenish 1970*); 5, habit. Artist: E. Ward-Hilhorst.

a textural picture visually distinct, but difficult to define):

15a. var. *pyroides*.

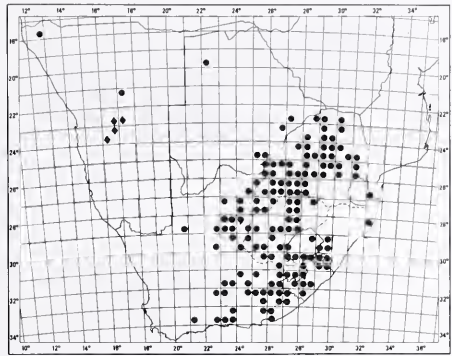
R. puberula Eckl. & Zeyh.: 144 (1836). *Toxicodendron puberulum* (Eckl. & Zeyh.) Kuntze: 154 (1891). *R. pyroides* var. *puberula* (Eckl. & Zeyh.) Schonl.: 31 (1930); Burt Davy: 498 (1932). Type: North-eastern Cape, Tambukiland, between Silo (Shiloh) and Klipplaativier, Ecklon & Zeyher 1104 (S, lecto.! lower right sheet 1 here designated; SAM! isolecto.).

R. baurii Schonl.: 32 (1930). Type: North-eastern Cape, Whittlesea, Shiloh, 3500 ft., Dec., *Baur 856* (GRA, lecto.! here designated; K!, isolecto.).

R. vulgaris Meikle: 290 (1951); Van der Veken: 32, t. 4 (1960); White: 213 (1962); R. & A. Fernandes: 604 (1966); Kokwaro: 32 (1986). Type: Kenya, Nandi District, Kaimosi, C.G. Rogers 711 (K, holo.!).

Unarmed or spiny multistemmed shrub or small tree up to 6 m high. *Bark* grey, granular; branchlets slender, sometimes pendulous, puberulous, occasionally parasitized with spherical galls, spines stout, up to 60 mm long. *Leaves* trifoliolate, petiolate, petiole semiterete, shallowly canalicate above, puberulous to villous, (5-)16(-46) mm long; leaflets submembranous to subcoriaceous, concolorous, dull olive-green above, slightly paler below, puberulous to sericeous above and villous below, hypostomatous; lamina elliptic to obovate, base cuneate, apex obtuse to acute, rarely acuminate, occasionally mucronulate; margin entire, rarely with one or two indentations, slightly revolute; venation semicraspedodromous, midrib and secondaries prominent above and below, tertiaries prominent or hidden by indumentum; terminal leaflets (6-)40(-85) × (5-)18(-29) mm, lateral leaflets (6-)22(-56) × (4-)11(-26) mm. *Panicles* lax, puberulous to villous, terminal up to 100 mm long, axillary up to 70 mm long, often subglomerulate. *Flowers* shortly pedicellate to sessile, pedicels and calyx hairy, otherwise normal. *Drupe* circular, globose, glabrous, shiny, dull yellow to reddish, drying dark brown (mature rarely seen), 4,6 × 4,4 to 4,9 × 4,5 mm. Fig. 11.

One of the most widespread species, occurring in the whole of the Transvaal except for the cold south-eastern corner, the whole of the Orange Free State except for the cold north-eastern corner, Lesotho, the south-western corner of Natal, Transkei interior, north-eastern Cape, eastern Cape, southern



MAP 13.—● *Rhus pyroides* var. *pyroides*
◆ *R. pyroides* var. *dinteri*

Cape interior, and northern Cape. Isolated records from northern Namibia, northern Botswana and northern Zululand appear out of place but cannot from the available herbarium material, be separated from this taxon. Herbarium specimens from Central Africa, East Africa and Ethiopia identical to *R. pyroides* var. *pyroides* are filed in a number of European herbaria under *R. villosa* and *R. vulgaris*. Flowering recorded from October to January. Map 13.

Four integrating morphs can be discerned in this variety. The typical morph with prominent spines and reticulate venation is found mainly in the drier western part of the country. The puberulent morph (*R. puberula* = *R. baurii*) occurs mainly in the more eastern parts of the Cape and has denser foliage and is usually unarmed. The prominently sericeous morph (*R. vulgaris*) occurs mainly from the central Transvaal northwards. Scattered throughout the central and western Transvaal is a morph intermediate between *R. vulgaris* and the typical morph. Other intermediates abound, suggesting that the whole complex be regarded as one variable taxon.

Vouchers: Typical morph, *Acocks & Hafström H1025* (PRE, S); puberulent unarmed morph, *Dieterlen 1201* (K, NBG, P, PRE); sericeous morph, *Coetzee 1192* (K, PRE); *Schlieben 9385* (PRE); intermediate northern morph, *De Winter & Leismert 5450* (B, K, M, PRE, WIND); *Schlechter 3609* (BM, BOL, GRA, K, SAM, W, WU, Z); intermediate southern morph, subglomerulate, *Moffett 2359* (MO, NBG, PRE, STE).

15b. var. *dinteri* (Engl.) *Moffett*, comb. et stat. nov.

Type: Namibia, Schaaprivier, 5.3.1911, *Dinter 1898* (SAM, lecto.! here designated).

R. dinteri Engl.: 211, t. 103 E-G (1921); Schonl.: 46, t. p. 47 (1930); Merxm. & A. Schreib.: 12 (1968).



EWH

FIGURE II.—*Rhus pyroides* var. *pyroides*: 1, fructing branch, $\times 0,8$; 2, leaf and spinous branch, $\times 0,8$; 3, male inflorescence, $\times 0,8$ (2 & 3, *Zambatis 73*); 4, drupe, $\times 2,5$ (1 & 4, *B.J. Coetsee 1192*). *Rhus pyroides* var. *gracilis*: 5, leaf and fruit, $\times 0,8$ (*Killick & Vahrmeijer 4034*); 6, habit. Artist: E. Ward-Hilhorst.

R. impermeabilis Dinter: 135 (1926); Schonl.: 46 (1930); Merxm. & A. Schreib.: 12 (1968). Type. Namibia, Hohe Warte und Kapps Farm, *Dinter 4359* (1898) (GRA!; SAM!).

A spiny shrub up to 3 m high and 4 m wide, differing only from var. *pyroides* by its smaller, shortly sericeous leaflets with a rounded apex. *Petiole* (3–)7(–12) mm long; terminal leaflets (7–)18(–28) × (4–)10(–17) mm, lateral leaflets (6–)13(–24) × (3–)7(–13) mm. *Drupe* circular to oblate, obloid, 4,2–5,0 mm wide.

Whereas the rounded, mucronate apex is distinct, the occasional acute apex does occur—*Walter 1670* and *2005* (B, WIND)—making it difficult to separate this variety from the typical one. A number of specimens from the northern Cape, e.g. *Mogg 8096b* (PRE) from Armoedsvlakte, Vryburg, are also intermediate between this variety and the typical one. Five leaflets were seen on one leaf of *Pearson 9507* (BOL, K, SAM) from south-west of Windhoek.

Rhus pyroides var. *dinteri* occurs among granites in central Namibia from the Avas Mountains just south of Windhoek to between Nauchas and Areb west of Rehoboth and is often found on the banks of dry watercourses. Flowering recorded in December. Map 13.

Vouchers: *Giess 14838* (K, M, PRE, WIND); *Merxmüller & Giess 886* (BR, M, PRE, WIND); *Seydel 3849* (G, WIND); *H. & E. Walter 1670* (B, BR, WIND).

15c. var. *gracilis* (Engl.) *Burt Davy* in Flowering plants and ferns of the Transvaal 2: 497 (1932); R. & A. Fernandes: 604 (1966); Kokwaro: 32 (1986). Type: Transvaal, Pretoria, *Rehmann 4742* (Z, lecto.! here designated; BM!, BOL!, FHO, K!, isolecto.).

R. villosa L. f. var. *gracilis* Engl.: 425 (1883). *R. pyroides* var. *transvaalensis* Schonl.: 30 (1930).

R. flexuosa Diels: 86 (1907); Schonl.: 30 (1930); Burt Davy: 497 (1932). Type: Transvaal, Magaliesberg, Pretoria, *Engler 2822* (B†).

R. sericophylla Schlecht. ex Engl.: 211 (1921); Schonl.: 29 (1930). Type: Transvaal, Crocodile River, *Schlechter 3982* (BOL., Z!).

Shrub or small tree, often with spreading canopy, differing from var. *pyroides* by its denser, softer and darker foliage, leaflets shortly and thinly sericeous above and below and flexuose inflorescence of small flowers, often subglobose. *Petiole* (5–)15(–40) mm long; terminal leaflets (33–)49(–67) × (10–)17(–32) mm, lateral leaflets (16–)30(–48) × (6–)14(–28) mm. *Drupe* 3,3 × 3,0 to 5,4 × 4,4 mm. Fig. 11.

Ranges from the northern Transvaal through the eastern and southern Transvaal, the eastern Orange Free State, Natal interior and uplands, and Transkei reaching as far south as the Amatola Mountains near Alice in the eastern Cape. It is a prominent shrub or small tree in moister upland situations along streams, talus slopes and verges of scrub forest. Three disjunct collections (Graaff-Reinet, Grahamstown and Hlabisa in Zululand) cannot be separated from this taxon by me, but I suspect they rather belong to other varieties of this species. Flowering recorded in December and January. Map 14.

Vouchers: *Dahlstrand 2628* (GRA, PRE); *Guy 51* (K, NH, NU, PRE); *Killick & Vahrmeijer 4034* (K, PRE); *Moffett 2953* (GRA, MO, NBG, NU, PRE); *Mogg 19136* (PRE).

15d. var. *integrifolia* (Engl.) *Moffett*, comb. nov.

Type: Natal, Inanda, *Rehmann s.n.* (Z, lecto.! here designated).

R. tridentata Sond. var. *integrifolia* Engl.: 426 (1883).

R. tridentata Sond.: 511 (1860) non L. f.; Engl.: 425 (1883); Diels: 580 (1898); nom. illeg. *Toxicodendron tridentatum* (Sond.) Kuntze: 154 (1891). *R. fraseri* Schonl.: 26, t. p. 27 (1930); Burt Davy: 497 (1932); Compton: 331 (1976). Type: Natal, Port Natal, *Gueinzius 390* (K, holo.!, S!, W!, iso.).

R. intermedia Schonl.: 28, t. p. 28 (1930) non Hayata; Burt Davy: 496 (1932); Compton: 331 (1976) nom. illeg. Type: Natal, Hlobane, Ngomi Forest Reserve, *Tusten sub Schonland 5122* (PRE, lecto.! here designated; PRF!, isolecto.).

R. microcarpa Schonl.: 80, t. p. 79 (1930); R. & A. Fernandes: 613 (1966) sphalm. Type: Natal, Ingwangwane Forest, *Houshold sub Schonland 5025* (GRA, lecto.! here designated; K!, PRE!, SAM!, isolecto.).

Three morphs represented by *R. fraseri*, *R. microcarpa* and *R. intermedia* are included in this variety. *R. fraseri* and *R. microcarpa* differ from var. *pyroides* by their elongated, densely leafy branchlets, relatively large leaves, leaflets with prominent pinnate secondaries below and reticulation covered by dense villous hairs, by very large exposed panicles and by smaller fruit. Specimens from Zululand often have blades with a few gross, mucronulate teeth, while the southern Natal specimens of *R. microcarpa* have exceptionally small flowers (less than 1 mm across) and fruit (drupes less than 2,5 mm wide). *Petiole* (6–)19(–56) mm long; terminal leaflets (16–)49(–125) × (7–)19(–48) mm, lateral leaflets (11–)33(–86) × (6–)17(–37) mm. *Drupe* 2,0 × 1,8 to 3,3 × 2,4 mm.



MAP 14. — □ *Rhus pyroides* var. *gracilis*
● *R. pyroides* var. *integrifolia*

This variety differs from the former variety by the leaflets being slightly longer and by the prominent pinnate venation with dense villous hairs. The third morph, *R. intermedia*, has a more obovate leaflet and less dense foliage and is intermediate between this taxon and the typical variety.

The typical morph is widely distributed along the coastal plain and adjacent interior of Natal and Zululand while *R. microcarpa* occurs in Transkei, southern and north-western Natal. *R. intermedia* is found in Swaziland and along the mountains of the eastern Transvaal to the northern Transvaal. The disjunct specimens in the southern Transvaal and near Kentani in Transkei may belong to the other taxa in this species but are included here on the evidence of the herbarium sheets. Flowering recorded in October and January. Map 14.

Rhus pyroides var. *integrifolia* favours moister habitats such as grassveld near the coast, rocky sites upland and along the margins of scrub and high forest. It may reach a height of 6 m.

All the specimens of *R. microcarpa* Schonl. cited in *Flora Zambesiaca* refer to *R. nebulosa* Schonl.

Vouchers: typical, *Gerstner 3015* (K, NH, PRE); *Moffett 3097* (MO, NH, PRE); *Moll & Morris 622* (K, NH, PRE); *Viljoen 126* (PRE); between typical and *R. microcarpa*, *Rudatis 801* (BM, E, G, K, PRE, S, W, WAG); *R. microcarpa*, *Sallender sub Schonland 5043* (GRA, PRE); *R. intermedia*, *Kluge II* (PRE, PRF).

16. *Rhus quartiniana* A. Rich., Tentamen florae Abyssinicae 1: 141 (1847); Engl.: 441 (1883) sub *R. glaucescens* Rich. var. β *schimperii* Oliv.; Van der Veken: 36 (1960); White: 213 (1962); R. & A. Fernandes: 607, t. 129 (1966); Merxm. & A. Schreib.: 13 (1968); Kokwaro: 33, t. 5 (1986). Type: Ethiopia, Tigray, Shire, *Quartin-Dillon & Petit s.n.* (P, holo.!; K, iso.)

Toxicodendron quartinianum (Rich.) Kuntze: 153 (1891).

R. hulensis Engl. forma *acutifoliolata* Engl.: 501 (1898). *R. quartiniana* var. *acutifoliolata* (Engl.) Meikle: 106 (1954). Type: Angola, Huila, *Antunes 229* (COI, holo.!).

R. stolzii Engl.: 212, t. 105 (1921); R. & A. Fernandes: 701 (1965c). Type: Tanzania, Rungwe District, Kyimbila to Bulambia, *Stolz 1738* (B, holo?!; C!, G!, K!, PRE!, S!, UPS!, W!, Z!, iso.).

R. quartiniana var. *zambesiensis* R. & A. Fernandes: 189, t. 50 (1965a). Type: Zambia, near Senanga, 2.8.1952, *Codd 7200* (BM, holo.!; EA, K!, PRE!, SRGH!, iso.).

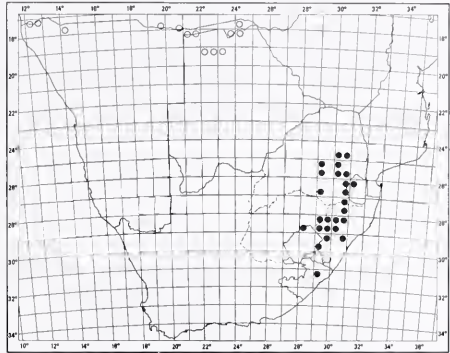
Unarmed or spiny shrub or small tree up to 7 m high. *Bark* rough, somewhat striate, prominently lenticellate, branchlets glabrous to yellowish tomentose-pubescent, occasionally forming short spines. *Leaves* trifoliolate, petiolate; petiole semiterete, usually tomentose, (6–)13(–25) mm long; leaflets generally sessile, submembranous, glutinous to furfuraceous, dark green above, pale yellowish olive below, hypostomatous; lamina elliptic, occasionally ovate, rarely lanceolate, base cuneate, apex obtuse to acute; margin entire, rarely irregularly dentate, slightly revolute and minutely ciliate; venation semicraspedodromous, midrib prominent above and below, often pubescent, other veins fairly prominent above, immersed below; terminal leaflets (16–)46(–78) × (7–)14(–27) mm, lateral leaflets (9–)27(–51) × (4–)12(–20) mm. *Panicles* yellowish tomentose, axillary and terminal, latter prominently exposed, up to 100 mm long. *Flowers* normal. *Drupe* obovate, obloid, glabrous, shiny, light brown, relatively small 2,6 × 2,3 mm, rarely up to 4,0 × 3,5 mm. *Fig.* 12.

Confined in our area to the northern parts of Botswana and Namibia where it occurs on islands and along the banks and adjacent woodland of the Cunene, Okavango, Chobe and Zambezi Rivers. Also in Angola, Central and East Africa and Ethiopia. Flowering recorded from February to April. Map 15.

The discolorous, somewhat sticky leaflets, yellowish indumentum of branchlets and inflorescence, together with the crowded small pale drupes are diagnostic for this species. Fernandes (1965) separated it into two varieties, both of which occur in our area. As I have had difficulty in placing some of the cited specimens, e.g. *Codd 7092* (PRE) and *Story 5816* (K, M, PRE, SRGH) correctly, I have retained it as just one species.

Vouchers: *Dinter 7197* (B, BOL, HBG, K, M, PRE, S, WIND, Z); *Giess 10523* (PRE, WIND); *Killick & Leistner 3331* (K, M, PRE, SRGH, WIND).

17. *Rhus gerrardii* (Harv. ex Engl.) Diels in Engl., *Botanische Jahrbücher* 24: 588 (1898); Schönl.: 247 (1911); Schönl.: 76, t. p. 76 (1930); Burt Davy: 507 (1932); excl. var. *D. montana*. Type: Natal, *Gerrard & McKen 1396* (K, lecto.! vide R. Fernandes: 131 (1967); BM!, TCD!, W!, isolecto.).



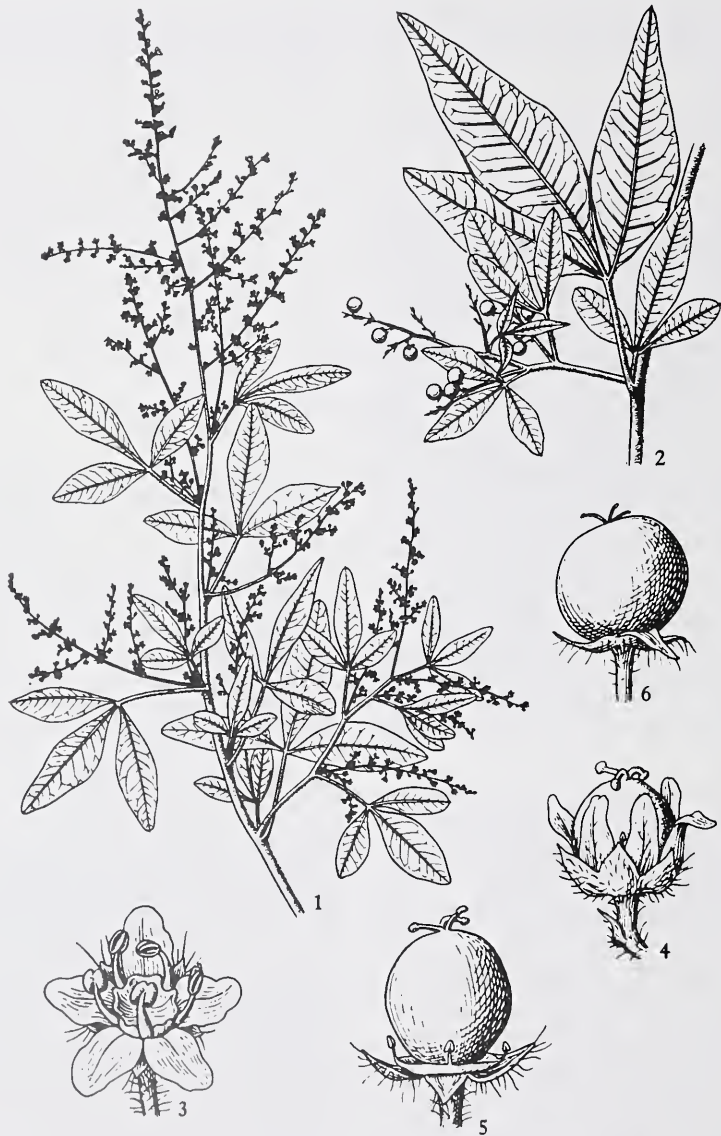
MAP 15.—○ *Rhus quartiniana*
● *R. gerrardii*

R. viminalis Vahl var. *gerrardii* Harv. ex Engl.: 442 (1883). *R. gerrardii* var. *typica* Schönl.: 77 (1930). *R. montana* Diels var. *gerrardii* (Harv. ex Engl.) R. Fernandes: 131 (1967); Compton: 331 (1976).

R. gerrardii var. *latifolia* Schönl.: 77, t. p. 77 (1930); Burt Davy: 507 (1932). *R. montana* Diels var. *latifolia* (Schönl.) R. Fernandes: 131 (1967). Type: Transvaal, Graskop, *Evans sub. Schonland 5096a* (GRA, lecto.! vide R. Fernandes: 131 (1967); PRE!, isolecto.).

R. gerrardii var. *basutorum* Schönl.: 78 (1930). *R. montana* Diels var. *basutorum* (Schönl.) R. Fernandes: 131 (1967). Type: Lesotho, Leribe District, *Dieterlen 691* (SAM, holo.!; GRA!, NH!, P!, PRE!, Z!, iso.).

Multistemmed deciduous shrub, generally ± 2 m high. *Bark* granular, rufous, prominently lenticellate; branchlets tomentose to glabrous, somewhat pendulous in old specimens. *Leaves* trifoliolate, petiolate; petiole tomentose to glabrous, semiterete, shallowly canaliculate, (8–) 24(–42) mm long; leaflets sessile, subcoriaceous, concolorous, olive-green above, slightly paler below, glabrous to slightly hirsute, hypostomatous; lamina oblanceolate to narrowly elliptic, rarely ovate to obovate, base narrowly cuneate, apex acuminate, mucronate; margin irregularly, grossly pauciserrate towards apex to entire; venation brochidodromous to semicraspedodromous, all veins dull yellow and prominent above, midrib and secondaries prominent below; terminal leaflets (25–)73(–121) × (4–)22(–26) mm, lateral leaflets (19–)58(–110) × (4–)12(–28) mm. *Panicles* sparingly branched, axillary and terminal, up to 90 mm long, generally within



J.C.W.

FIGURE 12.—*Rhus quartiniana*: 1, male flowering branch, $\times 0.67$; 2, fruiting branchlet, $\times 0.67$ (2, Flanagan 32II); 3, male flower $\times 14$; 4 & 5, developing fruit, $\times 14$; 6, drupe, $\times 6$ (1 & 3–6, Gilges 354). Reproduced with permission from *Flora Zambesiaca* (Fernandes & Fernandes 1966). Drawn by Joanna Webb.

foliage, often drying blackish. *Flowers* often subglomerulate, calyx lobes hairy, otherwise normal. *Drupes* obovate, obloid, glabrous, shiny, light to dark brown, relatively small, $2,5 \times 2,0$ to $3,3 \times 2,7$ mm. Fig. 13.

Ranges from the Pilgrim's Rest area of the Transvaal through the highveld of the south-eastern Transvaal, the Mbabane and Manzini Districts of Swaziland, the higher parts of northern and central Natal, around Harrismith in the Orange Free State and reaching as far south as the Underberg area of Natal with isolated records from Melongeni in Transkei and Leribe in Lesotho. Flowering recorded in November, January and April. Map 15.

Rhus gerrardii is recognized by its olive-green, oblanceolate leaflets with gross teeth towards the apex, its multistemmed form with prominent lenticellate branches, the very small drupes and its rheophytic habit. It is found only on the edge of perennial streams where it may form extended thickets.

Vouchers: *Codd 7644* (BR, K, LD, NH, P, PRE, UPS); *Dove 122* (NBG); *McClellan 676* (K, NH, PRE); *Moffett 2027* (MO, NBG, PRE).

18. *Rhus rehmanniana* Engl. in A. & C. DC., *Monographiae phanerogamarum* 4: 422 (1883); Diels: 578, 613 (1898); Burt Davy: 496 (1932). Type: Transvaal, Houtbosch, *Rehmann 5560* (Z, lecto.! here designated; GRA!, K!, SAM!, isolecto.).

Toxicodendron rehmannianum (Engl.) Kuntze: 154 (1891). *R. macowanii* Schönl. forma *rehmanniana* (Engl.) Schönl.: 26 (1930).

Two varieties are distinguished:

18a. var. *rehmanniana*.

R. pyroides Burch. var. *subdentata* E. Mey. ex Engl.: 431 (1883). Type: Natal, *Gueinzinus 448* (W, holo.!: P!, S!, iso.).

R. rehmanniana var. *longecuneata* R. & A. Fernandes: 190 (1965a). R. & A. Fernandes: 609 (1966). Type: Mozambique, Maputo, *Hornby 2597* (K, holo.!: LMJ, PRE!, SRGH!, iso.).

Single-stemmed, much-branched tree up to 5 m high, rarely a shrub. *Bark* rough and blocky; branchlets tomentose. *Leaves* trifoliolate, petiole; petiole semiterete, shallowly canaliculate above, tomentose, (7–)18(–30) mm long; leaflets sessile, subcoriaceous, concolorous, olive-green above, slightly paler below, rugose, glabrous to hirsute/velutinous above and villous/tomentose below, hypostomatous; lamina widely obovate, base cuneate, apex truncate to obtuse, irregularly crenate, mucronulate, margin entire to crenate

towards apex; venation brochidodromous to semi-craspedodromous, all veins dull yellow, prominent above, midrib and secondaries prominent below; terminal leaflets (17–)41(–62) \times (8–)26(–47) mm, lateral leaflets (13–)27(–50) \times (7–)18(–34) mm. *Panicles* much branched, lax, axillary and terminal, latter up to 110 mm long, exposed flowers often subglomerulate. *Flowers* normal, calyx lobes hairy. *Drupe* circular, globoid, glabrous, shiny, yellowish, fleshy, mature epicarpis seldom seen, $3,6 \times 3,5$ to $4,0 \times 3,8$ mm. Fig. 14.

Distributed from the Soutpansberg in the northern Transvaal through the eastern and south-eastern Transvaal, Swaziland, virtually all of Natal with isolated records in Transkei and the eastern Cape Province. It is a conspicuous tree in the *Acacia* thornveld of Natal. Also in Mozambique. Flowering recorded in February. Map 16.

The rough bark and rugose, widely obovate, truncate leaflets distinguish this taxon from the allied *R. pyroides* var. *gracilis* (no. 15c) and *R. pyroides* var. *integrifolia* (no. 15d). Both glabrous and hairy morphs occur.

Vouchers: *Culverwell 568* (PRE); *Moffett 1714* (K, MO, PRE); *Moffett 2162* (K, MO, PRE); *Nel 130* (B, NBG, PRE); *Schlechter 6892* (BOL, GRA, Z).

18b. var. *glabrata* (Sond.) *Moffett*, comb. nov.

Type: Eastern Cape Province, Swartkops River, 18.12.1829, *Drège 6800* (P, lecto.! here designated; L!, W!, isolecto.).

R. pyroides Burch. var. *glabrata* Sond.: 511 (1860); Engl.: 431 (1883).

R. pubescens Thunb. var. *caledonica* Eckl. & Zeyh.: 145 (1836) nom. nud. *Ecklon & Zeyher 1100β* (BOL!, C!, GRA!, K!, L!, M!, NH!, P!, S!, SAM!, UPST!, W!).

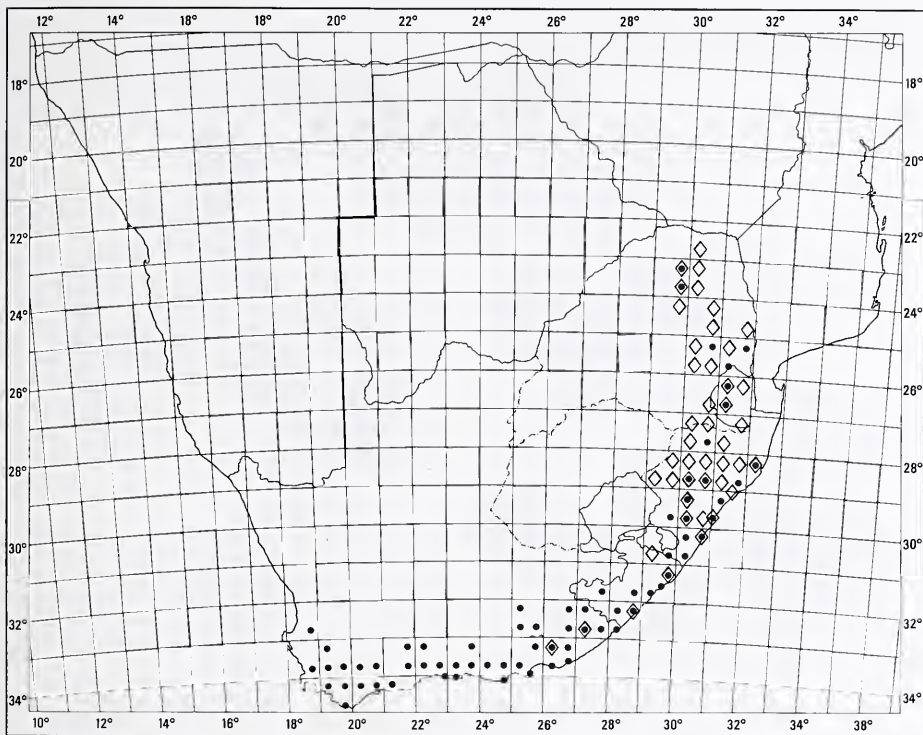
R. macowanii Schönl.: 24, t. p. 25 (1930); Burt Davy: 496 (1932); R. & A. Fernandes: 611 (1966); Compton: 331 (1976). *R. pubescens* Thunb. var. *uitenhagensis* Eckl. & Zeyh.: 145 (1836) nom. nud. Type: Eastern Cape Province, Zwartkops River, *Ecklon & Zeyher 1100α* (GRA, lecto.! here designated; NH!, S!, SAM!, isolecto.).

Differs from var. *rehmanniana* by its shrubby spreading habit, often with pendulous branches, granular bark and by its non-truncate leaflets. *Petiole* (5–)20(–51) mm long; terminal leaflets (17–)39(–65) \times (8–)20(–32) mm, lateral leaflets (14–)25(–44) \times (5–)13(–23) mm. *Drupe* $3,0 \times 2,6$ to $4,2 \times 3,6$ mm. Some inflorescences are andromonoecious, the bisexual flowers producing small fruit.



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FIGURE 13. — *Rhus gerrardii*: 1, male branch and inflorescence, $\times 0.8$ (Moffett 3064); 2, fruiting branch, $\times 0.8$; 3, leaf, $\times 0.8$ (Moffett 3063); 4, drupes, $\times 2.5$ (2 & 4, McClean 676); 5, habit and habitat. Artist: E. Ward-Hilhorst.



MAP 16. —◇ *Rhus rehmanniana* var. *rehmanniana*
● *R. rehmanniana* var. *glabrata*

Widespread in the moister parts of the south-western, southern and eastern Cape Province, becoming less frequent in Transkei, Natal, Swaziland, eastern and northern Transvaal. Flowering recorded in January and April. Map 16.

The leaf shape of this taxon is often very variable. Schonland (1930) stated 'in *R. macowani* I picked from one bush leaflets which were ovate-acute, ovate-obtuse, obovate-obtuse, obovate-emarginate. They were mostly quite entire, but there were some with one crenation near the apex, others had 2, some 3, a few had more. Most of the leaves were 3-foliolate, but some were 5-foliolate.'

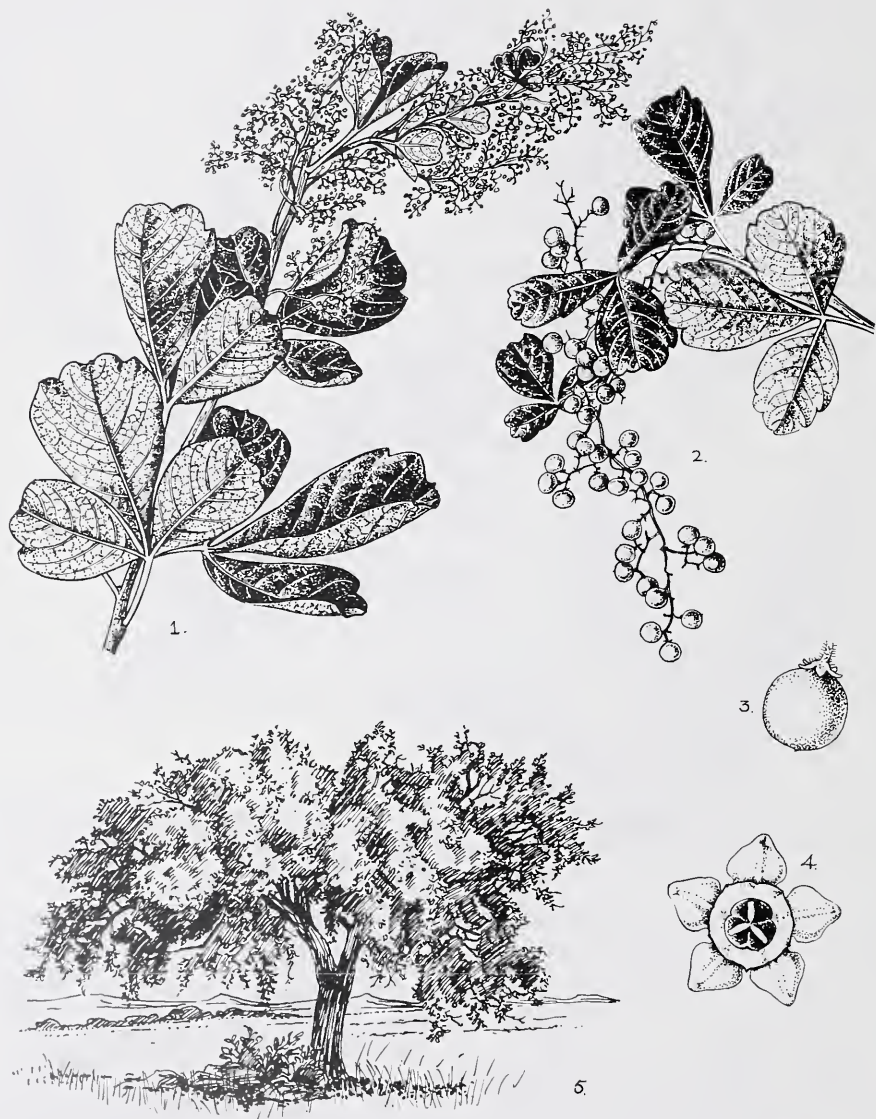
Intermediates between these two varieties do occur, especially from the eastern Cape northwards. However, because they are reasonably distinct in their respective southern and northern areas of concentration, I have maintained them as two varieties. *R. rehmanniana* var. *glabrata* may be confused with *R. laevigata* var. *villosa* (no. 11b). The latter taxon, however, does not have rugose leaflets and occurs on sands near the coast, while the former occurs on clay-rich soils derived from shales.

Vouchers: *Moffett 1950* (K, MO, PRE); *Moffett 2350* (GRA, PRE, STE); *Moffett 2668* (K, PRE, STE); *Rycroft 3196* (NBG, PRE, STE); *Van Jaarsveld 3229* (NBG, PRE).

19. *Rhus fastigiata* Eckl. & Zeyh., Enumeratio plantarum africanae australis 2: 146 (1836); Walp.: 552 (1842). Type: Eastern Cape Province, Albany and Uitenhage, *Ecklon & Zeyher 1107* (S, lecto.! here designated; C!, E, K!, L!, M!, P!, PRE!, SAM!, TCD!, TUB!, W!, isolecto.).

R. puberula Eckl. & Zeyh. var. *fastigiata* (Eckl. & Zeyh.) Sond.: 512 (1860); Engl.: 428 (1883). *R. fastigiata* Eckl. & Zeyh. in *Schndl.*: 45, t. p. 46 (1930); Bond & Goldblatt: 138 (1984).

R. humilis Eckl. & Zeyh.: 147 (1836); Walp.: 552 (1842). Type: Eastern Cape Province, Addo, *Ecklon & Zeyher 1108* (GRA, lecto.! here designated; SAM!, isolecto.).



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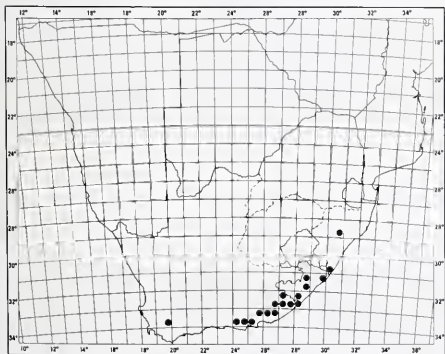
FIGURE 14. — *Rhus rehmanniana* var. *rehmanniana*: 1, branch and female inflorescence, $\times 0,9$; 2, fruiting branch, $\times 0,9$; 3, drupe, $\times 4,3$ (2 & 3, *J.P. Nel 130*); 4, female flower, $\times 13$ (1 & 4, *Culverwell 568*); 5, habit. Artist: E. Ward-Hilhorst.

Dense, fastigiate shrub up to 2 m high; branchlets grey-brown, glabrous to thinly pubescent. *Leaves* trifoliolate, petiolate; petiole short, semiterete, sometimes slightly winged, (2–)5(–10) mm long; leaflets sessile, subcoriaceous, concolorous, dark green above, slightly paler below, glabrous or occasionally thinly pubescent, hypostomatous; lamina oblanceolate to narrowly elliptic or rarely obtusulate; base cuneate, apex acute, mucronulate or obtuse, mucronate, mucro slightly plicate; margin entire, revolute; venation dull yellow, brochidodromous, only midrib and secondaries prominent; terminal leaflets (6–)22 (–40) × (2–)8(–12) mm, lateral leaflets (7–)18 (–30) × (2–)6(–10) mm. *Panicles* glabrous to tomentose, up to 30 mm long, axillary and terminal, latter slightly exposed. *Flowers* generally normal, rarely bisexual. *Drupe* obovate, obloid, glabrous, shiny ± 3,0 × 2,5 mm.

Occurs from near Port Shepstone in Natal along the coast and interior of Transkei and the eastern Cape as far south as the Humansdorp District. Two disjunct records of material inseparable at herbarium sheet level, extend the range by ± 400 km to the west near Robertson and ± 250 km to the north near Nkandla. Flowering recorded in January. Map 17.

The fastigiate habit, together with the small, revolute leaflets with yellow brochidodromous nervation make this species easy to recognize. The morph with an obtuse apex (*R. humilis*) is less common.

Despite its fastigiate habit, Ecklon wrote *R. fastigata* on the type label, used it in the description and published it as such. There is a slight difference in meaning between the two words and according to Stearn (1983) they are not to be confused.



MAP 17.—*Rhus fastigata*

Vouchers: *Long 95* (GRA, K); *MacOwan 766* (BM, GRA, K, NH); *Moffett 2417* (MO, NBG, PRE); *Schlechter 6164* (GRA, Z); *Storv 2235* (BR, GRA, PRE).

20. *Rhus divaricata* Eckl. & Zeyh., Enumeratio plantarum africae australis 1: 146 (1836); Walp.: 552 (1842); Sond.: 508 (1860); Engl.: 429 (1883); Diels: 582 (1898); Engl.: 211 (1921); Schönl.: 49, t. p. 49 (1930); Burtt Davy: 503 (1932). Type: North Eastern Cape, Tambukiland, Klipplaatrivier, *Ecklon & Zeyher 1106* (S, lecto.! here designated; C!, SAM!, W!, isolecto.).

Toxicodendron divaricatum (Eckl. & Zeyh.) Kuntze: 154 (1891).

R. divaricata var. *fulvescens* Engl.: 429 (1883). *R. fulvescens* (Engl.) Diels: 582 (1898). *R. dentata* Thunb. var. *fulvescens* (Engl.) Burtt Davy: 500 (1932). Type: Transvaal, Trigaardsfontein, *Rehmann 6705* (Z, lecto.! here designated; K!, isolecto.).

Multistemmed, stoloniferous, deciduous shrub up to 3 m high; branchlets grey to chestnut brown, glabrous to puberulous. *Leaves* trifoliolate, petiolate; petiole semiterete, canaliculate above, (8–)18(–51) mm long; leaflets sessile, subcoriaceous, discolorous, dark olive-green above, greyish green to rufescent below, glabrous to puberulent above, glandular below, hypostomatous; lamina obovate to obtusulate, base cuneate, apex acute to obtuse, mucronulate-plicate; margin entire, occasionally paucidentate towards apex, slightly revolute; venation semicraspedodromous, all veins prominent above, tertiaries reticulate, only midrib and secondaries prominent below; terminal leaflets (10–)28(–51) × (5–)13(–26) mm, lateral leaflets (7–)20(–38) × (3–)10(–20) mm. *Panicles* up to 30 mm long, sparsely flowered, axillary and terminal, latter slightly exposed. *Flowers* normal, calyx lobes pubescent. *Drupe* circular, globoid, glabrous, shiny, red, drying dark brown, 4,3 × 4,0 to 5,5 × 5,0 mm. Fig. 15.

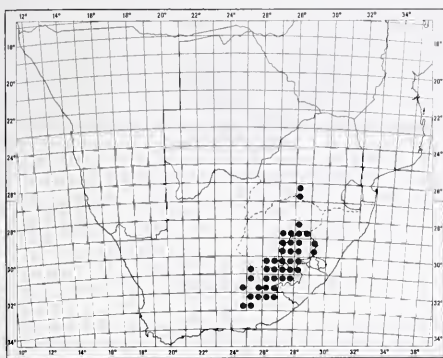
Ranges from near Bethlehem in the eastern Orange Free State, through Lesotho, the foothills of the southern Natal Drakensberg, the north-eastern Cape and reaching the mountains north of Pearston and Graaff-Reinet. There is also a disjunct population in the Suikerbosrand hills south of Johannesburg. Flowering recorded in January. Map 18.

Recognized by its rufescent leaflets, *R. divaricata* reaches the highest altitude of any of our *Rhus* species, having been collected at 2 750 m in Lesotho. Its absence from the north-eastern Orange Free State is puzzling.



FIGURE 15.—*Rhus divaricata*: 1, fruiting branch, $\times 0,8$; 2, leaves and male inflorescence, $\times 0,8$; 3, drupe, $\times 2,5$ (1 & 3, *Moffett 2313*); 4, male flower, $\times 8$ (2 & 4, *Dieterlen 174*); 5, habit. Artist: E. Ward-Hilhorst.

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MAP 18.—*Rhus divaricata*

Vouchers: *Dyer 1911* (K, PRE); *Marais 1087* (K, M, PRE); *Moffett 2240* (J, MO, NBG, PRE); *Moffett 2313* (BLFU, PRE); *Moffett 2871* (GRA, PRE).

21. *Rhus ciliata* Licht. ex Schult. in L., *Systema vegetabilium*, edition nova 6: 661 (1820); DC.: 71 (1825); G. Don: 73 (1832); Sond.: 519 (1860); Engl.: 418 (1883); Diels: 576 (1898); Engl.: 205 (1921); Schonl.: 82, t. p. 82 (1930) p.p. excl. syn. *R. tridactyla* Burch.; Burt Davy: 506 (1932); Merxm. & A. Schreib.: 12 (1968). Type: Northern Cape, Grootte Rivier Poort, *Lichtenstein in herb. Willd. 6016* (B (WILLD.), holo!).

Toxicodendron ciliatum (Licht.) Kuntze: 153 (1891).

R. concinnum Burch.: 360, t. opp. p. 360 (1822). Type: Northern Cape, Klaarwater, *Burchell 1946* (K, holo!; L!, M!, P!, S!, iso.).

R. ciliata forma *fastigiata* Schonl.: 82 (1930). Type: Namibia, Ankas, *Dinter 833* (SAM, lecto.! here designated).

R. ciliata var. *lepidota* Burt Davy: 507 (1932). Type: Transvaal, Wolmaransstad, *Rogers 18487* (GRA, lecto.! here designated).

Multistemmed, aromatic, wiry shrub up to 2 m high, usually lower, forming dense colonies. Branches grey-brown, glabrous, ending in spines. Leaves trifoliolate, petiolate, occasionally fascicled; petiole semiterete, canaliculate above, canal extending to midrib, (9–)13(–18) mm long, glabrous to sparingly pubescent; leaflets sessile, subcoriaceous, glabrous to glutinose or sparingly pubescent, concolorous, dark olive above, slight-

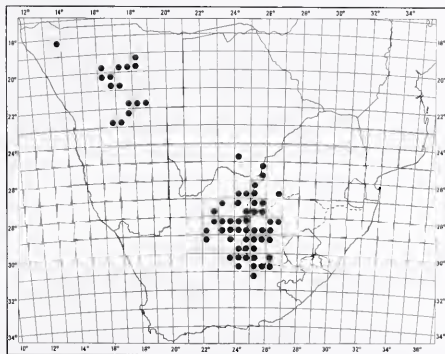
ly paler below, largely hypostomatous; lamina oblanceolate to narrowly elliptic, apex obtuse to acute, rarely rounded, mucronate; margin entire, ciliate, rarely aciliate; venation kladodromous, only midrib prominent above, all veins impressed below, angle of secondaries 50–70°; terminal leaflets (17–)26(–33) × (2–)4(–5) mm, lateral leaflets (10–)18(–25) × (2–)4(–5) mm. Panicles lax, up to 50 mm long, glabrous to sparingly pubescent, axillary and terminal, both prominent. Flowers normal. Drupe oblate, obloid, glabrous, shiny, reddish, drying brown, 4,7 × 3,8 to 5,6 × 4,8 mm. Fig. 16.

Widespread in two widely separated areas. In Namibia it is found roughly between Grootfontein, Otjiwarongo and Windhoek, with a single record from near Sesfontein in the Kaokoveld. In the Republic it occurs in the far western Transvaal, the northern Cape, the western half of the Orange Free State and reaches as far south as north of Middelburg in the central Karoo. It also occurs in the southernmost part of Botswana. Flowering recorded in January and February. Map 19.

The 'zuurkaree' with its colonies of wiry shrubs is easily recognized in the northern Karoo and Orange Free State. In the dolomitic Ghaap plateau and environs of the northern Cape it may be confused with the sympatric *R. tridactyla* Burch. For the differences between these two species, see *R. tridactyla* (no. 28).

Vouchers: *Bayliss 2034* (B, NBG, Z); *De Winter 2401* (K, M, PRE, WIND); *Liebenberg 4673* (B, PRE, WIND); *Moffett 1668* (KMG, PRE); *Moffett 3492* (MO, PRE).

22. *Rhus magalismontana* Sond. in Harv. & Sond., *Flora capensis* 1: 510 (1860); Schonl.: 90, t. p. 91 (1930); Burt Davy: 508 (1932); O.B.

MAP 19.—*Rhus ciliata*



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FIGURE 16.—*Rhus ciliata*: 1, fruiting branch, $\times 0.8$; 2, branch with male inflorescence, $\times 0.8$; 3, drupes, $\times 1.6$ (1 & 3, *Moffett 1668*); 4, male flower, $\times 8$ (2 & 4, *Moffett 3492*). *Rhus tridactyla*: 5, fruiting branch, $\times 0.8$; 6, branch with male inflorescence, $\times 0.8$; 7, drupes, $\times 1.2$ (5 & 7, *Moffett 167D*); 8, male flower, $\times 8$ (6 & 8, *Moffett 1670*). Artist: E. Ward-Hilhorst.

Mill.: 47 (1952); R. & A. Fernandes: 609 (1966). Type: Transvaal, Crocodile River near Magaliesberg, Dec., *Zeyher 341* (S, holo.!; BM!, iso.).

This species is made up of many integrating morphs. While their leaf anatomy is distinct and similar, I have divided them into three subspecies on the basis of leaf size and shape, habit and geographic separation.

22a. subsp. *magalismontana*.

R. burkeana Sond.: 514 (1860); Engl.: 417 (1883); Diels: 576 (1898); Engl.: 204 (1921); Burt Davy: 509 (1932). *Toxicodendron burkeanum* (Sond.) Kuntze: 153 (1891). Type: Transvaal, Aapies River, Oct., *Zeyher 335* (S, lecto.! here designated; BM!, E, K!, SAM!, isolecto.).

R. coriacea Engl.: 418 (1883); Diels: 576 (1898); Schonl.: 240 (1911); Engl.: 205, t. 101 F–H (1921). *Toxicodendron coriaceum* (Engl.) Kuntze: 153 (1891). Type: Transvaal, near Pretoria and Klippan, *Rehmann 5329* (Z, lecto.! here designated; K!, isolecto.).

R. oblanceolata Schinz: 638 (1908); Burt Davy: 509 (1932); R. & A. Fernandes: 603 (1966). Type: Transvaal (Natal, vide Schinz), Olifantsrivier, 1660 m, 20.11.1893, *Schlechter 3773* (Z, holo.!; BM!, BOL!, BR!, COL!, G!, GRA!, K!, NH!, P!, SI!, W!, WU!, iso.).

R. cinerea R. & A. Fernandes: 251, t. 6 (1965b). Type: Transvaal, Waterberg, 10 km north of Warmbaths, 1140 m, 6.1.1953, *Codd 7643* (PRE, holo.!; BM!, COL!, K!, LISC!, SRGH!, iso.).

Dwarf, xerophytic shrublet, rarely exceeding height of 0,6 m; branches dark grey, glabrous to puberulous, sometimes dark furfuraceous. Leaves trifoliate, petiolate; petiole semiterete, margins slightly thickened, (6–)13(–34) mm long; leaflets sessile, coriaceous, grey to greyish green to ochraceous, young growth golden or reddish pink above, grey below, glabrous to lepidote-furfuraceous, amphistomatous; lamina oblanceolate, narrowly elliptic, ovate or obovate, base cuneate, apex acute, occasionally rounded, rarely acuminate, mucronate, margin entire, slightly thickened; venation brochidodromous to semicraspedodromous, midrib and secondaries prominent above and below; terminal leaflets (11–)49(–98) × (4–)12(–20) mm, lateral leaflets (6–)40(–83) × (2–)10(–19) mm. Panicles lax, up to 70 mm long, occasionally subglomerulate to glomerulate, axillary and terminal, latter exposed. Flowers with relatively long calyx lobes,

$\frac{1}{2}$ to $\frac{3}{4}$ length of 2 mm corolla lobes, otherwise normal. *Drupe* obovate, ellipsoid, glabrous, shiny, light to dark brown 3,7 × 2,7 to 5,1 × 3,4 mm.

Widespread in rocky places in the Transvaal within an area roughly circumscribed by Pietersburg, Nylstroom, Middelburg, Heidelberg, Klerksdorp, Zeerust and Thabazimbi. It also just ranges into the south-eastern corner of Botswana and has also been collected in the northern Cape near Stella at Wimbledon, just north of Kimberley and at Vrededorf in the Orange Free State. Flowering recorded from October to March. Map 20.

About seventeen morphs, differing slightly in colour, shape and vesture of the leaflets are included in this subspecies. All have the characteristic amphistomatous leaflets with sheet-like and stellate trichomes, deeply sunken stomata and ellipsoidal drupes. Pink and golden leaved morphs occur together and appear otherwise to be identical.

Vouchers: *Hanekom 1885* (K, PRE, SRGH, WAG); *Hansen 3283* (BM, C, GAB, K, PRE, SRGH); *Moffett 2254* (K, MO, NBG, PRE); *Mogg 2072* (J, K, PRE); *Mogg 2242* (J, PRE); *Sutton 808* (PRE); *Theron 839* (PRE, PUC).

22b. subsp. *coddii* (R. & A. Fernandes) *Moffett*, comb. et stat. nov.

Type: Venda, Sambandou, 570 m, 20.2.1952, *Codd 6902* (PRE, holo.!; BOL!, K!, LISC!, iso.).

R. coddii R. & A. Fernandes: 251, t. 7 (1965b); R. & A. Fernandes: 15 (1976).

R. schliebenii R. & A. Fernandes: 255, t. II (1965b); R. & A. Fernandes: 15 (1976). Type: Transvaal, Zoutpansberg, 67 km west of Louis Trichardt, 1500 m, 3.11.1955, *Schlieben 7532* (PRE, holo.!; B!, BR!, iso.).

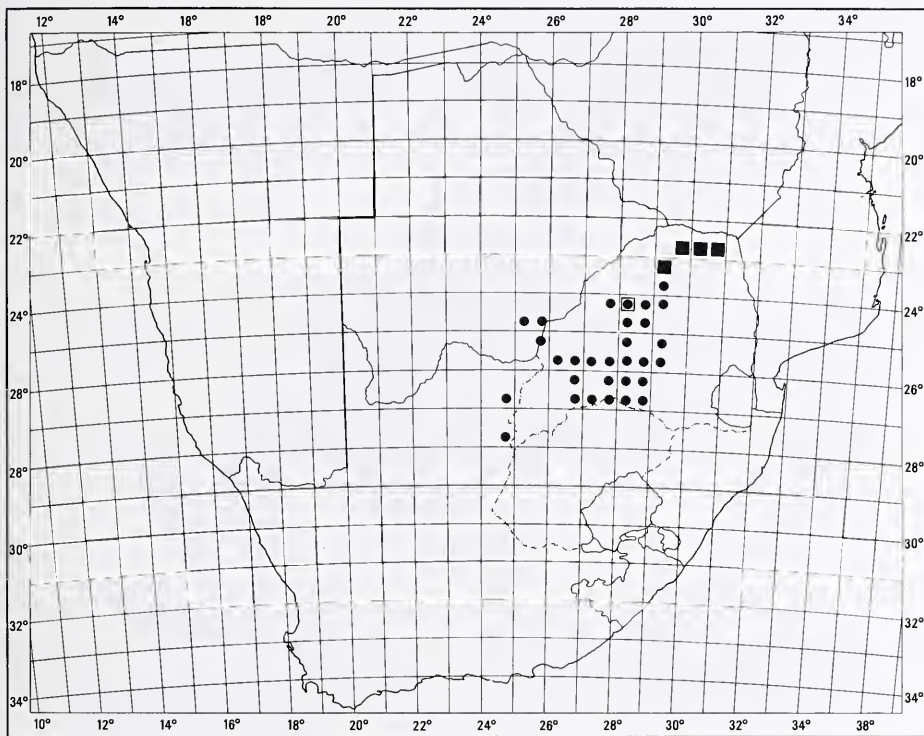
Differs from subsp. *magalismontana* by its much larger leaves and taller open habit, some plants reaching 2,1 m; terminal leaflets often undulate, base attenuate, lateral leaflets conduplicate. *Petiole* (13–)37(–70) mm long; terminal leaflets (29–)63(–117) × (9–)21(–39) mm, lateral leaflets (18–)51(–95) × (9–)20(–38) mm. *Drupe* 4,2 × 2,9 to 5,1 × 3,4 mm. Fig. 17.

Occurs in the Soutpansberg of the northern Transvaal and its eastern outlier, from the Lejuma plateau west of Louis Trichardt to near Sambandou in Venda. Flowering recorded from February to April. Map 20.

Pink and golden juvenile foliage occurs sympatrically and galls similar in size and shape to the drupes are often found on branchlets and midribs. *R. schliebenii* appears to be none other than younger material of *R. coddii* and not an altitudinal



FIGURE 17.—*Rhus magalismontana* subsp. *coddii*: 1, fruiting branch, $\times 0.8$; 2, leaf with galls and male inflorescence, $\times 0.8$; 3, drupes, $\times 4$ (1 & 3, Moffett 1952); 4, male flower, $\times 8$ (2 & 4, Moffett 1956). Artist: E. Ward-Hilhorst.



MAP 20.—● *Rhus magalismontana* subsp. *magalismontana*
 ■ *R. magalismontana* subsp. *coddii*
 □ *R. magalismontana* subsp. *trifoliolata*

form as suggested by R. & A. Fernandes (1976). In this and in other suffrutescens species, I have observed that the first fertile shoots that develop after a fire are very different to older much branched material that has not been burnt for a number of years.

Vouchers: *Moffett 1941* (MO, NBG, PRE); *Moffett 1942* (PRE); *Moffett 1952* (K, MO, PRE); *Schlieben 10651* (K, LISC, M, PRE, S, SRGH).

22c. subsp. *trifoliolata* (*Bak. f.*) *Moffett*, comb. et stat. nov.

Type: Zimbabwe, Bulawayo, Dec., *Rand 66* (BM, holo.!, GRA!, iso.).

R. trifoliolata *Bak. f.*: 429 (1899); R. & A. Fernandes: 601 (1966).

R. rhodesiensis R. & A. Fernandes forma *rhodesiensis*: 16, t. 2 & 3 (1976). Type: Zimbabwe, 9 km SSE of Gwelo, 1535 m, 5.2.68, *Biegel 2529* (SRGH, holo.!, COI!, iso.).

R. rhodesiensis R. & A. Fernandes forma *glabra* R. & A. Fernandes: 17, t. 4 (1976). Type: Zimbabwe, Gwelo District, Feb. 1960, *Davies 2736* (SRGH, holo.!).

R. rhodesiensis × *trifoliolata* R. & A. Fernandes: 17, t. 7 (1976). Type: Zimbabwe, Gwelo District, Feb. 1968, *Biegel 2562* (SRGH, holo.).

Differs from the other subspecies by the long narrow linear to oblanceolate leaflets. *Petiole* (8–)15(–18) mm long; terminal leaflets (24–)58(–85) × (3–)7(–9) mm, lateral leaflets (22–)45(–55) × (3–)6(–7) mm.

Occurs in the Vaalwater area of the Transvaal Waterberg, north-west of Nylstroom. Also in Zimbabwe near Bulawayo and Gweru (Gwelo). Map 20.

R. exelliana Meikle from Angola and *R. fanshawei* R. & A. Fernandes from Zambia could possibly also be accommodated in this aggregate.



FIGURE 18.—*Rhus engelri*: 1, branch with male inflorescences, $\times 0.8$; 2, male flower, $\times 8$; 3, fruiting branchlet, $\times 0.8$; 4, drupes, $\times 1.6$; 5, adaxial surface of leaf, $\times 1.6$ (3–5, *Moffett 2267*); 6, abaxial surface of leaf, $\times 1.6$ (1, 2 & 6, *J.P. Nel 224*); 7, habit. Artist: E. Ward-Hilhorst.

Vouchers: *Acocks & Naude 40* (PRE); *Burger 225* (PRE).

23. *Rhus engleri* Britten in *Journal of Botany* 38: 316 (1900); *Schönl.*: 244 (1911); *Schönl.*: 66, t. p. 66 (1930); *Burt Davy*: 504 (1932). Type: Transvaal, Klippan, *Rehmann 5325* (Z, lecto.! here designated).

Toxicodendron incanum (Engl.) Kuntze: 154 (1891). *R. incana* Engl.: 428 (1883); *Diels*: 581, 630 (1898); non Mill.

Spiny, much-branched shrub, usually 2 m high, occasionally up to 3 m. *Bark* smooth to granular, greyish white; young branches pubescent tomentose. *Leaves* trifoliolate, petiolate; petioles semiterete, sometimes slightly winged, (4–)8(–14) mm long; leaflets sessile, submembranous, discolorous, dull green above, incanous below, hypostomatous; lamina widely oblanceolate to obovate, margin entire, slightly revolute, occasionally pauciserrate towards apex, base narrow to cuneate, apex obtuse, rounded or retuse; venation kladodromous-brochidodromous, midrib and sometimes secondaries dull yellow, prominent above, impressed below; terminal leaflets (13–)23(–36) × (4–)7(–11) mm, lateral leaflets (8–)15(–22) × (4–)5(–9) mm. *Panicles* lax, up to 80 mm long, puberulous, axillary and terminal, both exposed. *Flowers* normal, styles separate, bent, persistent. *Drupe* rhombic, discoid, glabrous, shiny, chestnut brown, 4,5 × 1,4 to 5,2 × 1,8 mm. Fig. 18.

Occurs in the central Transvaal in an area bounded roughly by Potgietersrus, Rust de Winter, Groblersdal, Steelpoort and Chniespoort. Flowering recorded in March and April. Map 21.

Rhus engleri is a distinct species, unique in being the only discolorous (white) one to have a rhombic, discoid fruit. It is usually found only in calcareous substrates, such as the magnesite of the Springbok Flats, but also grows on the lower slopes of chromite hills in Sekhukhuniland.

Vouchers: *Codd 2716* (K, PRE); *Galpin M64* (GRA, K, PRE, PRF, SAM); *Moffett 2267* (K, MO, NBG, PRE); *Nel 224* (K, NBG, PRE).

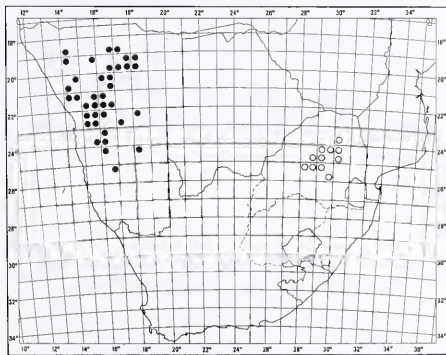
24. *Rhus marlothii* Engl. in *Botanische Jahrbücher* 10: 37 (1888); *Diels*: 581, 627 (1898); *Schönl.*: 241 (1911); *Engl.*: 208, t. 102 (1921); *Schönl.*: 71, t. p. 71 (1930) p.p. excl. specim. quoad ex Transvaal; *Burt Davy*: 505 (1932), sphalm; *Merxm. & A. Schreib.*: 12 (1968). Type:

Namibia, Otjimbingue, 870 m, May 1886, *Marloth 1394* (K, lecto.! here designated; BOL!, GRA!, NBG!, SAM!, Z!, isolecto.).

R. marlothii var. *robustior* Engl.: 208, t. 102 D–F (1921). Type: Namibia, Tsumeb, *Dinter 171* (SAM, lecto. vide *Schönl.*: 71 (1930) per *R. tsemubensis* Dinter ms!).

R. marlothii var. *subintegra* Engl.: 208, t. 102 G–J (1921). *R. upingtoniae* Dinter: 135 (1926). Type: Namibia, Grootfontein, *Dinter 691* (SAM, lecto.! here designated; GRA!, NH!, isolecto.).

Unarmed or spinescent, much-branched shrub up to 2,2 m high. *Bark* smooth, grey, prominently lenticellate; branches whitish, branchlets puberulous. *Leaves* trifoliolate, petiolate; petiole semiterete, shallowly canaliculate, (6–)12(–21) mm long; leaflets sessile, membranous to coriaceous, concolorous, glaucous to pale olive-green, amphistomatous, trichomes few, simple; lamina narrowly elliptic to obovate, base cuneate, apex obtuse to rounded, rarely mucronulate, margin entire to weakly pauciserrate towards apex, slightly thickened; venation kladodromous-brochidodromous, midrib prominent above, midrib and secondaries slightly prominent below, tertiaries inconspicuous; terminal leaflets (17–)34(–60) × (4–)13(–26) mm, lateral leaflets (10–)23(–40) × (4–)10(–22) mm. *Panicles* lax, axillary and terminal, latter up to 120 mm long, exposed. *Flowers* normal, styles persistent. *Drupe* rhombic, discoid, glabrous, shiny, 4,8 × 1,6 to 6,3 × 2,0 mm.



MAP 21.—○ *Rhus engleri*
● *R. marlothii*

Widespread in Namibia, where it occurs from the Kaokoveld in the north to Grootfontein in the east and then ranges through the central part of the country and the inner Namib reaching as far south as near Helmeringhausen. Flowering recorded in January and March. Map 21.

Rhus marlothii is distinguished by its smooth pale branches, glaucous, obovate, amphisotomatus leaflets and rhombic discoid drupes. It varies from a narrow-leaved spinescent morph (*R. pallida* Schinz ms. in Z) to a less spiny larger leaved morph in the north-east.

Vouchers: Breyer in TM20674 (PRE); De Winter 2875 (K, M, PRE, WIND); Dinter 5368 (BOL, G, NU, PRE, SAM, Z); Giess 14223 (M, PRE, WIND); Schmidt 1027 (WIND).

25. *Rhus tenuinervis* Engl. in A. & C. DC., Monographiae phanerogamarum 4: 423 (1883); Diels: 578 (1898); Engl.: 208 (1921); Meikle: 100 (1954); Van der Veken: 35 (1960); White: 212 (1962); R. & A. Fernandes: 599 (1966); Merxm. & A. Schreib.: 13 (1968); Kokwaro: 32 (1986). Type: Angola, between Benguela and R. Catumbela, *Welwitsch 4418* (G-DC, holo.!; BM!, COI!, K!, LISU!, iso.).

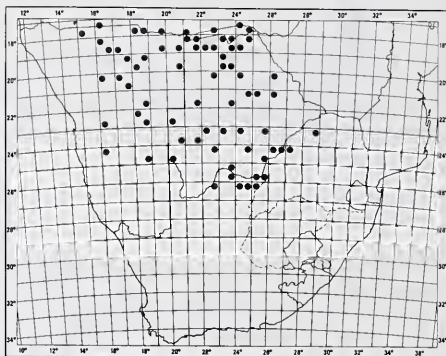
Toxicodendron tenuinerve (Engl.) Kuntze: 154 (1891).

R. commiphoroides Engl. & Gilg: 289 (1903); Engl.: 208, t. 103 A-D (1921); Schönl.: 71, t. p. 72 (1930); Burti Davy: 505 (1932); O.B. Mill.: 46 (1952). Type: Angola, Kuito, between Onschingue and Kutue, 1200 m, 1.3.1900, *Baumg 744* (Z, lecto.! here designated; COI!, GI!, K!, M!, W!, isolecto.).

R. amboensis Schinz: 639 (1908). Type: Namibia, Ovamboland, Ojovu Ondonga, 31.1.1900, *Rautanen 576* (Z, holo.!; M!, iso.).

R. kwebenensis N.E. Br.: 100 (1909). Type: Botswana, Kwebe hills, *Lugard 200* (K, holo.!; BM!, GRA!, Z!, iso.).

Much-branched, unarmed or occasionally spinescent shrub up to 3 m high. *Bark* granular, dull grey-brown; branchlets tomentose. *Leaves* trifoliate, petiolate; petiole semiterete, shallowly canaliculate, tomentose, (3-)13(-33) mm long; leaflets sessile, papyraceous to subcoriaceous, concolorous, olive-green above, slightly paler below, thinly sericeous above, densely pubescent-villous below, hypostomatous; lamina obovate to widely obovate, occasionally elliptic, base attenuate, apex obtuse to rounded, mucronulate; margin crenate to bicrenate towards apex, slightly revolute; venation simple craspedodromous, midrib and secondaries impressed above, prominent below; terminal leaflets (10-) 30(-84) × (6-)20(-45) mm, lateral leaflets (7-)22



MAP 22.—*Rhus tenuinervis*

(-55) × (4-)14(-33) mm. *Panicles* lax, axillary and terminal, later up to 150 mm long, exposed, axillary within foliage. *Flowers* normal. *Drupe* rhombic, discoid, initially pruinose, latter shiny, dark brown, 4,8 × 1,7 to 6,7 × 2,4 mm.

In Namibia ranges from Ovamboland in the west to eastern Caprivi and further through the eastern and central parts as far south as the Stampriet District. Scattered throughout Botswana and isolated plants occur across the border in the Monte Christo and Thabazimbi areas of the Transvaal and north of Vryburg in the northern Cape. Distributed further in Angola, Zambia, Zimbabwe, Mozambique, Malawi, Tanzania, Kenya and Ethiopia. Flowering recorded in February and March. Map 22.

Usually found on sandy soils, termitaria and sometimes forming thickets in woodland. The olive-green, villous bicrenate leaflets with craspedodromous venation, as well as the rhombic, discoid fruits make this species distinct.

Vouchers: P. & D. Craven 374 (WIND); Jeppe 4 (PRE, WIND); Merxmüller & Giess 1822 (BR, M, WIND); Müller & Giess 593 (M, PRE, WIND); Ngoni 447 (SRGH).

26. *Rhus leptodictya* Diels in Botanische Jahrbücher 40: 86 (1907); Engl.: 215 (1921); R. & A. Fernandes: 697 (1965c); R. & A. Fernandes: 603 (1966); Compton: 331 (1976); Moffett: 26 (1984). Type: Zimbabwe, Bulawayo, Tree-steppe, *Engler 2915* (B†); Transvaal, Pretoria, *Reck 13* [GRA, neo.! vide R. & A. Fernandes: 699 (1965c)].

R. guenzii sensu Schönl.: 79 (1930) et auct. mult. non Sond.

R. amerina Meikle: 243 (1953). Type: Zimbabwe, Matopos, *Hutchinson 4140* (K, holo.!).

R. rhombocarpa R. & A. Fernandes: 253 (1965b). Type: Angola, Quilemba, Muriqueia, 1800 m, 28.9.1957, B. Teixeira 2810 (COI, holo.!; LISC!, iso.).

Spreading shrub or small to medium-sized tree up to 9 m high and 0,8 m d.b.h. *Bark* rough, reticulately fissured, dark brown; branches pendulous, branchlets glabrous and reddish brown. *Leaves* trifoliolate, petiolate; petiole glabrous, semiterete, slightly canaliculate above, (9–)25 (–46) mm long; leaflets sessile, membranous to subcoriaceous, concolorous to slightly discoloured, dull green above, slightly paler below, glabrous, hypostomatous; lamina lanceolate, base cuneate, apex acute to subacute, often mucronulate, margin entire, serrulate or serrate; venation simple to semicraspedodromous, midrib and secondaries prominent above, only midrib prominent below; terminal leaflets (26–)63(–109) × (6–)13(–25) mm, lateral leaflets (12–)39(–72) × (4–)11(–19) mm. *Panicles* much branched, lax, axillary and terminal, latter up to 120 mm long, forming prominent sprays in autumn. *Flowers* normal, but ovary oblique, styles deflexed. *Drupe* rhombic, discoid, glabrous, shiny, light to dark brown, 3,8 × 1,3 to 6,3 × 2,1 mm. Fig. 19.

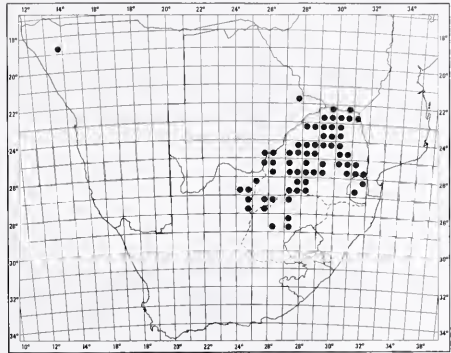
Occurs on rocky koppies, in bushveld and open savanna in all parts of the Transvaal except the colder south-eastern highveld. It also occurs in the northern and central Orange Free State and just reaches the northern Cape and Botswana. There is an isolated record from the Kaokoveld in north-western Namibia and another doubtful one from the Namib Desert near Walvis Bay. Also occurs in Angola, Mozambique, Zimbabwe and Malawi. Flowering recorded from December to April and in July. Map 23.

Whereas specimens from the Transvaal lowveld all have prominent serrations, both entire and serrate morphs occur elsewhere, e.g. *Bredenkamp* 144 (PRE) (serrate) and 355 (PRE) (entire) are both from the Suikerbosrand Nature Reserve near Heidelberg, Transvaal. *R. tenuipes* R. & A. Fernandes from Zimbabwe may just be a narrower leaved morph of this species.

Rhus leptodictya has become an important horticultural subject in Transvaal streets and gardens.

Vouchers: *Codd* 6089 (K, PRE, SRGH); *Gersmer* in PRE 45800 (PRE); *Leistner* 2986 (K, KMG, M, PRE, SRGH); *Miller B/205* (PRE); *Netshungani* 867 (PRE, VENDA).

27. *Rhus lucens* Hutch., A botanist in southern Africa: 480 (1946); O.B. Mill.: 179



MAP 23.—*Rhus leptodictya*

(1953); White: 212 (1962); R. & A. Fernandes: 600 (1966). Type: Zimbabwe, near Victoria Falls, *Hutchinson & Gillett* 3473 (K, holo.!; BM!, SRGH!, iso.).

Shrub or small tree up to 4,5 m high; branches dull grey, prominently lenticellate, glabrous to slightly pubescent. *Leaves* trifoliolate, petiolate; petiole semiterete, brownish orange, slightly marginate, (12–)20(–28) mm long; leaflets sessile, coriaceous, glaucous, grey-green above, slightly paler below; lamina obovate, widely elliptic to subcircular, base cuneate to attenuate, terminal leaflet rarely petiolate, apex rounded, sometimes retuse or emarginate; venation simple to semicraspedodromous, midrib and secondaries prominent above and below, brownish orange, terminal leaflets (28–)60(–80) × (20–)30(–48) mm, lateral leaflets (22–)30(–50) × (15–)24(–36) mm. *Panicles* lax, axillary and terminal, latter somewhat fasciculate, generally within foliage. *Flowers* normal. *Drupe* rhombic, discoid, shiny, light to dark brown, 4,5 × 1,8 to 6,5 × 2,4 mm.

Only a single record for our area from Chobe, south of Deka in the north-eastern corner of Botswana. Further in Zimbabwe and Zambia in or near the Zambezi River valley. Flowering recorded in April. Map 24.

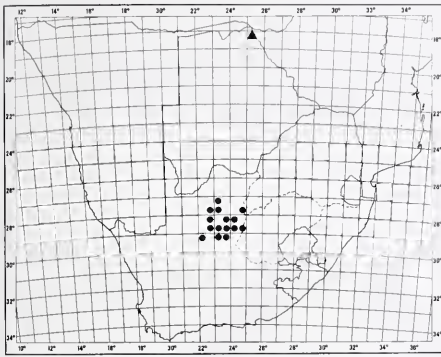
The relatively large rounded leaflets together with the discoid drupes, make this species readily recognizable.

Vouchers: *Miller B/1328* (K, PRE) Botswana; *Garnett* 177 (PRE) Zimbabwe; *Gilges* 642 (K, PRE, SRGH) Zambia; *Pole Evans* 2734 (COI, K, PRE, SRGH) Zimbabwe.



EWH

FIGURE 19. — *Rhus leptodictya*: 1, fruiting branch, $\times 0,8$; 2, leaf from lowveld morph, $\times 0,8$ (*Netshungani 867*); 3, leaf from highveld morph, $\times 0,8$ (*Bredenkamp 355*); 4, drupes, $\times 2,5$ (1 & 4, *Leendertz 8255*); 5, habit. Artist: E. Ward-Hilhorst.



MAP 24. — ▲ *Rhus lucens*
● *R. tridactyla*

28. *Rhus tridactyla* Burch., Travels in the interior of southern Africa I: 340 (1822) '*R. tridactyle*'; DC.: 71 (1825); G. Don: 74 (1832); Sond: 516 (1860); Engl.: 446 (1883); Diels: 590, 641 (1898); Engl.: 217 (1921). Type: Northern Cape, Asbestos Mountains, 27.9.1811, *Burchell 1667* (K, holo.!; BOL!, iso.).

Toxicodendron tridactylum (Burch.) Kuntze: 154 (1891).

R. ciliata sensu Schönl.: 82 (1930) p.p., et auct. mult., non Licht. ex Schult.

Thin, armed shrub from 2 to 4 m high. *Bark* grey, smooth; branches spreading, white, somewhat striate, often ending in spines. *Leaves* trifoliolate, petiolate; petiole slender, semiterete, canaliculate, slightly margined, (6-)9(-12) mm long; leaflets sessile, subcoriaceous, concolorous, olive-green, glabrous, amphistomatous; lamina linear, slightly convex, apex rounded, mucronulate; margin entire; venation obscure, midrib prominent above, impressed below, secondaries seldom visible, if so then only below, at an angle of 80-90°; terminal leaflets (11-)29(-50) × (1,0-)1,7(-2,1) mm, lateral leaflets (7-)22(-36) × (1,0-)1,7(-2,0) mm. *Panicles* lax, glabrous, up to 80 mm long, axillary and terminal, exposed. *Flowers* minute, pedicellate, glabrous, calyx lobes 0,5 mm long, corolla lobes 1,3 mm long, widely ovate, obtuse to retuse, disc 5-crenulate; ovary subglobose, styles separate, deflexed. *Drupe* rhombic, discoid, glabrous,

shiny, light to dark brown, ± 5,8 × 2,0 mm. Fig. 16.

Occurs only in the northern Cape, from near Kuruman and Taung in the north to near Prieska and Douglas in the south. Flowering recorded in February and March. Map 24.

Because they are both sympatric in some areas, have a wiry habit and leaflets that are superficially similar, this species is often confused with *R. ciliata* (no. 21). *R. tridactyla* is however a clearly distinct species with the strictly linear, amphistomatous leaflets with rounded apices, together with discoid drupes separating it from the others. It is apparently only found on calcareous soils.

Vouchers: *Acocks 209* (BM, K, PRE); *Bryant 875* (P, PRE); *Marloth 4834* (PRE, STE); *Moffett 1670* (MO); *Moffett 1671* (PRE).

29. *Rhus dregeana* Sond. in Harv. & Sond., Flora capensis I: 516 (1860); Engl.: 445 (1883); Diels: 590, 625, 641, t. 6 D (1898); Sim: 194, t. 48, fig. 4 (1907); Engl.: 216, t. 107 D (1921); Schönl.: 83, t. p. 83 (1930). Type: Cape Province, Stormberg, Mooypplaats, *Drège s.n.* (S, lecto.! here designated; K!, PRE!, SAM!, TCD!, isolecto.).

Toxicodendron dregeanum (Sond.) Kuntze: 154 (1891).

Much-branched, wiry, unarmed shrub, from 0,6 to 2,0 m high. *Branches* grey, branchlets glabrous. *Leaves* trifoliolate, petiolate; petiole semiterete, canaliculate above, (6-)10(-17) mm long; leaflets sessile, coriaceous, rigid, glabrous, concolorous, olive-green, amphistomatous; lamina linear-acute, occasionally slightly falcate, concave, apex acute, sometimes mucronulate; margin entire; venation obscure, midrib dull yellow, prominent above and below, terminal leaflets (19-)39(-66) × (1-)2(-3) mm, lateral leaflets (15-)29(-49) × (1-)1,5(-2) mm. *Panicles* lax, much-branched, relatively short, up to 35 mm long, axillary and terminal, flowers pendulous. *Flowers* normal, separate styles persistent. *Drupe* obovate, obloid to ellipsoid, glabrous, shiny, light brown, minutely tricuspidate, relatively large, 4,7 × 3,2 to 6,2 × 5,0 mm.

Occurs in the southern Orange Free State, southern Lesotho and north-eastern Cape Province in an area roughly circumscribed by Fauresmith, Thaba N'chu, Quthing, Rhodes, Bedford, Graaff-Reinet and Richmond. Flowering recorded in April. Map 25.

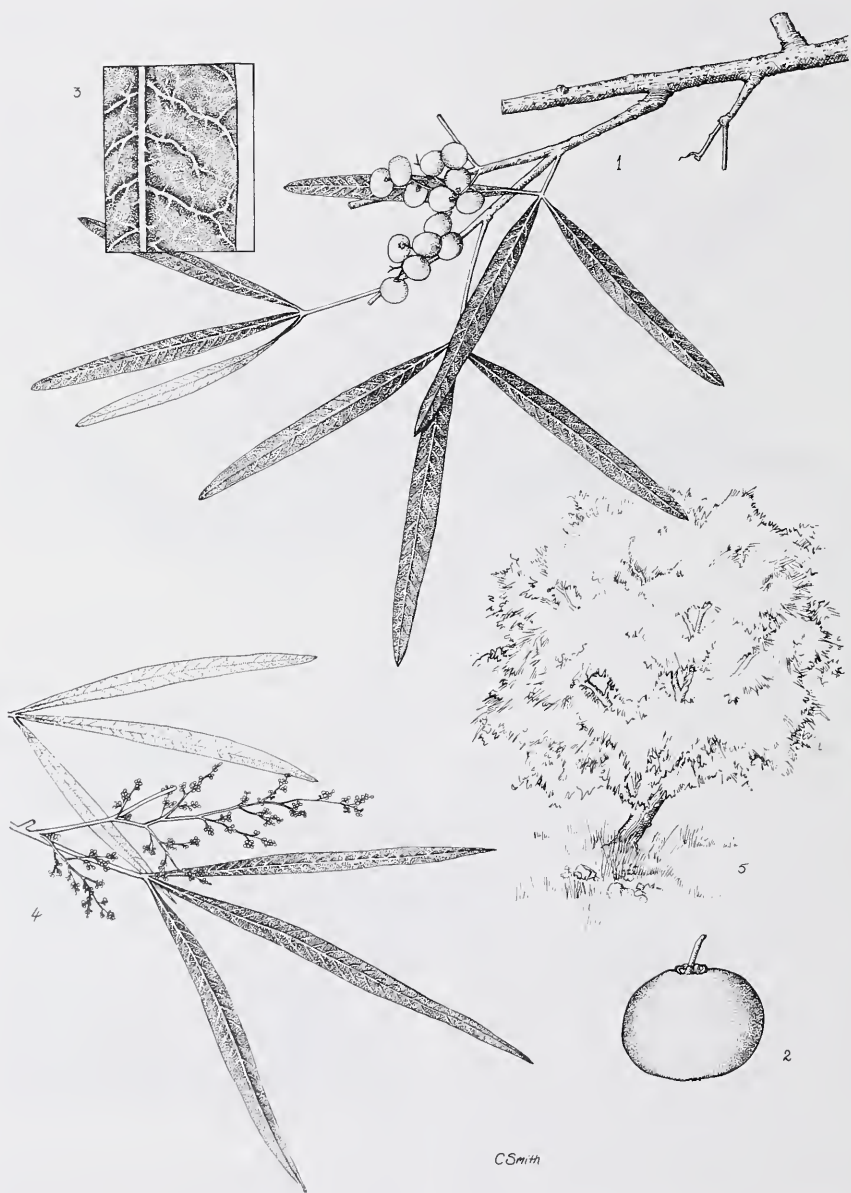
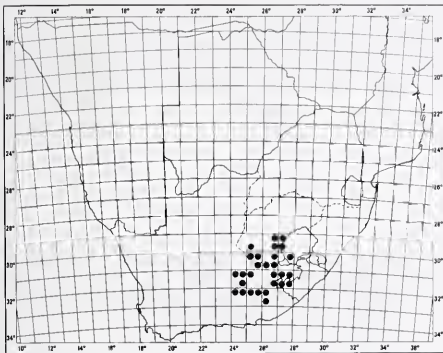


FIGURE 20.—*Rhus lancea*: 1, fruiting branch, $\times 0.7$; 2, drupe, $\times 4$; 3, detail of abaxial venation, $\times 5$ (Moffett s.n.); 4, leaves and young male inflorescence, $\times 0.7$ (Moffett s.n.); 5, habit. Artist: C. Smith.

MAP 25.—*Rhus dregeana*

This distinct species is often found on doleritic substrates.

Vouchers: *Dieterlen 1339* (NBG, P, PRE); *Hanekom 1932* (K, SRGH, WAG); *Moffett 2315* (GRA, MO, PRE); *Moffett 2889* (BLFU, MO, PRE); *Smith 4489* (GRA, PRE).

30. *Rhus lancea* L. f., Supplementum plantarum: 184 (1781); Thunb.: 52 (1794); Schult.: 658 (1820); Thunb.: 263 (1823); DC.: 70 (1825); G. Don: 74 (1832); Sond.: 544 (1860); Engl.: 444 (1883); Diels: 589, 640 (1898); Sim: 194, t. 46 (1907); Schonl.: 248 (1911); Marloth: 145 (1925); Schonl.: 72, t. p. 73 (1930); Burt Davy: 506 (1932); O.B. Mill.: 47 (1952); White: 212 (1962); R. & A. Fernandes: 602 (1966); Merxm. & A. Schreib.: 12 (1968); Moffett: 22 (1984). Type: Cape of Good Hope, *Thunberg* in *herb. Thunberg*, 7348 β [UPS, lecto.! vide Moffett: 24 (1984)].

Toxicodendron lanceum (L. f.) Kuntze: 154 (1891). *Searsia lancea* (L. f.) Lundell: 104 (1961); F.A. Barkley: 54 (1965).

R. viminalis Ait.: 368 (1789); Willd.: 1484 (1798); Jacq.: 344, t. 344 (1798). Type: Cape Province, 1774, *Masson s.n.* (BM, holo!).

R. denudata Licht. ex Schult.: 661 (1820). Type: Cape, *Lichtenstein 194*, vide Schonl.: 74 (1930) *sub. herb. Willd. 6021* (B (WILLD.) holo!).

R. fragrans Licht. ex Schult.: 661 (1820). Type: Cape Province, Karroo, Roggeveldsberg, *Lichtenstein s.n. sub herb. Willd. 6019* (B (WILLD.) holo!).

Large semi-evergreen shrub or spreading tree, usually 6–8 m high, rarely up to 12 m. *Bark*

rough, irregularly fissured, dark brown to blackish; branches and branchlets reddish, pendulous. *Leaves* trifoliolate, petiolate; petiole semiterete, slightly canaliculate above, (9–)20 (–31) mm long; leaflets sessile, subcoriaceous, glabrous, somewhat glutinous, discolorous, dark olive-green above, pale yellowish green below, hypostomatous; lamina linear to lanceolate, base narrowly cuneate, apex subacute, mucronulate; margin entire, slightly thickened, venation semi-craspedodromous, midrib and other veins prominent above, midrib only prominent below; terminal leaflets (24–)70(–120) \times (4–)8(–12) mm, lateral leaflets (14–)55(–100) \times (3–)7(–11) mm. *Panicles* lax, much branched, flowers crowded, axillary and terminal, latter up to 90 mm long, mostly within foliage. *Flowers* with corolla lobes narrower than usual, oblong, 1.5 mm \times 0.5 mm, styles widely separate, recurved, persistent. *Drupe* oblate, ellipsoid, glabrous, shiny, dull yellow to brown, 5.5 \times 4.0 to 6.5 \times 4.3 mm. Fig. 20.

Widespread in Namibia and all the provinces except Natal. This species ranges from Grootfontein in Namibia to just north of Ceres in the south-western Cape and then eastwards to near Grahamstown. From the eastern Cape its range extends northwards through the karroo, Orange Free State, Lesotho, north-western Cape and south-eastern Botswana to the Transvaal. It also occurs in Zambia and Zimbabwe. Flowering recorded from April to July. Map 26.

Generally found along watercourses in the more arid parts, the karree also occurs on plains, in bushveld and on koppies away from water. This distinct species, with its dark fissured bark, narrow leaflets and oblate fruit has become a popular horticultural subject, especially as a roadside tree.

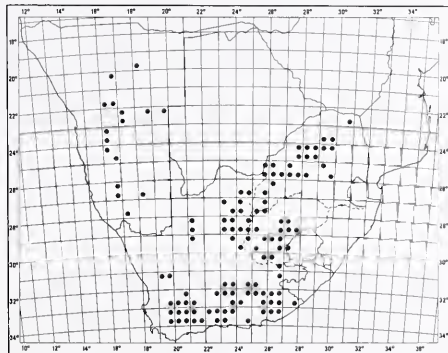
MAP 26.—*Rhus lancea*



FIGURE 21.—*Rhus erosa*: 1, fruiting branch, $\times 0.8$ (Moffett 4216); 2, branch with male inflorescence, $\times 0.8$; 3, male flower, $\times 10$ (2 & 3, Moffett 2856). Artist: E. Ward-Hilhorst.

Vouchers: *Dinter 7692* (B, BOL, G, HBG, K, M, PRE, S, WIND, Z); *Merxmüller & Giess 28064* (K, LISC, M, PRE, WAG, WIND); *Moffett 2814* (MO, NBG, PRE, STE); *Schlechter 10923* (BOL, BR, COI, G, K, L, P, PRE, S, W, WAG, Z).

31. *Rhus erosa* Thunb., *Flora capensis* 2: 212 (1818); Thunb.: 263 (1823); Sond.: 516 (1860); Engl.: 439 (1883); Diels: 587, t. 6 A–C (1898); Sim: 194, t. 48, fig. 3 (1907); Schonl.: 245 (1911); Engl.: 215, t. 107 A–C (1921); Schonl.: 84, t. p. 84 (1930); R. & A. Fernandes: 600 (1966) sphalm. Type: Cape of Good Hope, *Sparman?* in *herb. Thunberg 7333* (UPS, lecto.! here designated).

Toxicodendron erosum (Thunb.) Kuntze: 154 (1891).

R. serraeifolia Burch.: 100 (1824); DC.: 71 (1825); G. Don: 74 (1832). Type: Cape Province, Karroo, 17.3.1813, *Burchell 2697* (K, holo.!).

R. erosa var. *subintegra* Szyszyl.: 57 (1887). Type: Orange Free State, Bloemfontein, *Rehmann 3832* (Z, holo.!; GRA!, iso.).

Much-branched, evergreen, multistemmed, wiry, rounded shrub up to 3 m high, often forming thickets. *Branches* grey, prominently lenticellate, branchlets chestnut-brown, glabrous. *Leaves* trifoliate, petiolate; petiole semiterete, canaliculate and slightly margined above, (8–)19(–30) mm long; leaflets sessile, coriaceous, slightly discolorous, olive-green above, slightly paler below, glabrous, glutinous, hypostomatous; lamina linear, lateral leaflets often falcate, apex acute, often mucronulate; margin erose to grossly dentate, parted or divided, rarely almost entire; venation kladodromous to reticulodromous, midrib prominent above and below, lateral veins slightly prominent above, other veins obscure in mature leaflets; terminal leaflets (25–)51(–90) × (3–)6(–12) mm, lateral leaflets (15–)39(–81) × (2–)5(–7) mm. *Panicles* profusely multiflorous, occasionally glomerate, axillary and terminal, latter up to 100 mm long, prominently exposed. *Flowers* normal. *Drupe* circular, globoid, glabrous, shiny, light brown, relatively small, 3,3 × 3,1 to 4,5 × 4,0 mm. Fig. 21.

Occurs in the eastern, south-eastern and south-western Orange Free State, Lesotho, north-eastern Cape, western Transkei and eastern Cape. There are isolated records

extending its range to near Kimberley in the northern Cape, Carnarvon and Beaufort West in the central karroo and to between East London and Peddie in the eastern Cape. Flowering recorded in January and February. Map 27.

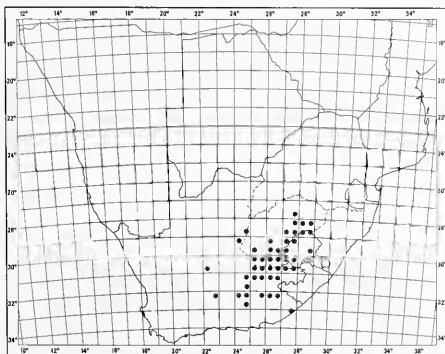
Rhus erosa is a common shrub on rocky koppies in the central interior. The wiry branches and fairly dense foliage have led to its use as a rough broom, hence its vernacular name 'besembos'. The toothed leaflets are diagnostic and it has only been confused with *Commiphora gracilifrons* Dinter ex J.J.A. van der Walt. The latter species is, however, allopatric and apart from the generic differences, has narrower leaflets.

Vouchers: *Dieterlen 78* (P, PRE, SAM, Z); *Flanagan 1529* (BOL, GRA, PRE, Z); *Moffett 2857* (GRA, MO, NBG, PRE); *Moffett 3590* (BLFU, PRE); *Scheepers 1823* (K, PRE, SRGH).

32. *Rhus bolusii* Sond. ex Engl. in A. & C. DC., *Monographiae phanerogamarum* 4: 436 (1883); Diels: 584, 626 (1898); Schonl.: 242 (1911); Schonl.: 85, t. p. 85 (1930). Type: Cape Province, Graaff-Reinet, Cave Mountain, 1250 m, *Bolus 737* (S, holo.!; BOL!, K!, SAM!, iso.).

Toxicodendron bolusii (Sond.) Kuntze: 153 (1891).

Much-branched woody shrub usually about 2 m high (one specimen reaching 5 m). Similar to *R. erosa* (no. 31) from which it differs as follows: less bushy habit; leaves with a longer petiole, widely lanceolate leaflets and rarely a 4th leaflet; margins only toothed in upper 2/3 of lamina, latter neither parted nor divided, base cuneate, apex mucronate, teeth mucronulate; male flowers often with a smaller 6th petal. *Petiole* (13–)19(–29) mm long; terminal leaflets (26–)41(–59)



MAP 27.—*Rhus erosa*



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FIGURE 22.—*Rhus kwazuluana*: 1, branch with female inflorescence, $\times 0.8$; 2, fruiting branch, $\times 0.8$; 3, drupes, $\times 2.5$ (2 & 3, MacDevette 353); 4, female flower, $\times 8$ (four styles is abnormal) (1 & 4, Ward 7472); 5, habit and habitat. Artist: E. Ward-Hilhorst.

× (3-)10(-23) mm, lateral leaflets (17-)29 (-47) × (3-)8(-21) mm. *Drupe* 4,8 × 4,3 to 4,5 × 4,3 mm.

The few collections of this species are from the eastern Orange Free State, Lesotho and north-eastern Cape. Flowering recorded in January and February. Map 28.

Specimens of *R. bolusii* are mostly solitary when collected, indicating that they might be natural hybrids of the sympatric *R. erosa* (no. 31) and *R. dentata* (no. 7). Morphological deviations include a small sixth petal in some male flowers and fourth leaflets in one specimen. More detailed work is required to ascertain whether this species should be regarded as *R. × bolusii*. For the present I am retaining it as a species as it is often fertile and in at least two localities has been recorded as quite plentiful.

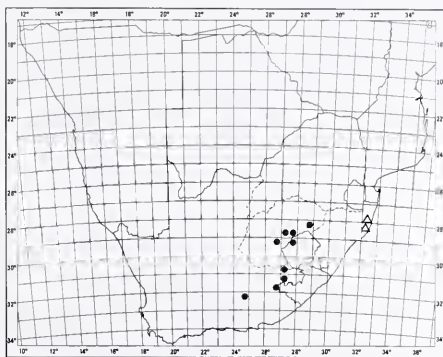
Without its globoid fruit, larger specimens of this species may be confused with *R. leptodictya* (no. 26).

Vouchers: *Acocks* 23868 (PRE); *Bolus* 1123 (BM, G, K, P, S, SAM, UPS); *Jacot Guillarmod* 842 (K, PRE); *Moffett* 2282 (BLFU, MO, NBG, PRE); *Schmitz* 8172 (PRE).

33. *Rhus kwazuluana* *Moffett*, sp. nov. a *R. lancea* L.f. habitu suffruticoso rhizomatoso, et ramis et foliis ascendentibus, a *R. magalismsontana* Sond. subsp. *trifoliolata* (Bak. f.) *Moffett* foliis hypostomatibus differt.

Type: Natal, Kwazulu, Mbomvini, St. Lucia, 10 m, 25.5.1983, *MacDevette* 353 (PRE, holo.!; CPF!, NH!, NU!, iso.).

Rhizomatous suffrutex, 0,6-1,0 m high. *Branching* dichotomous, branches erect, grey, lenticellate, branchlets stiff, glabrous, dark brown. *Leaves* ascendent, trifoliolate, petiolate; petiole rigid, semiterete, shallowly canaliculate above, slightly winged, (11-)20(-30) mm long; leaflets sessile, coriaceous, glabrous, slightly discolorous, olive-green above, grey to yellowish green below, hypostomatous; lamina linear to lanceolate, sometimes terminally falcate, apex subacute, mucronulate, margin entire, slightly thickened; venation brochidodromous to semicraspedodromous, midrib prominent above and below, other veins prominent above, less so below; terminal leaflets (40-)80(-100) × (4-)(8)(-11) mm, lateral leaflets (30-)52(-70) × (3-)6(-9) mm. *Panicles* much branched, axillary and terminal, latter up to 90 mm long, exposed. *Flowers* normal, disc circular to slightly 5-crenulate, styles separate, rarely 4. *Drupe* obloid, glabrous,



MAP 28. — ● *Rhus bolusii*
△ *R. kwazuluana*

shiny, light brown, 3,2 × 2,0 to 4,2 × 2,6 mm. Fig. 22.

Confined to north-eastern Kwazulu between Mkuzi, Sodwana Bay and St. Lucia. Flowering recorded in January and February. Map 28.

Rhus kwazuluana grows in full sun in coastal grassland over sand in the Sodwana Bay and St. Lucia areas as well as in stony hill-top grassland in the Mkuzi Game Reserve.

As a suffrutex it survives the periodic fires these grasslands are subject to. This habit, together with its ascendent foliage, serves to separate it from the arboreal *R. lancea* (no. 30) which does not occur in Natal. *R. kwazuluana* is very similar to *R. magalismsontana* subsp. *trifoliolata* (no. 22c) differing mainly in leaf anatomy.

Vouchers: *Goodman* 1159 (NH, NU); *M. Jordaan* 479 (NH); *S. McLean* 156 (NH); *Ward* 7472 (NH, PRE, UDW).

34. *Rhus pantheri* *Zahlbr.* in *Annalen des Naturhistorischen Museums in Wien* 15,1: 52 (1900); *Schönl.*: 237 (1911); *Schönl.*: 48, t. p. 48 (1930); *Burt Davy*: 503 (1932); *R. & A. Fernandes*: 598 (1966); *Compton*: 332 (1976). Type: Natal, Colossa, 27.2.1895, *Krook sub Panther* 2290 (W, holo.!; GRA! fragment, iso.).

R. cuneata N.E. Br.: 17 (1906). Type: Natal, Ladysmith, *Wood* 5706 (K, holo.!; BOL!, GRA!, NH!, iso.).

Unarmed, multistemmed shrub or small, spreading tree becoming 5 m high and 6 m wide. *Bark* dark, rough, segmented; branches grey, minutely striate, branchlets villous, greyish white.



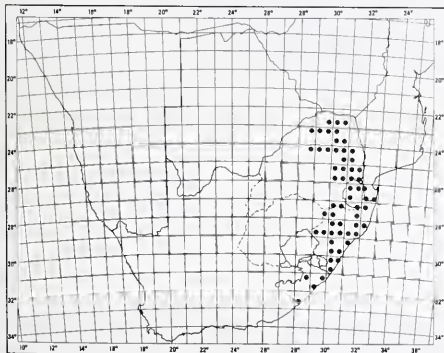
FIGURE 23.—*Rhus pentheri*: 1, fruiting branch, $\times 0,9$; 2, branch with young male inflorescence, $\times 0,9$ (Moffett 1726); 3, leaf, $\times 0,9$ (Moffett 3164); 4, leaf, $\times 0,9$ (Moffett 3029); 5, seedling leaf, $\times 0,9$ (Moffett 3106); 6, drupes, $\times 2,6$ (1 & 6, Moffett 2099); 7, habit. Artist: E. Ward-Hilhorst.

Leaves trifoliolate, petiolate; petiole slender, subterete, slightly canaliculate above, sparsely hairy, (6-)12(-20) mm long; leaflets sessile, membranous, discolorous, dark green above, olive-green below, hypostomatous, glabrous when mature; lamina obovate to obtrullate, base cuneate, lateral leaflets less so, apex retuse, rounded, obtuse or subacute; margin slightly revolute, entire or irregularly bluntly toothed near apex; venation kladodromous, midrib prominent above, slightly prominent below, secondary nerves impressed, dull yellow above, grey below; terminal leaflets (18-)28(-43) × (8-)12(-24) mm, lateral leaflets (10-)18(-30) × (5-)9(-17) mm. *Panicles* mostly within foliage, much-branched, pubescent, flowers crowded, axillary and terminal, latter up to 45 mm long. *Flowers* normal, calyx lobes sparsely pubescent. *Drupe* circular to oblate, ellipsoid to lenticular, 3,3 × 1,6 to 4,7 × 2,7 mm. Fig. 23.

Ranges from the Blaauwberg and Soutpansberg Mountains of the northern Transvaal through the eastern Transvaal, Swaziland, Natal and as far south as Kentani in Transkei. Rare in the eastern Orange Free State. Also occurs in Mozambique. Flowering recorded in February and March. Map 29.

Rhus pentheri is recognized by its rough, blocky bark, membranous leaflets with grey abaxial veins, whitish villous branchlets and an abundance of relatively small lenticular drupes.

Vouchers: *Buitendag 830* (LISU, NBG, PRE); *Edwards 731* (NU, SRGH); *Moffett 1726* (K, MO, NBG, PRE); *Strey III63* (E, K, NH, NU, PRE); *Thorncroft 3092* (BR, PRE).



MAP 29.—*Rhus pentheri*

35. *Rhus refracta* Eckl. & Zeyh., Enumeratio plantarum africae australis 2: 145 (1836); Walp.: 552 (1842); Sond.: 510 (1860); Engl.: 427, 538 (1883); Diels: 581 (1898); Schonl.: 243 (1911); Schonl.: 45, t. p. 45 (1930); R. & A. Fernandes: 609 (1966). Type: Eastern Cape Province, Uitenhage, Zwartkops River, *Ecklon & Zeyher II03* (S, lecto.! here designated; C!, L!, M!, P!, SAM!, W!, isolecto.).

Toxicodendron refractum (Eckl. & Zeyh.) Kuntze: 154 (1891).

Much-branched squarrose shrub up to 3 m high or small crooked stemmed trees up to 4 m high, usually armed. *Bark* rough, irregularly fissured; branchlets striate, glabrous, puberulous or pubescent, often ending in stout spurs. *Leaves* trifoliolate, petiolate; petiole semiterete, shallowly canaliculate above, glabrous or sparingly pubescent, (4-)8(-12) mm long; leaflets sessile, membranous to submembranous, concolorous, dark green above, slightly paler below, hypostomatous, glabrous, villous to velutinous; lamina obovate, somewhat rugose, base cuneate, apex retuse, rounded to obtuse; margin entire, revolute to slightly revolute; venation kladodromous, midrib and laterals impressed above, midrib and secondaries slightly prominent below, other veins obscure; terminal leaflets (8-)18(-32) × (5-)8(-12) mm, lateral leaflets (6-)13(-26) × (4-)7(-14) mm. *Panicles* puberulous to shortly pubescent, axillary and terminal, latter up to 50 mm long. *Flowers* normal, corolla lobes narrow, oblong. *Drupe* circular to oblate, obloid, pruinose, blueish brown, 3,6 × 3,0 to 5,0 × 4,3 mm; stone with pronounced bony lateral process.

Widespread in the eastern Cape between the Sundays and Kei River from the coast to near Cradock inland. Its range is extended north-eastwards by a few collections in Transkei and south-westwards by isolated collections near Willowmore and Plettenberg Bay in the southern Cape. There is also a single record from Mozambique. Flowering recorded in January. Map 30.

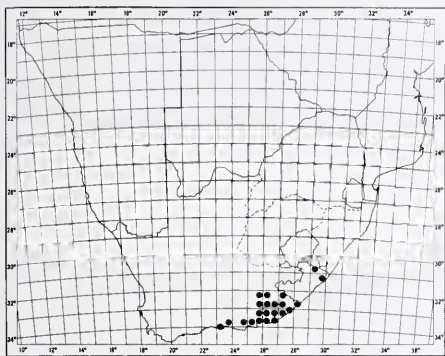
A coastal, rugose, revolute and hairy leaved morph as well as a glabrous, less revolute morph from inland may be recognized. Without fruit, the inland morph cannot, however, easily be separated from *R. pentheri* (no. 34).

Rhus refracta is diagnosed by its squarrose spines, the somewhat rugose, revolute and hairy leaflets and by the pruinose, blueish brown drupes with laterally ridged bony seed. A number of collections between the Alexandria Forest



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FIGURE 24.—*Rhus crenata*: 1, fruiting branch, $\times 0.9$; 2, branch with male flowers, $\times 0.9$; 3, drupe, $\times 3.4$; 4, stone, sideview, $\times 7$; 5, stone, lateral view, $\times 7$ (1, 3–5, *Moffett 2526*); 6, male flower, $\times 8.6$ (2 & 6, *Moffett 3244*). Artist: E. Ward-Hilhorst.

MAP 30.—*Rhus refracta*

and the Great Fish River exhibit features of both this species and the sympatric *R. crenata* (no. 36) and it is suspected that they are fertile natural hybrids.

Vouchers: *Acocks* 12765 (PRE); *Dyer* 211 (GRA, PRE, PRF); *S.M. Johnson* 970 (K, PRE); *Moffett* 2880 (MO, NBG, PRE); *Zeyher* 2237 (K, P, PRE, S, W).

36. *Rhus crenata* Thunb. in Hoffm., *Phytographische Blätter*: 28 (1803); Thunb.: 219 (1818); Schult.: 653 (1820); Thunb.: 266 (1823); DC.: 72 (1825); G. Don: 75 (1832); Eckl. & Zeyh.: 149 (1836); Sond.: 512 (1860); Engl.: 422 (1883); Diels: 577, 631 (1898); Sim: 196, t. 48, fig. 1 (1907); Schonl.: 241 (1911); Engl.: 208 (1921); Schonl.: 47, t. p. 47 (1930); Adamson: 362 (1950); Bond & Goldblatt: 138 (1984). Type: Cape of Good Hope, *Thunberg* in *herb. Thunberg 7321*, *Rhus crenatum* α , (UPS, lecto.! here designated).

Toxicodendron crenatum (Thunb.) Kuntze: 154 (1891).

Evergreen, much-branched, unarmed shrub up to 4 m high, usually forming dense colonies. *Branches* grey-brown, branchlets ascending, greyish rufous, villous. *Leaves* trifoliolate, subsessile to petiolate; petiole semiterete, shallowly canaliculate above, occasionally margined, (1–)2,5(–6) mm long; leaflets sessile, membranous, slightly discolourous, dark green above, slightly paler below, glabrous, hypostomatous; lamina obovate, obtriangular to obovate, base cuneate, apex obtuse to somewhat truncate;

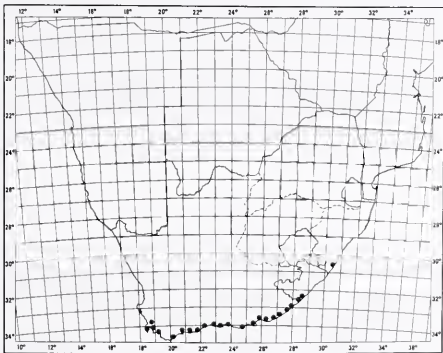
margin slightly revolute, apex paucicrenate; venation kladodromous, veins impressed above, obscure, midrib and secondaries slightly prominent below; terminal leaflets (7–)18(–27) \times (5–)9(–15) mm, lateral leaflets (5–)13(–17) \times (4–)7(–11) mm. *Panicles* sparingly branched, villous, axillary and terminal, latter up to 40 mm long, exposed. *Flowers* normal, but rarely 4- or 6-merous, corolla lobes narrow, oblong. *Drupe* obovate, obloid, pruinose to shiny, blueish dark brown 4,1 \times 3,7 to 5,2 \times 4,6 mm; stone with bony lateral processes. Fig. 24.

Found on coastal and adjacent inland dunes from the Cape Peninsula in the west to Umzumbe in southern Natal. There is a gap of about 280 km in its recorded distribution between Mazeppa Bay and Umzumbe which may be due to a lack of collections or suitable habitat along that part of Transkei coast. Flowering recorded in April. Map 31.

Rhus crenata is recognized by its dense foliage, subsessile, crenate leaflets, dark blueish fruit and stone with bony lateral processes.

Vouchers: *Bayliss* 1475 (B, G, HBG, K, M, PRE, WAG, Z); *Flanagan* 846 (GRA, PRE, SAM); *Moffett* 3244 (NBG, PRE); *Schlechter* 10394 (BR, COI, E, G, GRA, K, L, P, PRE, W, WAG, Z).

37. *Rhus natalensis* Bernh. ex Krauss in *Flora* 27: 349 (1844); Sond.: 515 (1860); Engl.: 421 (1883); Engl.: 206 (1921); Schonl.: 68, t. p. 68 (1930) p.p. excl. cit. syn.; R. & A. Fernandes: 597 (1966) p.p. excl. cit. syn.; Kokwaro: 28 (1986) p.p. excl. cit. syn. Type: Natal, Forests around Natal Bay (Durban), *Krauss* 395 (TUB, lecto.! here designated; G!, K!, TCD!, isolecto.).

MAP 31.—*Rhus crenata*

Cissus natalensis Bernh. ms. *Toxicodendron natalense* (Bernh.) Kuntze: 154 (1891). *R. glaucescens* A. Rich. var. *natalensis* (Krauss) Engl.: 245 (1895). *Searsia natalensis* (Bernh. ex Krauss) F.A. Barkley: 57 (1965).

Unarmed, evergreen semiscandent shrub or slender tortuous tree up to 5 m high. *Bark* granular, grey-brown, lenticellate; branchlets glabrous. *Leaves* trifoliolate, petiolate; petiole semiterete, canaliculate above, somewhat margined, (8–)17 (–31) mm long; leaflets subcoriaceous, slightly discolorous, dark green above, light green below, hypostomatous, glabrous; lamina elliptical, weakly undulate, base cuneate, apex emarginate, retuse or obtuse; margin crenulate in upper $\frac{2}{3}$ of lamina, slightly thickened; venation kladodromous to semicraspedodromous, midrib prominent above and below, secondary veins slightly prominent above, impressed below; terminal leaflets (19–)47(–77) \times (9–)19(–30) mm, lateral leaflets (14–)35(–60) \times (6–)16(–26) mm. *Panicles* lax, fairly sparsely branched, axillary and terminal, latter up to 70 mm long, exposed. *Flowers* normal. *Drupe* circular to oblate, globose, glabrous, shiny, chestnut to cinnamon-brown, 5.5 \times 5.0 to 7.5 \times 6.8 mm; stone with slight lateral processes.

Occurs in coastal scrub and dune forest from the Mozambique-Natal border down to just west of East London. Also found in Mozambique and its islands, the Comores and East Africa. Flowering recorded in October, November, January, March and May. Map 32.

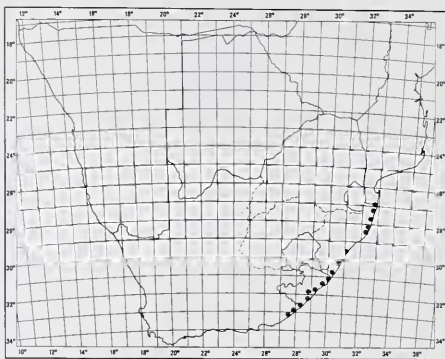
The scandent habit and relatively large round fruits separate *R. natalensis* from the next species, *R. gueinzii*.

Most of the extra-South African material filed under *R. natalensis* and seen by me in European herbaria probably belongs to *R. crenulata* A. Rich. or to *R. glaucescens* A. Rich., a species with slightly reniform ellipsoid drupes and which Engler divided into a great many varieties.

Vouchers: *Lam & Meeuse* 6173 (L, PRE); *Moffett* 3160 (MO, NBG, PRE); *Moll* 4867 (K, NH, PRE, S, SRGH); *Ward* 4920 (NH, NU, PRE); *Ward* 7000 (PRE).

38. *Rhus gueinzii* Sond. in Harv. & Sond., *Flora capensis* 1: 515 (1860); Engl.: 442 (1883); Diels: 589, 623 (1898). Type: Natal, Port Natal (Durban), *Gueinziius s.n.* (TCD, lecto.! here designated; K!, S!, isolecto.).

Toxicodendron gueinzii (Sond.) Kuntze: 154 (1891). *Searsia gueinzii* (Sond.) F.A. Barkley: 57 (1965).



MAP 32.—*Rhus natalensis*

R. gueinzii var. *crispa* Harv. ex Engl.: 443 (1883); Schönl.: 247 (1911). *R. crispa* (Harv. ex Engl.) Schönl.: 80, t. p. 80 (1930). Type: Natal. *Gerrard & McKen* 1397 (K, holo.!; BM!, TCD!, W!, iso.).

R. spinescens Diels: 87 (1907); Schönl.: 247 (1911); Schönl.: 70, t. p. 70 (1930); Burt Davy: 505 (1932). *R. gueinzii* Sond. var. *spinescens* (Diels) R. & A. Fernandes: 186 (1965a); Compton: 331 (1976). *Searsia spinescens* (Diels) F.A. Barkley: 57 (1965). Type: Transvaal, Komatipoort, *Schlechter* 11791 (K, lecto. here designated!; BOL!, GRA!, PRE!, isolecto.).

R. simii Schönl.: 69, t.p. 69 (1930); Burt Davy: 505 (1932). *Searsia simii* (Schönl.) F.A. Barkley: 57 (1965). Type: Eastern Cape, Toise River, 1100 m, Jan. 1897, *Sim* 2127 (PRE, lecto.! here designated, BOL!, GRA!, isolecto.).

R. simii Schönl. var. *lydenburgensis* Schönl.: 70 (1930); Burt Davy: 505 (1932). Type: Transvaal, Komatipoort, *Keet* 1431 (GRA, lecto.! here designated; K!, PRE!, STE!, isolecto.).

Spreading shrub to 3 m or small tree up to 8 m high, usually armed. *Bark* fairly rough, granular, grey-brown; branchlets whitish grey, prominently lenticellate, often forming terete, stout spines. *Leaves* trifoliolate, petiolate; petiole semiterete, shallowly canaliculate above, (3–)18(–38) mm long; leaflets sessile, membranous to submembranous, concolorous, glaucescent to shiny dark green above, slightly paler below, glabrous, hypostomatous; lamina lanceolate to narrowly elliptic, rarely ovate or obovate, base cuneate, apex retuse, mucronulate, occasionally emarginate or rounded; margin entire or crenulate to crispate in upper half, often undulate; venation brochidodromous, midrib prominent above, slightly paler

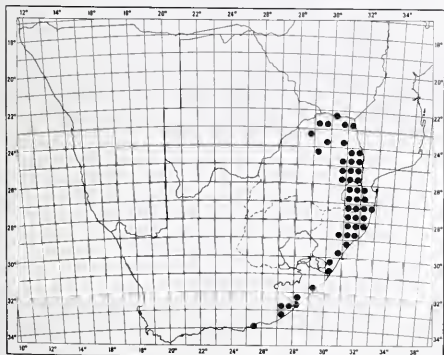
below, lateral veins impressed on both surfaces; terminal leaflets (13–)45(–103) × (5–)12(–25) mm, lateral leaflets (10–)29(–65) × (1–)9(–20) mm. *Panicles* much branched, lax, furfuraceous, axillary and terminal, both exposed, up to 80 mm long. *Flowers* normal. *Drupe* circular-oblate, ellipsoid, glabrous, shiny, light to cinnamon-brown, 3.5 × 2.6 to 4.7 × 3.8 mm; stone lenticular with slight lateral ridging. Fig. 25.

Ranges from the northern Transvaal through eastern Transvaal, Swaziland, the lower lying parts of Natal and Transkei to Port Elizabeth in the eastern Cape. Also in Zimbabwe and Mozambique. Flowering recorded from September to April. Map 33.

Rhus guenzii comprises a heterogeneous assemblage, ranging from the narrow-leaved *R. guenzii/R. spinescens* morph, through *R. simii* to the broader leaved *R. crispa*. As the respective morphs also often occur in widely separated areas and with many intermediates, it is best to regard this species as one polymorphic taxon. A fairly distinct morph with smaller leaflets and orangy lower veins, however, occurs in the Ingwavuma area. So far only male material has been collected and it is thus provisionally included here.

Herbarium specimens of this species are very similar to those of *R. glaucescens* A. Rich., a species from East Africa and Ethiopia, which many taxonomists erroneously include in *R. natalensis* (no. 37). Should they prove conspecific, *R. guenzii* will become a synonym of *R. glaucescens*, a species which has given taxonomists problems as 14 varieties of it have been described.

Vouchers: *Hitchins 943* (PRE); *Moll 4266* (K, NH, PRE); *Story 3938* (GRA, K, PRE) (*R. guenzii/R. spinescens*). *Flanagan 797* (BOL, GRA, SAM); *Van der Schijff 4179* (PRE; PUC) (*R. simii*). *Van Jaarsveld 1137* (NBG, K, PRE); *Pegler 1446* (BOL, SAM) (*R. crispa*). *Strey 4026* (G, K, M, PRE, S, Z) (Ingwavuma morph).



MAP 33.—*Rhus guenzii*

39. *Rhus sekhukhuniensis* Moffett, sp. nov., cortice atrobrunneo, foliis dense instructa, folioli rigidis politis, costa subtu rubro-crocea, in sicco aeneis; drupis plus minusve verrucosis, distincta.

Type: Eastern Transvaal, between Steelpoort and Lydenburg, at top of Steelpoort Park Pass, 6.4.1979, *Moffett 2000* (PRE, holo.; K, iso.).

Much-branched, unarmed, densely foliated, evergreen shrub up to 3 m high. *Bark* dark, finely striate, branchlets glabrous, non-pendulous. *Leaves* trifoliolate, petiolate; petiole semiterete, broadly canaliculate above, (12–)19(–26) mm long; leaflets sessile, submembranous to coriaceous, slightly discolorous, glabrous, dark polished, olive-green above, slightly paler below, hypostomatous; lamina oblanceolate to narrowly obtrullate, base narrowly cuneate, apex narrow, rounded to obtuse; margin entire to crenulate in upper half; venation brochidodromous, midrib slightly prominent and pale above, prominent and reddish orange below, secondaries obscure above, impressed below; terminal leaflets (28–)47(–62) × (7–)11(–18) mm, lateral leaflets (18–)31(–41) × (6–)9(–12) mm. *Panicles* up to 50 mm long, furfuraceous, flowers crowded, axillary and mostly terminal, within foliage. *Flowers* normal. *Drupe* oblate, ellipsoid, glabrous, slightly verrucose, shiny light brown, 4.7 × 3.0 to 6.2 × 3.8 mm. Fig. 25.

Confined to Sekhukhunieland in the eastern Transvaal, where it occurs on pyroxenitic substrates of the eastern rim of the Bushveld Igneous Complex in the mountains just south and north of Steelpoort. Flowering recorded in March and April. Map 34.

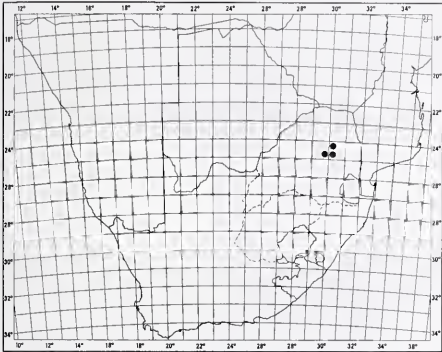
This distinct species may be recognized by its dark bark, dense foliage, stiff polished leaflets with reddish orange midrib below and verrucose fruit. The reticulation pattern of the epidermal cell walls and the presence of gloved-type glandular trichomes on the abaxial surface of the leaflets are also diagnostic. The leaflets dry a burnished bronze above, unlike the glaucescence of the previous two species.

Vouchers: *Briers 52* (PRE, UNIN); *Ket 1434* (GRA, STE); *Moffett 2001* (K, MO, NBG, PRE); *Mogg 16904* (K, PRE).

40. *Rhus lucida* L., *Species plantarum* 1: 267 (1753); L.: 963 (1759); Mill.: 10 (1768); Ait.: 369 (1789); Cav.: 27, t. 132 (1793); Thunb.: 52 (1794); Willd.: 1485 (1798); Jacq.: 52, t. 347



FIGURE 25.—*Rhus gueinzii*: 1, fruiting branch, $\times 0,8$ (Zwanziger 163); 3, leaf and fruit, $\times 0,8$; 4, drupes showing width and thickness, $\times 2,5$ (3 & 4, Van der Schijff 4179); 6, habit. *Rhus sekhukhuniensis*: 2, branch with male inflorescence, $\times 0,8$; 5, male flower, $\times 8$ (Moffett 2000). Artist: E. Ward-Hilhorst.

MAP 34.—*Rhus sekhukhuniensis*

(1798); Pers.: 326 (1805); Ait. f.: 166 (1811); Thunb.: 216 (1818); Schult.: 660 (1820); Thunb.: 264 (1823); DC.: 69 (1825); G. Don: 73 (1832); Eckl. & Zeyh.: 147 (1836); Sond.: 517 (1860); Engl.: 413 (1883); Diels: 574, 632, t. 7A–B (1898); Schonl.: 238 (1911); Engl.: 203, t. 99A–B (1921); Burtt Davy: 503 (1932); Adamson: 565 (1950); R. & A. Fernandes: 596 (1966); R. Fernandes: 130 (1967); Wijnands: 41 (1983). Type: *herb. Cliff. III, 6α(32)* (BM, lecto.! here designated).

Toxicodendron lucidum (L.) Kuntze: 154 (1891). *R. lucida* var. *typica* Schonl.: 55, t. p. 55 (1930). *Searsia lucida* (L.) F.A. Barkley: 54 (1965).

Three forms are distinguished:

40a. forma *lucida*.

R. africana Mill.: 11 (1768). Type: hort. leg. Paris, [BM, lecto], lower specimen on sheet, vide Schonl.: 58 (1930).

R. cavaniilesii DC.: 69 (1825). Type: Mexico (sphalm.). Cav.: 27, t. 132 (1793) Icono.! (MA, typo.).

R. lucida var. *β subdentata* DC.: 69 (1825); G. Don: 73 (1832); Sond.: 517 (1860); Engl.: 414 (1883). Type: Cape Province, Cape Town [vide Schonl.: 56 (1930)], *Drège 6791* (P, lecto.! here designated; Gl, K!, L!, W! isolecto.).

R. outeniquensis Szyszyl.: 52 (1887); Schonl.: 238 (1911). *R. lucida* var. *outeniquensis* (Szyszyl.) Schonl.: 56, t. p. 56 (1930). Type: Cape Province, Montagu Pass, *Rehmann 272* (B†; Z, lecto.! here designated; Kl, isolecto.).

Much-branched, unarmed, evergreen shrub to 3 m high. *Bark* granular, greyish brown; branch-

lets ascending, slightly striate, leaves crowded. *Leaves* trifoliolate, petiolate; petiole semiterete, canaliculate above, occasionally slightly winged, (3–)8(–22) mm long; leaflets sessile, subcoriaceous, concolorous, dark olive-green above, somewhat glutinous becoming glaucescent, hypostomatous; lamina spatulate to widely obtrullate, base cuneate, apex emarginate to obtuse; margin entire, slightly thickened, sometimes paucicrenate near apex; venation kladodromous, midrib prominent above and below, secondaries impressed, 3 per cm, other veins obscure; terminal leaflets (12–)35(–68) × (5–)15(–37) mm, lateral leaflets (7–)24(–51) × (3–)11(–32) mm. *Panicles* up to 50 mm long, mostly axillary and within foliage, occasionally terminal, females sparingly branched, drupes crowded. *Flowers* normal; calyx lobes deeply segmented. *Drupe* circular, globose to obloid, glabrous, shiny, dark brown, 3,3 × 3,1 to 4,6 × 4,3 mm. Fig. 26.

Distributed throughout the subcontinent in an eastern arc from the Blaauwberg in the northern Transvaal through the eastern and southern Transvaal, Natal, Transkei and moister parts of the Cape Province as far west as Paleisheuvel near Clanwilliam. Flowering recorded from August to October and in January. Map 35.

It is common in the south-western, southern and eastern Cape, but is scarcer further northwards where it occurs at the edge of scrub forests. It grows on a wide variety of substrates, including sand-dune, limestone, sandstone, granite and banded ironstone.

Rhus lucida forma *lucida* is recognized by the following characters: densely foliaged, unarmed, evergreen shrubs with ascending branches, obtrullate leaflets often turning orange, relatively few lateral veins at less than 50° to the midrib and inflorescences mainly axillary.

Vouchers: *Drège 6802* (BM, G, K, L, P, S, TCD, TUB, W); *Hugo 978* (PRE, STE); *Keet 660* (GRA, PRF, STE); *Moffett 1921* (K, MO, NGB, PRE); *Schlechter 9208* (BM, BR, COI, E, G, K, L, P, S, W, WAG, Z).

40b. forma *scoparia* (Eckl. & Zeyh.) Moffett, comb. et stat. nov.

Type: Eastern Cape Province, Uitenhage District, Olifantshoek near Bosjemansrivier (Bushmans River), *Ecklon and Zeyher 1122* (SAM, lecto.! here designated; C!, S!, TCD!, W!, isolecto.).

R. scoparia Eckl. & Zeyh.: 149 (1836); Walp.: 553 (1842); Sond.: 518 (1860); Engl.: 415 (1883); Diels: 575, 632 (1898);

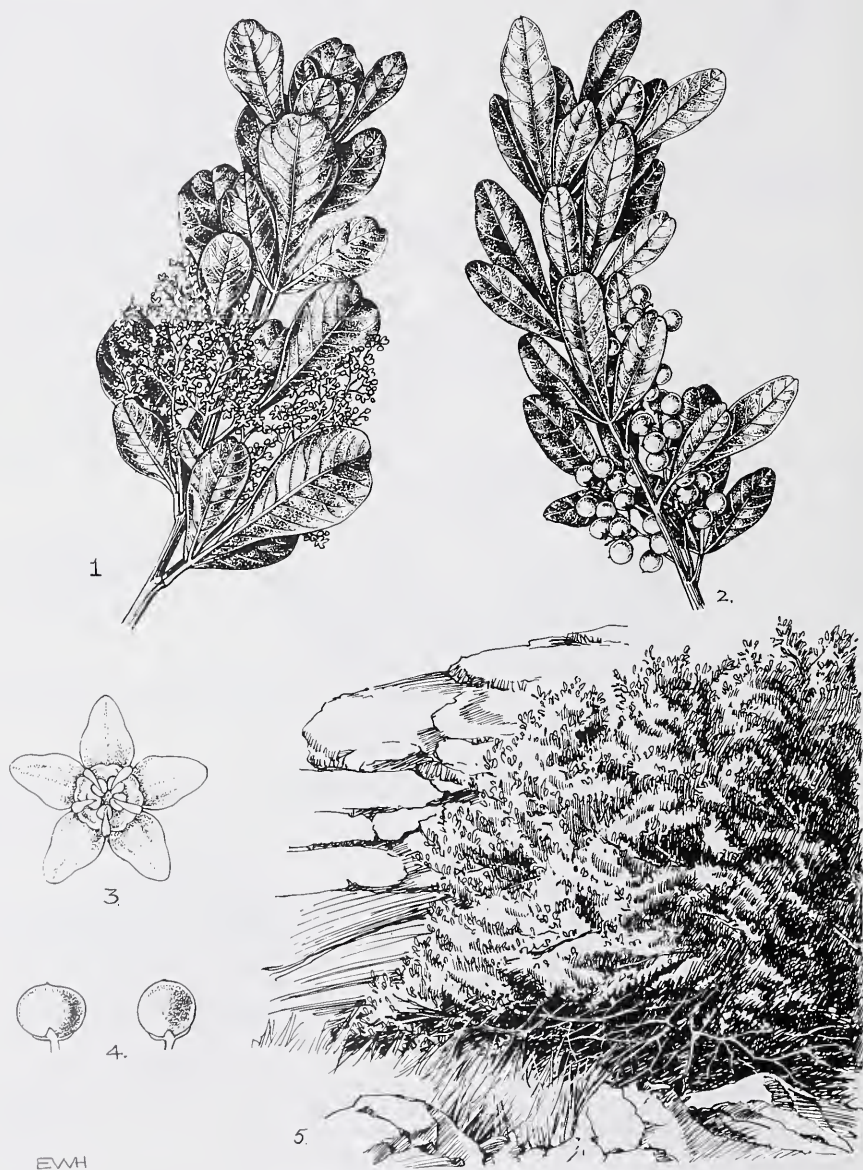
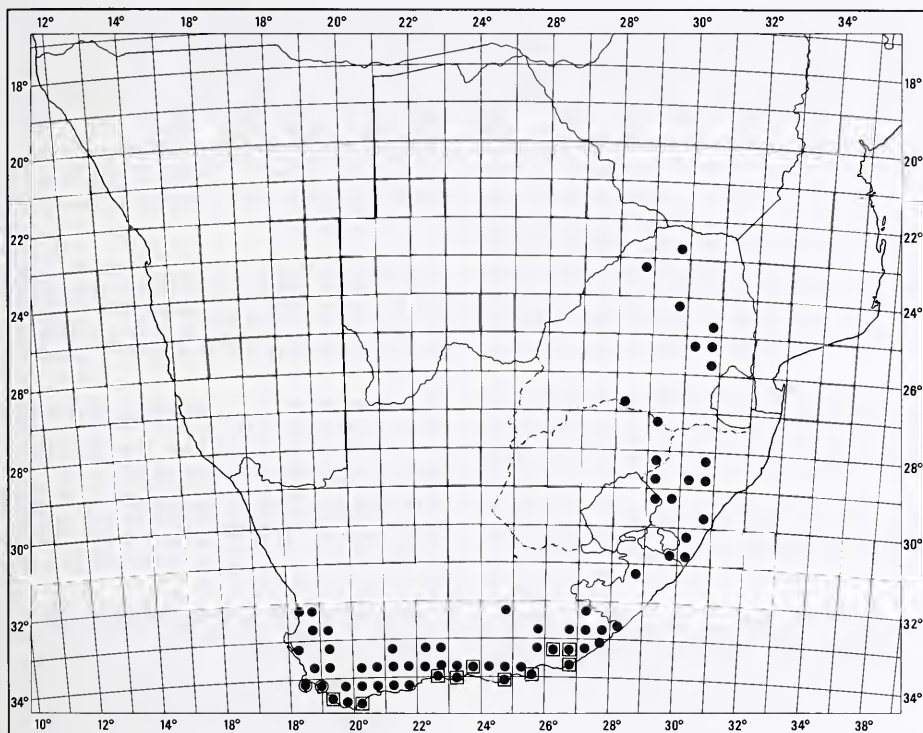


FIGURE 26.—*Rhus lucida* forma *lucida*: 1, branch with male inflorescence, $\times 0.8$; 2, fruiting branch, $\times 0.8$; 3, male flower, $\times 8$ (1 & 3, Moffett 2834); 4, drupes, $\times 2.5$ (2 & 4, Moffett 192D); 5, habit. Artist: E. Ward-Hilhorst.



MAP 35.—● *Rhus lucida* forma *lucida*
 □ *R. lucida* forma *scoparia*
 ○ *R. lucida* forma *elliptica*

Schönl.: 239 (1911). *Toxicodendron scoparium* (Eckl. & Zeyh.) Kuntze: 154 (1891). *R. lucida* var. *scoparia* (Eckl. & Zeyh.) Schönl.: 57 (1930).

R. schlechteri Diels: 501, 575, 634, t. 7E (1898); Schönl.: 239 (1911); Schönl.: 57, t. p. 58 (1930). Type: Cape Province, Bredasdorp Division, on rocky places near Elim, 150 m, *Schlechter 7624* (B, holo.†; drawing in GRA!).

This form differs from forma *lucida* in having sessile or subsessile smaller leaves with terminal leaflets generally shorter than 20 mm; a lamina which is obovate to obcordate, a revolute margin and male panicles usually exposed. *Petiole* (0–) 1(–3) mm long; terminal leaflets (11–)16(–24) × (7–)9(–13) mm, lateral leaflets (7–)13(–19) × (5–)7(–9) mm. *Drupe* 3,5 × 3,0 to 4,6 × 4,4 mm.

It occurs along the coast from Franskraal in the Caledon Division in the west to Port Alfred in the east and also near Grahamstown. In a number of places it is sympatric with forma *lucida*. Flowering recorded in October. Map 35.

The inland specimens near Grahamstown tend to merge into a small-leaved morph of forma *lucida* and can only be separated by the length of the petiole of the latter, which normally exceeds 4 mm.

Vouchers: *Burchell 4522* (GRA, K, M, P, W); *Compton 23070* (NBG); *Holland 3917* (BOL, K, STE); *Maguire 2646* (NBG); *Moffett 2479* (GRA, K, MO, NBG, PRE).

40c. forma *elliptica* (Sond.) Moffett, comb. et stat. nov.

Type: Cape Province, at the mouth of the Onrustrivier, *Zeyher 2248* (K, lecto.! here designated, SAM!, isolecto.).

R. lucida var. *elliptica* Sond.: 517 (1860); Engl.: 414 (1883).
R. dunensis Gand.: 458 (1913).

R. lucida var. *scoparia* sensu Adamson: 563 (1950) non (Eckl. & Zeyh.) Schönl.

Differs from forma *lucida* by its smaller habit, seldom exceeding height of 1 m, and by its more xeric, sessile to subsessile, glaucous leaves with a wider obovate and revolute lamina. *Petiole* (0–)2(–5) mm long; terminal leaflets (11–)24 (–38) × (8–)15(–26) mm, lateral leaflets (8–)17(–27) × (6–)11(–19) mm. *Drupe* 4,1 × 3,5 to 4,5 × 4,0 mm. From *R. lucida* forma *scoparia* it differs in its larger leaflets.

Rhus lucida forma *elliptica* is allopatric with forma *scoparia* but sympatric with forma *lucida*. It is found in rocky places near the sea in the Cape Peninsula and then eastwards between Gordon's Bay and Hermanus. Flowering recorded in June, August, September and October. Map 35.

Vouchers: *Boucher 465* (K, SRGH, STE); *Goldblatt & Gentry 1584* (BR, PRE, WAG); *Moffett 2682* (MO, PRE, STE); *Rycroft 3065* (NBG, STE); *Tijmens 13* (NBG).

41. *Rhus glauca* Thunb. in O. Hoffm., *Phytographische Blätter*: 27 (1803); Pers.: 326 (1805); Desf.: 326 (1809); Thunb.: 265 (1823); DC.: 69 (1825); G. Don: 73 (1832); Eckl. & Zeyh.: 148 (1836); Sond.: 516 (1860); Engl.: 411 (1883); Diels: 573, 635, t. 7D, F (1898); Schönl.: 239 (1911); Engl.: 203, t. 99C, F (1921); Schönl.: 61, t. p. 61 (1930); Adamson: 565 (1950); R. & A. Fernandes: 595 (1966) sphalm. Type: Cape of Good Hope, *Thunberg* in *herb. Thunberg 7339* (UPS, lecto.! here designated).

R. thunbergiana Schult.: 651 (1820); Eckl. & Zeyh.: 148 (1836). *Toxicodendron glaucum* (Desf.) Kuntze: 154 (1891).

Much-branched, evergreen, divaricate shrub up to 4 m high. *Bark* granular, grey-brown to greyish white; branches somewhat squarrose, shallowly ribbed, furfuraceous. *Leaves* trifoliolate, petiole; petiole semiterete, canaliculate and margined above, (4–)10(–20) mm long; leaflets sessile, subcoriaceous, concolorous, olive-green, glutinous, drying furfuraceous to farinaceous glaucouscent, hypostomatous, lamina obovate to obovate, base cuneate, apex emarginate, retuse, occasionally rounded or subacute, mucronate; margin entire, slightly revolute; venation klado-

dromous, midrib prominent above, slightly prominent below, secondaries slightly prominent above and below or obscure; terminal leaflets (8–)20(–34) × (4–)11(–16) mm, lateral leaflets (6–)14(–23) × (3–)8(–14) mm. *Panicles* much branched, up to 50 mm long, axillary and terminal, exposed. *Flowers* normal. *Drupe* obovate, ellipsoid, glabrous, shiny, chestnut-brown, 4,1 × 3,3 to 6,3 × 4,3 mm.

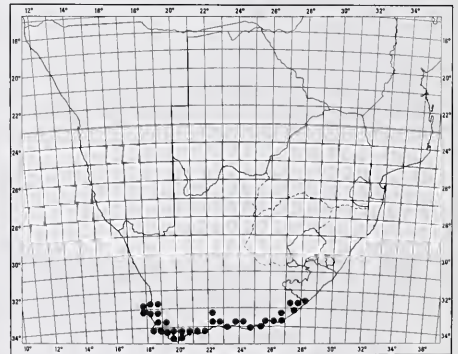
Essentially a coastal species, *R. glauca* ranges from near Kentani in southern Transkei to Velddrif in the south-western Cape. It also occurs further inland, reaching the Little Karoo near Worcester and Oudtshoorn as well as the Baviaanskloof near Steytlerville. Flowering recorded from June to September. Map 36.

This species differs from *R. lucida* forma *scoparia* (no. 40b) and *R. lucida* forma *elliptica* (no. 40c) by its divaricate to squarrose branching, petiole leaves, obovate leaflets, longer exposed panicles and ellipsoid drupes.

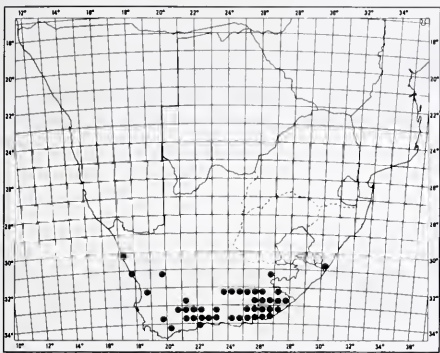
Specimens in the eastern Cape are generally much larger than those in the south-western Cape, becoming as much as 4 m high and 5 m wide near Port Alfred. In strandveld in the south-western Cape, *R. glauca* is the favoured host of the aerial parasite *Viscum capense*.

Vouchers: *Acocks 9032* (K, PRE); *Bayliss 6646* (HBG, K, NBG, S, WAG); *Moffett 3483* (MO, NBG, PRE); *Schlechter 1007* (B, BOL, GRA, P, W, Z); *J.J.M. van der Merwe 135* (K, PRE, STE).

42. *Rhus longispina* Eckl. & Zeyh., *Enumeratio plantarum africae australis* 2: 148 (1836) p.p.; Sond.: 520 (1860) p.p.; Diels: 575, 635 (1898) p.p.; Schönl.: 239 (1911) p.p.; Schönl.: 88 (1930) p.p. Type: Eastern Cape Province, Uitenhage, Zwartkopsriver and Addo; near Katrivier,



MAP 36.—*Rhus glauca*

MAP 37. — *Rhus longispina*

Fort Beaufort, *Ecklon & Zeyher III* 6 p.p. (SAM, lecto.! here designated, right hand side of sheet; GRA!, M!, P!, PRC photo.!, S!, W!, isolecto.).

Toxicodendron longispinum (Eckl. & Zeyh.) Kuntze: 154 (1891).

R. spatulata Eckl. & Zeyh.: 148 (1836) p.p.; Walp.: 553 (1842). Type: Eastern Cape Province, Uitenhage, near Zwartkopsrivier, *Ecklon & Zeyher III* 9 p.p. (S, lecto.! here designated p.p. excl. specim. *R. pallens* Eckl. & Zeyh. on same sheet; P!, SAM!, TCD!, isolecto.).

Much-branched, multistemmed, evergreen, armed shrub up to 4 m high. *Bark* granular to rough and slightly fissured; branches finely striate, pale grey-brown to dull yellowish with somewhat squarrose spinous spurs. *Leaves* trifoliolate, petiolate, somewhat fasciculate to crowded on spurs; petiole semiterete, canaliculate and occasionally margined above, (5–)9(–16) mm long; leaflets sessile, subcoriaceous, concolorous, olive-green above, slightly paler below, often laccate, occasionally glaucescent, hypostomatous, glabrous; lamina oblanceolate, spatulate to narrowly obovate, base cuneate, apex emarginate, retuse, rounded or subacute, often mucronulate; margin entire, slightly revolute; venation kladodromous, midrib slightly prominent above and below, other veins impressed, usually obscure; terminal leaflets (10–)23(–40) × (6–)10(–20) mm, lateral leaflets (8–)16(–30)

× (4–)8(–15) mm. *Panicles* up to 50 mm long, axillary and terminal, males much branched, multiflorous, females less branched, drupes crowded, branches furfuraceous. *Flowers* normal. *Drupe* oblate, ellipsoid, glabrous, shiny, chestnut-brown 3,5 × 2,3 to 6,8 × 4,7 mm. Fig. 27.

Ranges from near Queenstown in the north-eastern Cape through the eastern, southern and western Cape interior to near Alexander Bay in Namaqualand. It is especially plentiful in the lower Great Karoo becoming scarcer westwards until it is rare in the north-western Cape. There is a single record from Oribi Gorge near Port Shepstone in Natal. Flowering recorded in May and July to October. Map 37.

Rhus longispina is recognized by its habit of forming dense, rounded shrubs with pale spinous branches, by the oblanceolate to narrowly obovate smooth leaflets, usually crowded on the pale spurs and by the sweetly scented much-branched terminal male panicles.

The name *R. longispina* has erroneously been attributed to *R. pterota* (no. 70), another spinous species which is sympatric in the Uitenhage area, and from which it differs in habit, venation and drupe—see *R. pterota* for details of the differences.

Vouchers: *Cooper* 2 (BM, E, K, TCD, W); *Dahlstrand* 1492 (PRE, STE); *W. Marais* 436 (GRA, K, PRE); *Schlechter* 5725 (BM, BOL, COI, G, GRA, K, S, W, WU, Z); *H.C. Taylor* 8021 (K, PRE, SRGH).

43. *Rhus burchellii* *Sond. ex Engl.* in A. & C. DC., *Monographiae phanerogamarum* 4: 412 (1883); Diels: 574, 633, t. 7G (1898); Schonl.: 238 (1911). Type: Northern Cape, Confluence of Vaal and Orange Rivers, *Burchell* 1722 (K, holo.).

Toxicodendron burchellii (Sond.) Kuntze: 153 (1891). *R. undulata* Jacq. var. *burchellii* (Sond. ex Engl.) Schonl.: 63, 64, t. p. 62 (1930); Merxm. & A. Schreib.: 14 (1968).

R. burchellii var. *tricrenata* Engl.: 412 (1883); Schonl.: 238 (1911). *R. undulata* Jacq. var. *tricrenata* (Engl.) R. Fernandes: 133 (1967). Type: Lesotho, *Cooper* 2172 (K, holo.).

R. rangeana Engl.: 205, t. 101 A–E (1921). Type: Namibia, rocky plain between Aus, Kubub and Kuibis, specimen not indicated, (B?); vide Schonl.: 64 (1930) et Merxm. & A. Schreib.: 14 (1968).

Much-branched, evergreen, sometimes thorny, divaricate shrub up to 5 m high. *Bark* granular, grey-brown; branches and branchlets squarrose,



FIGURE 27. — *Rhus longispina*: 1, branch with male inflorescences, $\times 0.8$ (Bolus 660); 2, fruiting branch, $\times 0.8$; 3, male flower, $\times 12$ (Brink 469); 4, drupes, $\times 3,3$ (2 & 4, Moffett 2625); 5, habit and habitat. Artist: E. Ward-Hilhorst.

prominently lenticellate. *Leaves* trifoliolate, petiole, crowded on spurs; petiole semiterete, canalliculate above, (4–)8(–11) mm long; leaflets sessile, subcoriaceous, concolorous, olive-green, laccate, glabrous, hypostomatous; lamina cuneate, obtriangular to obcordate, base cuneate to attenuate, apex emarginate, mucronulate, rarely paucicrenulate; margin entire; venation klado-dromous, midrib slightly prominent above and below, other veins impressed, usually obscure; terminal leaflets (7–)13(–23) × (3–)7(–13) mm, lateral leaflets (5–)10(–16) × (3–)5(–10) mm. *Panicles* and flowers are similar to that of the previous species, *R. longispina*. *Drupes* also similar but slightly more compressed, 3,7 × 2,2 to 6,3 × 3,7 mm, width/thickness ratio ± 1,7 compared to ± 1,5 in *R. longispina*.

Widely distributed in the more arid central interior of southern Africa and southern Namibia. In South Africa and Lesotho it occurs in the Orange Free State, western half of Lesotho and Cape Province in an area roughly circumscribed by Kuruman, Senekal, Quthing, Cradock, Touws River, Calvinia and Pofadder. A disjunct record from near Willowmore matches this species but may rather belong to *R. glauca* (no. 41). In Namibia it ranges from near Warmbad in the south to near Maltahöhe with an isolated record a further 300 km to the north in the Brandberg. Flowering recorded in April and May. Map 38.

Rhus burchellii is a common shrub of the rocky hills of the more karroid parts of the country. The spinous spurs, laccate leaflets and ellipsoid drupes serve to separate it from the closely allied but allopatric *R. glauca* (no. 41). It is also closely related to *R. longispina* (no. 42) and differs from it by having a more open divaricate habit without dull yellowish

branches and spines, by its smaller deeply emarginate laccate leaflets and by its slightly more compressed drupes.

Vouchers: *De Winter 3332* (COI, K, M, PRE, WIND); *Edwards & Scheepers 4143* (PRE, SRGH, WAG); *Flanagan 1532* (BOL, GRA, PRE); *Hanekom 885* (K, PRE, SRGH); *Oliver & Müller 6457* (K, PRE, SRGH, WAG).

44. *Rhus pallens* Eckl. & Zeyh., *Enumeratio plantarum africae australis* 2: 147 (1836); Walp.: 552 (1842). Type: Eastern Cape Province, Uitenhage, between Coega and Zondagsrivier (Sundays River), *Ecklon & Zeyher III4* (SAM, lecto.) here designated, C!, P!, TCD!, isolecto.).

R. excisa Thunb. var. *β pallens* (Eckl. & Zeyh.) Sond.: 519 (1860); Engl.: 411 (1883); Schönl.: 64 (1930) p.p.

R. aglaeophylla Eckl. & Zeyh.: 148 (1836); Walp.: 552 (1842). Type: Eastern Cape Province, Albany, Bothasberg and Vischrivier (Fish River), *Ecklon & Zeyher III7* (SAM, lecto.) here designated, C!, W!, isolecto.).

R. plicaeifolia Eckl. & Zeyh.: 148 (1836); Walp.: 552 (1842). Type: Eastern Cape Province, Uitenhage, near Zwartkopsrivier, Bethelsdorp and Zondagsrivier (Sundays River), *Ecklon & Zeyher III8* (S, lecto.) here designated; C!, G!, HBG!, K!, L!, M!, P!, PRE!, SAM!, TCD!, W!, isolecto.).

R. excisa Thunb. var. *γ emarginata* Sond.: 519 (1860).

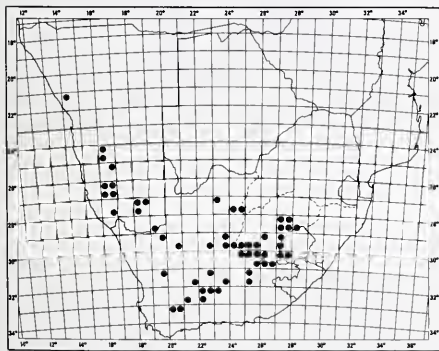
R. galpinii Engl.: 208 (1921) non Schinz. Type: North-eastern Cape, mountains near Queenstown, 1300 m, specimen not indicated; *Galpin 2142* (BOL!; GRA!) vide Schönl.: 64 (1930).

R. spatulata Eckl. & Zeyh.: 148 (1836) p.p.; Walp.: 553 (1842). Type: Eastern Cape Province, Uitenhage, Zwartkopsrivier, *Ecklon & Zeyher III9* (P!, S!, SAM!; TCD!) mixed sheets: see *R. longispina* Eckl. & Zeyh.

R. glauca sensu R. & A. Fernandes: 595 (1966) non Thunb.

Under *R. pallens* I include a heterogeneous assemblage of six different morphs based on leaf morphology. As no clear boundaries exist between these morphs and there are many intermediate specimens, I am compelled to treat them as one polymorphic species. The unifying characters are the following: habit, ribbed branchlets, pinnate venation and ellipsoid drupes. The following description is for the typical morph.

Much-branched, multistemmed, unarmed, evergreen shrub up to 3 m high. *Bark* grey-brown, granular to slightly striate; branches ascending, branchlets dark brown, ribbed. *Leaves* trifoliolate, petiole; petiole semiterete, shallowly canalliculate above, often semi-alate, (5–)11(–21) mm long; leaflets sessile, submembranous, con-

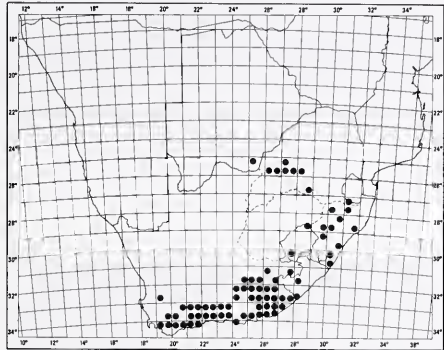


MAP 38.—*Rhus burchellii*



FIGURE 28.—*Rhus pallens*, Magaliesberg morph: 1, branch with male inflorescences, $\times 0.8$; 2, male flower, $\times 8$ (Leendertz 3216); 3, fruiting branch, $\times 0.8$; 4, drupes, $\times 2.5$ (Louw 2534); 5, habit. Artist: E. Ward-Hilhorst.

colourous, olive-green, glabrous, hypostomatous; lamina oblanceolate or spatulate to narrowly obovate, base narrowly cuneate to attenuate, apex retuse to subacute, mucronulate; margin entire, revolute, occasionally undulate towards apex; venation kladodromous to semicraspedodromous, midrib prominent above and below, secondaries at 45° , 4–6 per cm, slightly prominent above, impressed below; terminal leaflets (16–)40(–68) \times (3–)8(–18) mm, lateral leaflets (6–)29(–38) \times (3–)8(–16) mm. *Panicles* up to 80 mm long, much-branched, axillary within foliage, terminal exposed. *Flowers* normal, corolla lobes widely ovate. *Drupe* oblate, ellipsoid, glabrous, shiny, light to chestnut-brown, $3,6 \times 1,9$ to $4,4 \times 2,7$ mm.



MAP 39.—*Rhus pallens*

The typical morph (morph 1) is sometimes confused with *R. lucida* forma *lucida* (no. 40a). That species, however, has 2 or 3 lateral veins per cm and a globoid drupe.

Morph 2 has slightly shorter leaflets and a more open divaricate habit.

Morph 3 has narrower leaflets and slightly smaller drupes. It is somewhat similar to *R. fastigata* (no. 19) but the venation is clearly different.

Morph 4 has shorter and wider leaflets with emarginate, rounded or occasionally crenulate apices. The leaflets are usually lacate.

Morph 5 has wider leaflets, secondary veins slightly more prominent above and leaflets subcoriaceous.

Morph 6 has widely obovate, coriaceous leaflets up to 30 mm wide, usually glutinous when young, often undulate. It forms large shrubs or small trees up to 7 m high. Fig. 28.

Morphs 1, 2, 3 and 5 occur over a wide area from northern Natal, through southern Lesotho, Transkei, eastern and southern Cape, as far west as near Caledon in the western Cape. Morph 4 tends to be concentrated in the Graaff-Reinet, Middelburg, Queenstown and Cradock area but has also been recorded from near Ladismith in the Cape. Morph 6 has its centre of concentration in the Magaliesberg Mountains ranging from southern Botswana to Pretoria, with isolated widely disjunct records from Natal, eastern Orange Free State, eastern Province and south-western Cape near Sutherland. Flowering recorded in January, March to July and September. Map 39.

Leaves of *R. pallens* are often similar to those of the next species, *R. undulata*. The differences are described under the latter.

Vouchers: Typical species: *Brink 529* (GRA, SRGH, WAG); *Moffett 1509* (MO, NBG, PRE, STE); *Page 115* (PRE); *Thode 2525* (K, NH, PRE). Morph 2: *Dahlstrand 1478* (PRE, STE); *Dyer 60* (GRA, PRE); *Moffett 2365* (K, MO, NBG, PRE). Morph 3: *Dyer 1135* (GRA, L, PRE); *Galpin 6378* (GRA, PRE); *Moffett 3539* (NH, PRE). Morph 4: *Goldblatt 1771*

(BR, C, NBG, PRE); *Moffett 2316* (GRA, PRE); *P. Müller 656* (PRE, SRGH). Morph 5: *Balsinhas 3332* (K, PRE, SRGH); *Bayer 1443* (NU, PRE); *De Wet 3* (K, PRE, STE). Morph 6: *Leendertz 3216* (PRE); *Miller B/908* (PRE); *Olivier 1107* (NBG); *Wright, West & Acocks 9* (NH, PRE).

45. *Rhus undulata* Jacq., *Plantarum rariorum horti caesarei Schoenbrunnensis descriptiones et icones*: 52, t. 346 (1798); *Pers.*: 326 (1805); *Schult.*: 659 (1820); *DC.*: 71 (1825); *G. Don*: 74 (1832); *Eckl. & Zeyh.*: 150 (1836); *Sond.*: 518 (1860); *Engl.*: 410 (1883); *Diels*: 573, 594 (1898); *Schönl.*: 237 (1911); *Schönl.*: 62, t. p. 62 (1930); *Adamson*: 563 (1950); *R. Fernandes*: 133 (1967); *Merxm. & A. Schreib.*: 14 (1968). Type: Ex hort. Schönbrunn, *Jacquin 379* [W, lecto.! vide *R. Fernandes*: 133 (1967)].

Toxicodendron undulatum (Jacq.) Kuntze: 154 (1891). *R. undulata* var. *genuina* Schönl. forma *undulata* Schönl.: 63 (1930). *R. undulata* var. *undulata* forma *undulata*, *R. Fernandes*: 133 (1967).

R. nervosa Poir.: 264 (1806); *Desf.*: 328 (1809); *Schult.*: 660 (1820); *DC.*: 69 (1825); *G. Don*: 73 (1832). Type: ex hort. Paris, *Poiret* (P, lecto.! here designated).

R. excisa Thunb.: 216 (1818); *Schult.*: 657 (1820); *Thunb.*: 264 (1823); *DC.*: 70 (1825); *G. Don*: 74 (1832); *Eckl. & Zeyh.*: 149 (1836); *Diels*: 573 (1898); *Engl.*: 203, t. 99 H–K (1921). *R. excisa* var. *α thunbergiana* Sond.: 519 (1860) p.p.; *Engl.*: 411 (1883). *R. undulata* var. *genuina* Schönl. forma *excisa* (Thunb.) Schönl.: 63 (1930). *R. undulata* var. *undulata* forma *excisa* (Thunb.) *R. Fernandes*: 133 (1967). Type: Cape of Good Hope, *Thunberg* in *herb. Thunberg 7335*, *R. excisum* β [UPS, lecto.! vide *Sond.*: 519 (1860)].

R. celastroides Sond.: 519 (1860). *Toxicodendron celastroides* (Sond.) Kuntze: 153 (1891). *R. undulata* var. *β celastroides* (Sond.) Kuntze: 153 (1891).

troides (Sond.) Schönl.: 63 (1930); Merxm. & A. Schreib.: 14 (1968). Type: Kammass, Bechuanaland, *Zeyher 333* (S, lecto.! here designated; BM!, E, GRA!, K!, P!, PRE!, SAM!, TCD!, Z!, isolecto.).

R. vernicata Schlecht. ex Engl.: 205 (1921). *R. undulata* var. *genuina* Schönl. forma *contracta* Schönl.: 64 (1930). *R. undulata* var. *undulata* forma *contracta* (Schönl.) R. Fernandes: 133 (1967). Type: North-western Cape, F.us, *Schlechter 11434* (AMD!, BOL!, GRA!).

Aromatic, much-branched, multistemmed, evergreen shrub up to 3 m high. *Bark* grey-brown, smooth to granular; branches dark brown, divaricate, branchlets somewhat squarrose, ribbed, often ending in stiff spurs. *Leaves* trifoliolate, petiolate, odoriferous; petiole semiterete, canaliculate above, often semi-alate, (4–)12(–24) mm long; leaflets sessile, membranous, concolorous, olive-green, glutinous to laccate, amphistomatous; lamina oblanceolate to widely obovate, somewhat repand in upper half; base attenuate, apex retuse, rounded, obtuse, subacute or acute, mucronulate, sometimes plicate; margin entire to irregularly crenate in upper half and apex; venation kladodromous to semicraspedromous, midrib prominent above and below, secondary veins slightly prominent above, impressed below; terminal leaflets (6–)22(–53) × (1–)9(–18) mm, lateral leaflets (5–)15(–38) × (1–)6(–15) mm. *Panicles* up to 50 mm long, lax, much branched, minutely flowered, axillary and terminal, latter exposed. *Flowers* normal. *Drupe* obovate, ellipsoid, glabrous, shiny, dull yellow to cream, 5.5 × 3.4 to 6.4 × 4.5 mm.

Ranges from near Witputz in southern Namibia through Namaqualand and the south-western Cape as far inland as Calvinia and the Tanqua Karroo reaching to Somerset West in the south and eastwards as far as near Ladismith in the Little Karroo. Flowering recorded in April and May. Map 40.

Rhus undulata changes gradually from an unarmed, divaricate morph with fairly wide leaflets in the south-western Cape to a squarrose, multistemmed, spinous shrub with narrow leaflets in Namaqualand and southern Namibia. Isolated exceptions, such as *Schlieben 9054a* (B, PRE) with wide leaflets from near Springbok, do however occur. It is sometimes very difficult to separate this species from laccate specimens of the closely allied *R. burchellii* (no. 43) and *R. pallens* (no. 44). *R. undulata* does, however, consistently have amphistomatous leaflets, non-revolute margins and paler, slightly less compressed drupes. It is also a favoured host of the parasite *Moquinella rubra* (Loranthaceae).

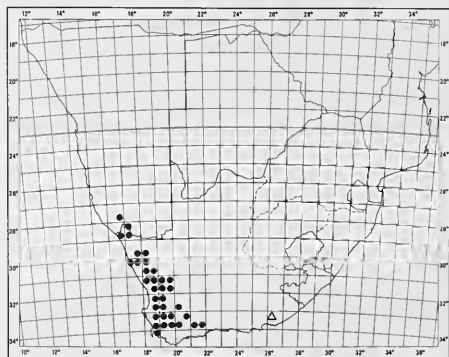
Rhus undulata has not been collected in the Cape Peninsula since Ecklon and Zeyher found it at Constantia 160 years ago, but is still to be seen at Somerset West and Stellenbosch.

Vouchers (arranged from wide to narrow leaflet morphs): *H.C. Taylor 8200* (K, PRE, STE); *Wagner 193* (NBG, PRE); *Goldblatt 1328* (BR, MO, NBG, PRE, WAG); *Thompson & Le Roux 338* (K, PRE, STE); *H.C. Taylor 8404* (K, PRE, S, STE).

46. *Rhus albomarginata* Sond. in Harv. & Sond., *Flora capensis* 1: 519 (1860); Engl.: 413 (1883); Diels: 574 (1898); Schönl.: 238 (1911); Engl.: 203 (1921); Schönl.: 59, t. p. 59 (1930); Dinter: 134 (1926) (sphalm.); Burt Davy: 503 (1932) (sphalm.). Type: Eastern Cape Province, Slaaykraal, *Burke s.n.* (K, lecto.! here designated; S!, isolecto.).

Toxicodendron albomarginatum (Sond.) Kuntze: 154 (1891).

Unarmed, divaricate, woody shrub up to 0.5 m high. *Bark* and branches light brown, smooth, minutely lenticellate, branchlets slightly compressed, angulate. *Leaves* erect, trifoliolate, petiolate; petiole margined, flattened above, midrib slightly raised in middle, relatively long, (15–)20(–35) mm long; leaflets sessile, coriaceous, glabrous, concolorous, dark green, amphistomatous; lamina oblanceolate, obtusulate or obovate, base attenuate to cuneate, apex rounded to obtuse, mucronate; margin entire, thickened, slightly revolute, frequently dull whitish; venation kladodromous, midrib prominent below, slightly prominent above, secondaries



MAP 40. — ● *Rhus undulata*
 △ *R. albomarginata*

2 or 3 per cm, impressed, other veins hidden; terminal leaflets (27–)47(–66) × (10–)16(–20) mm, lateral leaflets (21–)34(–46) × (7–)12(–18) mm. *Panicles* up to 40 mm long, sparingly branched, mostly axillary within foliage, occasionally terminal. *Flowers* glabrous, calyx lobes ovate, 1 mm long, corolla lobes ovate, 2 mm long, cream, styles separate, semipersistent. *Drupe* circular, globoid to obloid, glabrous, shiny, yellow to red while fleshy, relatively large, 6,6 × 5,7 to 7,3 × 6,8 mm, stone discoid.

Confined to a small area near Grahamstown in the eastern Cape where it grows in stony grassveld. It was collected at Slaaikraal and Sidbury in the previous century and recently near Highlands. Flowering recorded in January. Map 40.

This rare species is quite distinct on account of its habit, rigid, flattened and margined petiole, obrullate to obovate, amphistomatous leaflets with whitish margin and kladodromous venation. It appears to have no close relationship with any of our other species.

A *Drège* specimen (*s.n.* in P) from Driefontein, Zuurbergen, is possibly this species and if conspecific, extends its distribution westwards by about 100 km.

Vouchers: *Comins* 957 (GRA, K); *Moffett* 2464 (GRA, PRE); *Moffett* 3211 (MO, NBG, PRE); *Moffett* 3212 (BOL, GRA, PRE).

47. *Rhus zeyheri* Sond. in Harv. & Sond., *Flora capensis* 1: 514 (1860); Engl.: 433 (1883); Diels: 584, 639 (1898); Schonl.: 245 (1911); Schonl.: 54, t. p. 54 (1930); Burt Davy: 502 (1932). Type: Transvaal, among shrubs at Magalisberg, *Zeyher* 345 (S, holo.!; BM!, E, K!, P!, iso.).

Toxicodendron zeyheri (Sond.) Kuntze: 154 (1891).

R. glaucovirens Engl.: 432 (1883); Diels: 584 (1898); Engl.: 213 (1921). *Toxicodendron glaucovirens* (Engl.) Kuntze: 154 (1891). Type: Transvaal, Pretoria, *Rehmann* 4740 (Z, lecto.! here designated; BM!, BOL!, GRA!, K!, isolecto.).

R. zeyheri var. *parvifolia* Burt Davy: 502 (1932). Type: Transvaal, Pretoria, Fort Schanskop, *Pole Evans* 178 (K, holo!).

Multistemmed, much-branched shrub up to 2 m high, rarely a single-stemmed tree to 4 m. *Bark* and branches smooth, shiny, grey to dark reddish brown, prominently lenticellate; branchlets somewhat squarrose, light to dark brown. *Leaves* trifoliolate, petiolate; petiole semiterete, canaliculate above, (5–)15(–32) mm long; leaflets

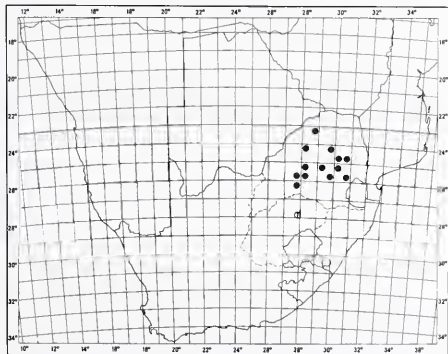
sessile, coriaceous, almost rubbery, glabrous, concolorous, glaucous, amphistomatous; lamina obovate, base cuneate, apex rounded to acute, mucronate; margin entire, slightly thickened, slightly revolute; venation semicraspedodromous, midrib prominent below, slightly prominent above, secondaries impressed above, slightly prominent below, tertiary and other veins forming a prominent impressed reticulum; terminal leaflets (9–)30(–53) × (4–)14(–27) mm, lateral leaflets (6–)22(–38) × (3–)11(–20) mm. *Panicles* sparsely branched, up to 40 mm long, axillary somewhat racemose, within foliage, terminal exposed. *Flowers* normal. *Drupe* circular to oblate, globoid to obloid, glabrous, shiny, dark brown, 5,3 × 5,0 to 6,3 × 5,5 mm. Fig. 29.

Ranges from the Blaauwberg in the northern Transvaal through the Wolkberg and other eastern Transvaal mountains between Steelpoort and Kaapse Hoop near Nelspruit, then across the centre of the province in the Belfast, Loskop Dam and Dennilton area to the Magaliesberg around Pretoria, Rustenburg and Krugersdorp and also found in the Vaalwater area of the Waterberg west of Nylstroom. Flowering recorded in October and February. Map 41.

The smooth bark and glaucous, amphistomatous, somewhat rubbery leaflets, together with the prominent reticulate tertiary venation serves to separate this species from the rest. It may, however, be confused in the herbarium with *R. laevigata* forma *cangoana* [no. 11a(ii)], a south-western Cape calciphyte which is hypostomatous.

Rhus zeyheri is generally found on dolomitic substrates but also grows on quartzites, shales and serpentinites.

Vouchers: *Chadwick* 6 (NBG, PRE); *Moffett* 2025 (MO, NBG, PRE); *Moffett* 3504 (K, PRE); *Prosser* in NBG 13028 (NBG); *Schlechter* 3626 (BM, BOL, K, PRE, SAM, W, WU, Z).



MAP 41.—*Rhus zeyheri*



EWH

FIGURE 29.—*Rhus zeyheri*: 1, branch with male inflorescence, $\times 0,8$; 2, male flower, $\times 6$ (Prosser in *NBG 13028*); 3, fruiting branch, $\times 0,8$; 4, drupe, $\times 1,6$ (Moffett 3504); 5, habit. Artist: E. Ward-Hilhorst.

48. *Rhus pendulina* Jacq., *Plantarum rariorum horti caesarei Schoenbrunnensis descriptiones et icones* 4: 449, t. 449 (1805); Willd.: 324 (1809); Schult.: 660 (1820); DC.: 70 (1825); G. Don: 73 (1832); Diels: 588, 640 (1898) p.p.; Moffett: 24 (1984). Type: ex hort. Schönbrunn, *Jacquin* (M, lecto.! here designated).

R. viminalis Vahl var. *pendulina* (Jacq.) Sond.: 515 (1860); Engl.: 442 (1883); Engl.: 215 (1921).

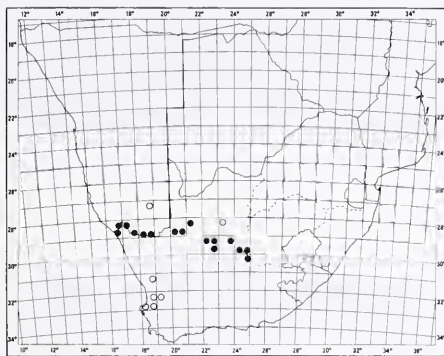
R. viminalis sensu auct., non Ait. nec Vahl; Sond.: 515 (1860); Diels: 588, 640 (1898) p.p.; Schonl.: 247 (1911); Schonl.: 74, t. p. 75 (1930); Merxm. & A. Schreib.: 14 (1968).

Single-stemmed, much-branched, semi-evergreen tree up to 10 m high, rarely a multistemmed shrub. *Stem* often spinous, bark grey-brown, relatively smooth becoming rough and scaly when old; branches pendulous, branchlets light brown. *Leaves* trifoliolate, petiolate; petiole slender, semiterete, canaliculate above, (9–)20(–41) mm long; leaflets sessile, membranous, glabrous, concolorous, dull green above, very slightly paler below, amphistomatous; lamina lanceolate, base cuneate, apex subacute to acute, mucronulate; margin entire, sometimes ciliate; venation kladodromous to brochidodromous, midrib prominent above and below, secondaries impressed, others obscure; terminal leaflets (21–)58(–95) × (6–)11(–15) mm, lateral leaflets (16–)41(–71) × (5–)10(–4) mm. *Panicles* up to 80 mm long, pubescent, axillary and terminal, exposed, males much branched, flowers crowded, females less ramified. *Flowers* normal but very small, calyx lobes pubescent. *Drupe* circular, ellipsoid, glabrous, reddish, drying black, 4,0 × 2,7 to 4,8 × 3,2 mm.

Rhus pendulina occurs on the banks of the Orange River and also extends a short distance up some of its tributaries between the P.K. le Roux Dam near Lückhoff in the Orange Free State and its mouth at Oranjemund, Namibia. It is also found scattered along the Berg and Olifants River in the western Cape. Flowering recorded in February and March. Map 42.

This species is recognized by its pale, relatively smooth bark, flaky when old, occasional spines on the trunk, concolorous, amphistomatous leaflets and by the widely ellipsoid drupes which dry black. It has become a popular ornamental tree for streets, parks and gardens.

It is uncertain whether the western Cape specimens are natural occurrences or the progeny of earlier introductions.



MAP 42. — ● *Rhus pendulina*, natural distribution
○ Introduced ?

Vouchers: *Giess 12951* (K, M, S, WIND); *Lindeberg 1165* (KMG); *Lumley 143* (NBG); *Pearson 3112* (K, NBG, NH, SAM).

49. *Rhus rimosa* Eckl. & Zeyh., *Enumeratio plantarum africae australis* 2: 150 (1836); Walp.: 553 (1842). Type: Cape Province, Clanwilliam, Heerenlogement, *Ecklon & Zeyher 1134* (SAM (sheet 2577), lecto.! here designated; C!, G!, K!, L!, S!, W!, Z!, isolecto.).

R. rigida Mill. var. *florida* Sond.: 520 (1860). Type: Cape Province, Giftberg, *Drège 6797* (P, lecto.! here designated; L!, W!, isolecto.).

R. rigida sensu auct., non Mill.; Sond.: 520 (1860); Engl.: 416 (1883); Diels: 576, 633, 634, t. 7L (1898); Engl.: 204 (1921); Schonl.: 89, t. p. 90 (1930).

R. triplex E. Mey.: 216 (1843) nom. nud. *Drège s.n.* (K!, PRE!).

Erect, rigid shrub up to 3 m high. *Bark* grey-brown, granular; branches relatively straight, branchlets ascending, reddish brown, shallowly ribbed. *Leaves* trifoliolate, petiolate; petiole semiterete, often margined, canaliculate, (6–)10(–13) mm long; leaflets sessile, rigidly coriaceous, glabrous, often glutinous when young, concolorous, olive-green, amphistomatous; lamina oblanceolate, occasionally almost linear, apex subacute to acute, mucronulate, sometimes grossly dentate; margin entire, slightly thickened, slightly revolute, whitish; venation hypodromous, midrib prominent below, slightly promi-

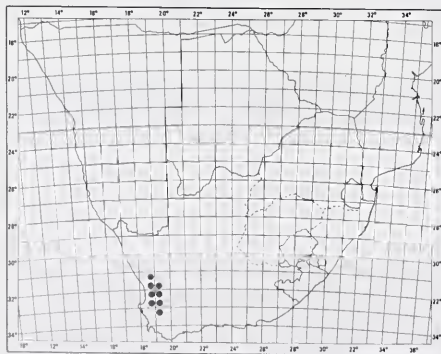
ment above; terminal leaflets (21–)38(–62) × (4–)7(–12) mm, lateral leaflets (21–)29(–44) × (3–)6(–12) mm. *Panicles* glabrous, up to 60 mm long, mostly axillary within foliage, rarely terminal, exposed. *Flowers* normal, calyx lobes deeply segmented, corolla lobes oblong. *Drupe* elliptic, ellipsoid, glabrous, shiny, dull yellowish light brown, tricuspidate, 4,4 mm high × 3,5 mm thick to 4,5 × 4,0 mm.

Centred in the Cederberg mountains of the western Cape Province, this species ranges from the Gifberg near Vanrhynsdorp to the mountains behind Porterville and Saron in the south. Flowering recorded in September and October. Map 43.

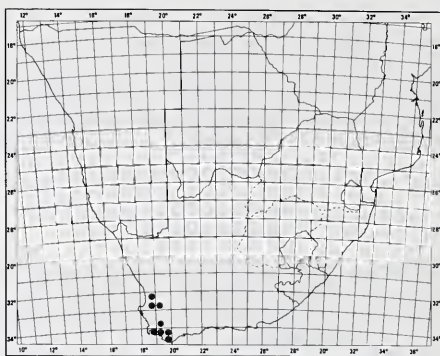
Rhus rimosa is a distinct shrub characterized by its erect habit, stiff narrow amphistomatous leaflets with hypohydromous venation and prominent tricuspidate drupes. The specific epithet probably refers to the transverse cracks which develop in the bark of dried specimens.

Vouchers: *Compton 21872* (NBG); *Maguire 1870* (NBG); *Moffett 1660* (K, MO, NBG, PRE, STE); *Schlechter 10798* (BM, BOL, BR, COI, E, GRA, K, L, P, PRE, S, W, WAG, Z); *Schlieben & Breda 9885* (BR, K, M, PRE, SRGH, STE).

50. *Rhus cuneifolia* L. f., *Supplementum plantarum*: 183 (1781); Thunb.: 52 (1794); Willd.: 1482 (1798); Pers.: 325 (1805); Thunb.: 222 (1818); Schult.: 654 (1820); Thunb.: 267 (1823); DC.: 71 (1825); G. Don: 75 (1832); Eckl. & Zeyh.: 150 (1836); Sond.: 512 (1860); Engl.: 419 (1883); Diels: 576, t. 8A–C (1898); Engl.: 205, t. 100 A–C (1921); Schönl.: III, t. p. 112 (1930). Type: Cape of Good Hope, *Thunberg* in *herb. Thunberg 7323* (UPS, lecto.! here designated).



MAP 43.—*Rhus rimosa*



MAP 44.—*Rhus cuneifolia*

Toxicodendron cuneifolium (Thunb.) Kuntze: 153 (1891).
Searsia cuneifolia (L. f.) F.A. Barkley: 54 (1965).

Dwarf, xerophytic shrublet. *Branches* erect, dark grey-brown, branchlets generally acute ascending, puberulous. *Leaves* trifoliolate, sessile to subsessile, petiole rarely up to 4 mm long; leaflets sessile, rigidly coriaceous, glabrous, occasionally glutinous when young, dark green, hypostomatous; lamina obrullate, base cuneate, apex acute, mucronate; margin entire in lower $\frac{2}{3}$ and grossly dentate in upper $\frac{1}{3}$ of lamina; venation simple craspedodromous, midrib prominent below, slightly prominent above, secondaries slightly prominent below, impressed above, other veins obscure; terminal leaflets (15–)23(–39) × (7–)13(–20) mm, lateral leaflets (11–)18(–30) × (4–)10(–14) mm. *Panicles* up to 50 mm long, puberulous, sparsely branched, often almost racemose, mostly axillary, rarely terminal. *Flowers* normal. *Drupe* circular to slightly asymmetric, obloid to ellipsoid, glabrous, shiny, light brown, tricuspidate, 5,5 × 5,2 to 7,5 × 6,2 mm.

Mainly concentrated in the mountains between Somerset West, Stanford, Caledon, McGregor and Villiersdorp in the south-western Cape, but isolated records extend its range northwards as far as Piketberg and the Cederberg near Clanwilliam. Flowering recorded in September and October. Map 44.

The rigidly coriaceous, sessile to subsessile obrullate leaflets with acute, mucronate dentation and simple craspedodromous venation plus the tricuspid drupes readily identify this species. Intermediates between it and the closely

allied next species do occur, however, and may lead to confusion—see *R. scytophylla* (no. 51).

Vouchers: *Guthrie in NBG 13317* (NBG); *MacOwan 718* (BM, BOL, G, K, P, PRE, SAM, UPS, W); *Moffett 3250* (BOL, NBG, PRE, STE); *Moffett 3251* (K, MO, NBG, PRE, STE); *Walgate 343* (NBG).

51. *Rhus scytophylla* Eckl. & Zeyh., *Enumeratio plantarum africanae australis* 2: 150 (1836); Walp.: 553 (1842); Sond.: 517 (1860); Engl.: 412 (1883); Diels: 574, t. 8D (1898); Engl.: 203, t. 100 D (1921); Schonl.: 60, t. p. 60 (1930); Adamson: 565 (1950). Type: Cape Province, between Sir Lowry's Pass and Palmiet River, Grietjiesgat, *Ecklon & Zeyher I130* (S, lecto.! (sheet 1), here designated; C!, G!, HBG!, K!, L!, LD!, M!, P!, PRE!, SAM!, W!), isolecto.).

Toxicodendron scytophyllum (Eckl. & Zeyh.) Kuntze: 154 (1891).

Two varieties are distinguished:

51a. var. *scytophylla*.

R. mucronata Thunb. var. *sparsiflora* Eckl. & Zeyh.: 150 (1836) nom. nud. Cape Province, Tulbaghsberge, *Ecklon & Zeyher I129* p.p. (P!, S!, SAM!).

R. africana Mill. var. *macrophylla* Sond.: 518 (1860); Engl.: 414 (1883). Type: Cape Province, Clanwilliam, near Brackfontein, *Ecklon & Zeyher I129* p.p. (SAM, lecto.! here designated; P!, S!, isolecto.).

R. africana sensu auct., non Mill (1768). Sond.: 517 (1860); Engl.: 414 (1883); Diels: 574 (1898); Engl.: 203 (1921); Schonl.: 58 (1930).

Rigid, xerophytic, dwarf shrublet or shrub up to 2 m high. *Branches* somewhat divaricate, pale grey-brown, shallowly ribbed. *Leaves* trifoliolate, petiolate; petiole stout, semiterete, margined, canaliculate above, (4–)10(–16) mm long; leaflets sessile, rigidly coriaceous, glabrous, concolorous, olive-green, hypostomatous, lamina narrowly to widely obovate, occasionally obtusulate, base cuneate, apex retuse to rounded, rarely subacute, often mucronulate; margin entire, revolute, often dentate towards apex in young shoots; venation simple craspedodromous, terminal leaflets (22–)41(–61) × (11–)20(–30) mm, lateral leaflets (17–)35(–51) × (8–)15(–22) mm. *Panicles* puberulous, shortly branched,

males up to 100 mm long, females up to 40 mm long, mostly axillary, also terminal, exposed. *Flowers* normal but calyx and corolla ruby-red, contrasting with golden yellow anthers in males. *Drupe* elliptic, asymmetric, obovoid to ellipsoid, tricuspidate, 4,3 mm high × 4,0 mm thick to 7,4 × 5,5 mm.

A species of the western Cape mountains ranging from the escarpment near Nieuwoudtville in the north through the Gifberg, Cederberg, Piketberg, Hex River Mountains, Drakenstein Mountains, Hottentots Holland Mountains and Kogelberg in the south and eastwards as far as the Caledon and Greyton Districts. Flowering recorded in June and July. Map 45.

In the south, this species has been confused with *R. lucida* forma *elliptica* (no. 40c). That taxon does, however, not have the distinctive ruby-red flowers and tricuspidate drupes. Leaflets from coppice shoots are often dentate and may be confused with the next taxon, var. *dentata*, or even with *R. cuneifolia* (no. 50).

Seldom more than 1 m high in its type area (Kogelberg and Hottentots Holland), it reaches its largest size in the north.

Vouchers: *Barker 9205* (NBG); *Bayliss 6572* (BR, K, NBG, WAG, Z); *Maguire 1748* (NBG); *Moffett 1536* (MO, PRE, STE); *Moffett 2752* (PRE, STE).

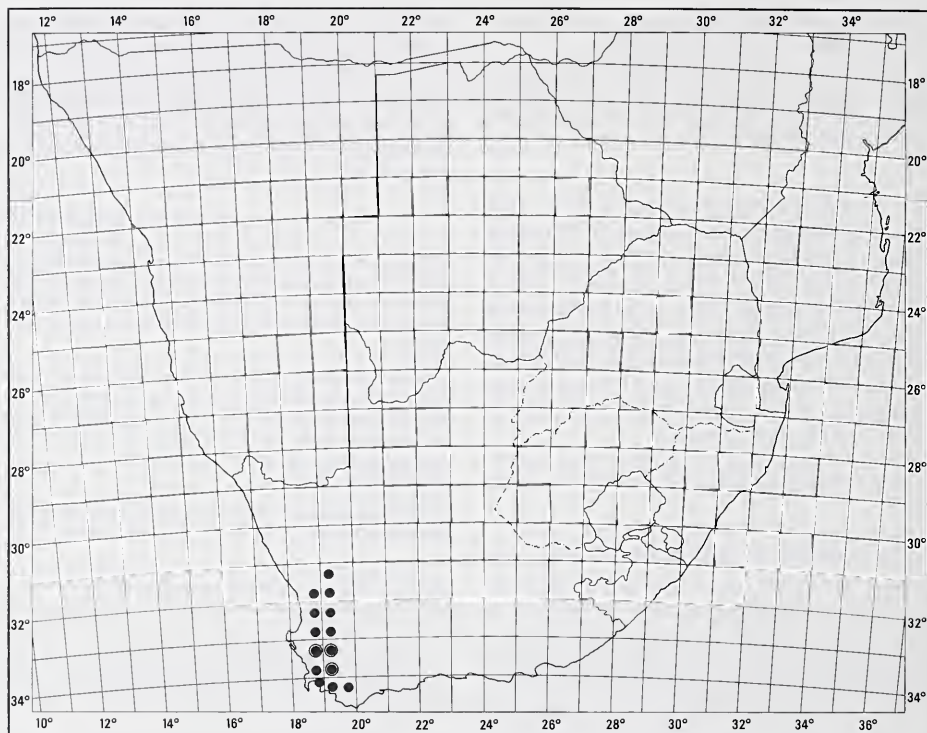
51b. var. *dentata* Moffett, var. nov. a var. *scytophylla* foliolis minoribus dentatis ad serratis differt.

Type: Cape Province, Ceres District, Modder Riviers Kloof, Agterwitsenberg, 23.10.1976, *Van Jaarsveld 1538* (NBG).

Differs from var. *scytophylla* by its smaller, dentate to serrate leaflets. *Petiole* (3–)6(–12) mm long; terminal leaflets (15–)22(–29) × (7–)12(–18) mm, lateral leaflets (12–)16(–23) × (6–)9(–14) mm. *Panicles* and *drupe*s as for var. *scytophylla*, but slightly shorter and smaller.

Occurs mainly in the mountains north of Ceres and Tulbagh in the area known as Agterwitsenberg. There are also isolated records from the Bains Kloof and Hex River Mountains in the Worcester District. Flowering recorded in July and October. Map 45.

This taxon appears to be a neotenic morph of the sympatric var. *scytophylla*, retaining the dentation of the juvenile leaves unto sexual maturity. It may easily be confused with herbarium material of the closely related *R. cuneifolia* (no. 50). The latter species, however, is a virgate shrublet and generally has sessile to subsessile leaves with more acute teeth.



MAP 45.—● *Rhus scytophylla* var. *scytophylla*
○ *R. scytophylla* var. *dentata*

Vouchers: *Ecklon* in *SAM 3111* (*Eckl. & Zeyh. 1129* p.p.) (*SAM*); *Esterhuysen 10892* (*BOL*); *Mauve 4564* (*PRE*); *Moffett 2754* (*PRE, STE*); *H.C. Taylor 9763* (*PRE, STE*).

52. *Rhus discolor* *E. Mey. ex Sond.* in *Harv. & Sond., Flora capensis* 1: 507 (1860); *Engl.*: 447 (1883); *Diels*: 590, 614 (1898); *Sim*: 194 (1907); *Schönl.*: 249 (1911); *Engl.*: 217 (1921); *Schönl.*: 91, t. p. 92, 93 (1930); *Burt Davy*: 509 (1932); *Compton*: 330 (1976). Type: Eastern Cape Province, Katberg, 10.11.1832, *Drège 3449* (*S*, lecto.! here designated; *P!*, isolecto.).

Toxicodendron discolor (*E. Mey.*) *Kuntze*: 153 (1891). *R. discolor* forma *typica* *Schönl.*: 95 (1930). *R. discolor* var. *discolor*, *R. Fernandes*: 126 (1967).

R. rufescens *Eckl. & Zeyh.*: 144 (1836) non *Hamilton* nom. illeg. Type: Eastern Cape Province, Winterberg and Chumi-

berg, *Ecklon & Zeyher 1093* (*C!*, *L!*, *M!*, *S!*, *SAM!*, *TCD!*, *W!*).

R. grandifolia *Engl.*: 434 (1883); *Diels*: 584 (1898); *Engl.*: 215 (1921). *R. discolor* forma *grandifolia* (*Engl.*) *Schönl.*: 95 (1930); *Burt Davy*: 509 (1932); *R. Fernandes*: 127 (1967). Type: Natal, Port Natal, *Gueinzus 278* (*W*, lecto.! here designated).

R. villosissima *Engl.*: 447 (1883); *Diels*: 591 (1898); *Engl.*: 217 (1921). *Toxicodendron villosissimum* (*Engl.*) *Kuntze*: 154 (1891). *R. discolor* forma *villosissima* (*Engl.*) *Schönl.*: 95 (1930); *Burt Davy*: 510 (1932). Type: Transvaal, Houtbosch, *Rehmann 5557* (*Z*, lecto.! here designated; *BR!*, *GRA!*, *K!*, *SAM!*, isolecto.).

R. discolor var. *β paucinervia* *Engl.*: 448 (1883); *Burt Davy*: 509 (1932); *R. Fernandes*: 127 (1967). Type: Natal, Faku's territory, *Gerrard & McKen 1403* (*K*, lecto.! vide *R. Fernandes*: 127 (1967); *BM!*, *TCD!*, *W!*, isolecto.).

R. discolor var. *brevifolia* *Engl.*: 448 (1883). Type: Natal, Drakensberg, *Rehmann 6941* (*Z*, lecto.! here designated).

R. discolor forma *latifolia* Schonl.: 95 (1930). Type: Lesotho, Leribe, Dieterlen 29 (K, lecto. here designated; B!, C!, GRA!, P!, PRE!, SAM!, Z!, isolecto.).

R. discolor var. *villosissima* forma *intermedia* Burt Davy: 510 (1932). Type: Transvaal, near Lydenburg, Wilms 250 (K, holo.; BM!, E, L!, M!, P!, PRE!, W!, iso.).

Virgate to branched suffrutex, up to 1 m high. Branches lanuginate to pubescent, rarely glabrous, shallowly ribbed. Leaves trifoliolate, hairy, petiolate; petiole semiterete, flattened above, (2–)11(–25) mm long; leaflets sessile, subcoriaceous, discolorous, greyish green and thinly sericeous to strigose above, greyish white to cream or occasionally pale greyish green, and lanate, lumbricate below, hypostomatous; lamina broadly linear, oblanceolate, narrowly elliptic or obovate, base cuneate, apex subacute to obtuse, rarely rounded, mucronulate; margin entire, revolute, rarely grossly dentate; venation simple to semicraspedodromous, midrib and secondaries prominent below, slightly prominent above, tertiaries impressed, reticulate above; terminal leaflets (18–)82(–131) × (4–)18(–35) mm, lateral leaflets (11–)63(–103) × (2–)12(–22) mm. Panicles much branched, pubescent, axillary and terminal, usually crowded towards branch ends, males up to 140 mm long, often glomerulate, exposed. Flowers normal, with pedicel and calyx pubescent, styles persistent. Drupe cylindrical to obovate, globoid, glabrous, shiny, dull yellowish brown, 3,6 × 3,0 to 5,0 × 4,2 mm.

Occurs over a wide area of the moister summer rainfall grasslands of the subcontinent in an area roughly circumscribed by Pietersburg, Pilgrim's Rest, Mbabane, Eshowe, then along the coast to near Komgha, then inland to Hogsback and Katberg, Lady Grey, Senekal, Potchefstroom and Koster. Flowering recorded from November to April. Map 46.

With its narrow, revolute leaflets, prominently pinnately veined below, the pyrophytic *R. discolor* is a distinct species. It has been confused with broader leaved morphs of *R. rosmarinifolia* (no. 55) but that species is allopatric and confined to quartzitic substrates in the Cape.

A morph with wider, non-revolute and sometimes dentate leaflets, usually creamy, lanate below, occurs sporadically and may be taken in the herbarium for *R. tomentosa* (no. 58). The latter is, however, never suffrutescent nor found in grassland.

Unburnt plants become ramified and shrubby with smaller leaflets. This species apparently hybridizes regularly, espe-

cially in the Drakensberg and also sometimes exhibits abnormalities such as hermaphroditism and more than three leaflets.

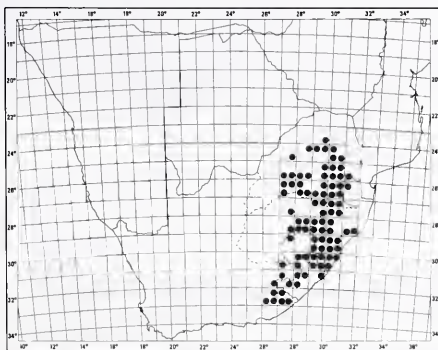
Vouchers: Flanagan 1421 (G, K, SAM, STE, UPS, W, Z); Moffett 1904 (K, MO, NBG, PRE, UNIN, WAG); Moffett 2200 (K, MO, NBG, PRE); Schlechter 3737 (BM, BOL, COI, G, GRA, K, PRE, W, Z); Wood 742 (BM, BOL, K, SAM).

53. *Rhus harveyi* Moffett, sp. nov. Habitu, inflorescentia, flore et fructu *R. discolori* E. Mey. ex Sond. similis, sed ramis venisque pagina inferiore foliolorum fulvis, foliolis glaberrimis vel scabrellis, supra in sicco lampro-brunneis, apicibus plerumque acuminatis differt.

Type: Natal, Zululand, Gerrard & McKen 1406 (TCD, holo.; BM!, K!, W!, iso.).

R. hirta Harv. ms.; Engl.: 425 (1883) ut syn. *R. tridentata* Sond.; Schonl.: 26 (1930) ut syn. *R. fraseri* Schonl., non Sudw. (1892).

Virgate or branched suffrutex, up to 1 m high. Branches glabrous or villous/strigose, fulvous. Leaves trifoliolate, glabrous or hairy, petiolate; petiole semiterete, shallowly concave above (2–)24(–76) mm long; leaflets sessile, coriaceous, discolorous, dark green above, drying shiny brown, pale green below, glabrous or hairy, strigose above, strigose and villous below, hypostomatous; lamina widely oblanceolate to obovate, base cuneate, apex subacute to acuminate, mucronate; margin entire or ciliate, slightly revolute, slightly thickened, whitish; venation semi-



MAP 46.—*Rhus discolor*



EWH 1985

FIGURE 30.—*Rhus harveyi*: 1, fruiting branch, $\times 0,8$; 2, branch with male inflorescence, $\times 0,8$; 3, male flower, $\times 6,6$ (2 & 3, Moffett 3040); 4, drupe, $\times 2,5$ (1 & 4, Moffett 3038); 5, habit and habitat. Artist: E. Ward-Hilhorst.

craspedodromous to brochidodromous, midrib and secondaries prominent above and below, tertiaries and others prominently reticulate above; terminal leaflets (19-)55(-89) × (10-)27(-61) mm, lateral leaflets (11-)42 (-74) × (5-)14 (-25) mm. *Panicles* and flowers glabrous or hairy, otherwise together with drupes, as for *R. discolor* (no. 52). *Drupes* ± 5-6 mm diameter. Fig. 30.

Limited to the area in and around the Itala Nature Reserve near Louwsburg in northern Natal and to near Mbabane in Swaziland. Flowering recorded in January. Map 47.

This distinct species differs from its closest ally, *R. discolor* (no. 52), as follows: branches and lower veins of leaflets tawny, leaflets glabrous or scabrid, upper surface shiny, brown when dry, apices often acuminate and venation usually somewhat brochidodromous.

Rhus harveyi grows in grassveld among sandstone rocks and like *R. discolor* also becomes branched and shrubby if not burnt.

Vouchers: *Burt Davy 2795* (PRE); *Compton 25287* (NBG, PRE); *Moffett 3040* (NBG, N U, PRE); *Moffett 3043* (K, MO, NH, PRE); *Moffett 3049* (PRE).

54. *Rhus kirkii* Oliv. in Flora of tropical Africa 1: 439 (1868); Engl.: 426 (1883); Engl.: 211 (1921); Meikle: 108 (1954); Van der Veken: 30 (1960); White: 213 (1962); R. & A. Fernandes: 700 (1965c); R. & A. Fernandes: 594 (1966). Type: Zimbabwe, near Victoria Falls, *Kirk* (K, holo.!).

Toxicodendron kirkii (Oliv.) Kuntze: 154 (1891).

R. welwitschii Engl.: 428 (1883). Type: Angola, *Welwitsch 4426* (G-DC, holo.!, LISU!, PRE! fragment, iso.).

R. welwitschii var. *angustifoliolata* Bak. f.: 429 (1899). Type: Zimbabwe, Bulawayo, *Rand 97* (BM, holo.!).

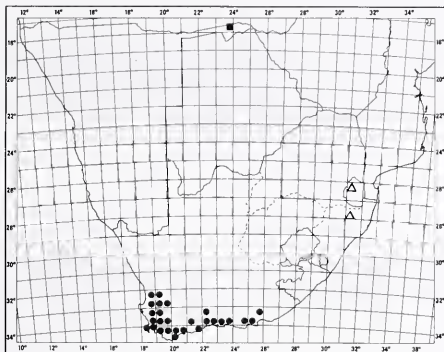
R. polyneura Engl. & Gilg: 288 (1903); Meikle: 102 (1954); Van der Veken: 30 (1960); White: 213 (1962). Type: Angola, *Baum 638* (K!).

R. polyneura var. *hylophila* Engl. & Gilg: 289 (1903); Engl.: 213 (1921). Type: Angola, *Baum 638a* (Gl!).

R. eylesii Hutch.: 495 (1946). Type: Zimbabwe, Salisbury District (Harare), *Eyles 2042* (K, holo.!, PRE!, SRGH!, iso.).

R. discolor sensu Suesseng.: 109 (1951) non E. Mey. ex Sond.

Suffrutescent shrublet, usually between 0,3 and 1 m high. *Branches* glabrous or hairy. *Leaves* trifoliate, glabrous or hairy, petiolate; petiole



MAP 47.— △ *Rhus harveyi*
■ *R. kirkii*
● *R. rosmarinifolia*

semiterete, broadly canaliculate and margined above, (5-)10(-40) mm long; leaflets sessile, coriaceous, discolorous, olive-green to brownish above, light brown to ochraceous below, glabrous or thinly hairy above, glabrous, glabrescent to densely lanate-villous below; lamina elliptic to widely elliptic or obovate to widely obovate, base cuneate, sometimes attenuate, apex subacute to acute, occasionally acuminate, mucronulate; margin entire, slightly revolute; venation simple to semicraspedodromous, midrib and secondaries prominent above and below, tertiaries forming prominent reticulation above; terminal leaflets (50-)80(-120) × (16-)33(-55) mm, lateral leaflets (30-)55(-95) × (13-)24(-40) mm. *Panicles* glabrous or hairy, axillary and terminal, axis up to 220 mm long, flowers glomerulate on short widely spaced branches. *Flowers* normal. *Drupe* oblate, globoid to obloid, glabrous, shiny, cinnamon-brown, 5-7 mm in diameter.

This Central African species is known in our area from a single collection made 61 km west of Katima Mulilo on the Caprivi-Zambian border. It occurs in the Congo, Angola, Zambia and Zimbabwe. Flowering recorded in February in our area. Map 47.

Rhus kirkii is a variable species which may usually be found growing in deep sand in grassland openings in mainly *Brachystegia* woodland.

Vouchers: *De Winter 9209* (K, PRE); *Milne-Redhead 2575* (K, PRE) from Zambia; *Gilges 643* (K, PRE) from Zambia.



EWH 1989

FIGURE 31.—*Rhus rosmarinifolia*: 1, branch with hairy drupes, $\times 0,8$ (Moffett 2840); 2, branch with glabrous drupes, $\times 0,8$ (Moffett 2792); 3 & 4, coppice shoots, $\times 0,8$ (Moffett 1551). Artist: E. Ward-Hilhorst.

55. *Rhus rosmarinifolia* Vahl, Symbolae botanicae 3: 50 (1794); Willd.: 1484 (1798); Thunb.: 26 (1803); Pers.: 325 (1805); Thunb.: 212 (1818); Schult.: 658 (1820); Thunb.: 262 (1823); DC.: 71 (1825); G. Don: 72 (1832); Sond.: 506 (1860); Engl.: 404 (1883); Diels: 570, 592, 617, t. 4E (1898); Schonl.: 235 (1911); Engl.: 199, t. 95 E, F (1921); Schonl.: 104, t. p. 105 (1930); Adamson: 562 (1950); R. Fernandes: 132 (1967). Type: Locality unknown, ex herb. Hofman-Bang e coll. Vahl, *Bulow* (C, lecto.! here designated; FI, ? isolecto.).

Toxicodendron rosmarinifolium (Vahl) Kuntze: 154 (1891). *R. rosmarinifolia* var. *typica* Schonl.: 106 (1930). *Searsia rosmarinifolia* (Vahl) F.A. Barkley: 53 (1965). *R. rosmarinifolia* var. *rosmarinifolia*, R. Fernandes: 132 (1967).

R. rosmarinifolia var. *α capensis* Eckl. & Zeyh.: 143 (1836); Walp.: 551 (1842). Type: Cape Province, Cape Town, *Ecklon 690* (S, lecto.! here designated; Cl, K1, SAM!, TUB!, isolecto.).

R. rosmarinifolia var. *β uitenhagensis* Eckl. & Zeyh.: 143 (1836); Walp.: 551 (1842). Type: Eastern Cape Province, Uitenhage District, Zuurberg and Van Stadens, *Ecklon & Zeyher 1088* p.p. (BOL, lecto.! here designated; S!, isolecto.).

R. rosmarinifolia var. *γ caledonia* Eckl. & Zeyh.: 143 (1836); Walp.: 551 (1842). Type: Cape Province, Genadendal, *Ecklon & Zeyher 1088* p.p. (S, lecto.! here designated; BOL!, G!, GRA!, K!, L!, M!, SAM!, STE!, W!, isolecto.).

R. rosmarinifolia var. *δ swellendamensis* Eckl. & Zeyh.: 143 (1836); Walp.: 551 (1842); R. Fernandes: 132 (1967). *R. rosmarinifolia* var. *brevifolia* Schonl.: 107 (1930). Type: Cape Province, Rivier Zonde Einde (Swellendam), *Ecklon & Zeyher 1088*. Non vidi.

R. stenophylla Eckl. & Zeyh. var. *brevifolia* Sond.: 507 (1860). Type: Eastern Cape Province, Van Stadensberg, *Zeyher 2228* (S, lecto.! here designated; TCD!, isolecto.).

R. macrocarpa Engl.: 449 (1883); Diels: 591, 592, t. 4D (1898); Engl.: 199, t. 95D (1921); Schonl.: 107 (1930). Type: Cape Province, Riversdale, Zoetmelks River, 21.II.1814, *Burchell 6758* (K, lecto.! here designated).

Ericoid, virgate or branched shrublet to 1 m high. Branches glabrous, rarely puberulous, occasionally arched. Leaves trifoliolate, petiolate; petiole semiterete, flat or shallowly concave above, (1–)4(–10) mm long; leaflets straight or curved, subcoriaceous to rigidly coriaceous, discolorous, glabrous or thinly pubescent and greyish green above, lanate, lubricate and white below, hypostomatous; lamina acicular or widely linear to narrowly oblanceolate, apex mucronu-

late; margin entire, strongly revolute, sometimes grossly pauciserrate in upper half; midrib prominent below, impressed above, venation when visible, simple craspedodromous to reticulodromous, secondaries and tertiaries slightly prominent above; terminal leaflets (12–)30(–57) × (1–)5(–11) mm, lateral leaflets (8–)21(–40) × (1–)3(–6) mm. Panicles glabrous or thinly pubescent, axillary and terminal, exposed, males up to 60 mm long, females reduced with few flowers. Flowers normal. Drupe obovate, obloid to ellipsoid, fulvous, villous-tomentose to ferruginous glabrous, large, 7,3 × 4,6 to 9,4 × 7,4 mm. Fig. 31.

Occurs in mountain fynbos of the western, southern and eastern Cape ranging from Pakhuis Pass near Clanwilliam in the Cederberg southwards to the Cape Peninsula and then eastwards as far as the Suurburg north of Port Elizabeth. Flowering recorded between May and August. Map 47.

Rhus rosmarinifolia, which favours the more clayey, gravelly substrates of the fynbos, occurs in a bewildering number of morphs. The western Cape specimens generally have needle-like to linear leaflets and hairy fruit while those in the eastern Cape have more flattened leaflets and smooth fruit. However, needle-like leaflets and smooth fruits as well as flat leaflets and hairy fruits, plus other intermediates occur throughout the whole area, making meaningful separation into different taxa virtually impossible. A further difficulty in recognizing herbarium material is that leaflets from young shoots are invariably quite different from older leaflets, having broad almost concolorous blades and prominent teeth. These juvenile forms may gradually change to needle-like on the same shoot or be retained to fertile maturity.

Vouchers; *Bolus 9819* (BOL, LD, PRE); *Boucher 2382* (STE); *Moffett 2324* (MO, NBG, PRE, STE); *Moffett 2403* (K, PRE, STE); *M.C. Olivier 736* (NBG).

56. *Rhus stenophylla* Eckl. & Zeyh., Enumeratio plantarum africanae australis 2: 144 (1836); Walp.: 552 (1842); Sond.: 507 (1860); Engl.: 404 (1883); Diels: 571, 592, 594, 617, t. 4C (1898); Schonl.: 235 (1911); Engl.: 199, t. 95 C (1921). Type: Cape Province, Table Mountain and Hottentotshollandberge, *Ecklon & Zeyher 1094* (S, lecto.! here designated; C!, P!, SAM!, isolecto.).

Toxicodendron stenophyllum (Eckl. & Zeyh.) Kuntze: 154 (1891); *R. rosmarinifolia* Vahl var. *stenophylla* (Eckl. & Zeyh.) Schonl.: 104 (1930).

R. lavandulaefolia Presl: 42 (1844) nom. nud., *Sieber 216* (PRC, photo!).

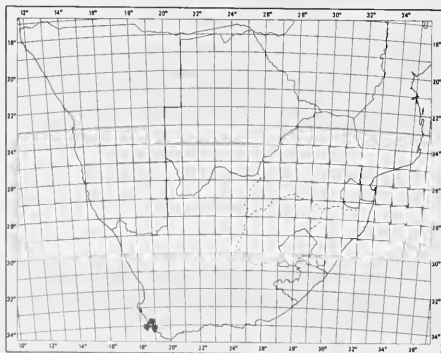
Divaricate, evergreen, suffrutescent shrub up to 1,2 m high. It differs from *R. rosmarinifolia* (no. 55) by the discolorous leaflets being longer, less xerophytic and shortly petiolulate, and by its smaller drupes. From *R. angustifolia* (no. 57) it differs by having a smaller habit, narrower and flexuous plicate leaflets and shorter petiolules. In some leaves, the lateral leaflets are longer than the terminal leaflet. *Branches* glabrous. *Leaflets* lanceolate to oblanceolate, sometimes very narrowly rhombic, shortly petiolulate, slightly revolute; venation simple- to semicraspedodromous, reticulation not so prominent above. *Petiole* (4–) 6(–8) mm long; petiolules (1–) 2 (–3) mm long; terminal leaflets (27–) 43(–55) × (3–) 4(–5) mm, lateral leaflets (25–) 39(–47) × 3–4 mm. *Drupe* oblate, ellipsoid, greyish brown, puberulous, ± 5,5 mm wide and 4,0 mm thick.

Restricted to the extreme south-western Cape, occurring near Paarl, Stellenbosch, Somerset West, Gordon's Bay and in the Cape Peninsula. Flowering recorded in July. Map 48.

The isolated collections, together with the intermediate morphology, indicate that this taxon could be a natural hybrid between *R. rosmarinifolia* (no. 55) and *R. angustifolia* (no. 57). As it is quite distinct in the field and easily separated from the many different morphs of *R. rosmarinifolia*, its status as a species should for the present be upheld.

Vouchers: *Boucher 2129* (PRE, STE); *Page in NBG 95157* (NBG); *Moffett 2794* (PRE); *Sieber 216* (G, K, L, M, PRE, S, TUB, W, WU).

57. *Rhus angustifolia* L., *Species plantarum* 1: 267 (1753); L.: 382 (1763); Ait.: 369 (1789); Thunb.: 52 (1794); Willd.: 1484 (1798); Pers.:



MAP 48. — *Rhus stenophylla*

325 (1805); Ait.: 165 (1811); Thunb.: 213 (1818); Schult.: 658 (1820); Thunb.: 263 (1823); DC.: 71 (1825); G. Don.: 72 (1832); Eckl. & Zeyh.: 144 (1836); Sond.: 507 (1860); Engl.: 405 (1883); Diels: 571, t. 4A, B (1898); Schonl.: 235 (1911); Engl.: 199, t. 95A, B (1921); Schonl.: 100, t. p. 101 (1930); Adamson: 562 (1950). Type: Ethiopia (Africa), *herb. LINN 378.21* (LINN, lecto.! here designated).

Toxicodendron angustifolium (L.) Kuntze: 153 (1891). *Searsia angustifolia* (L.) F.A. Barkley: 54 (1965).

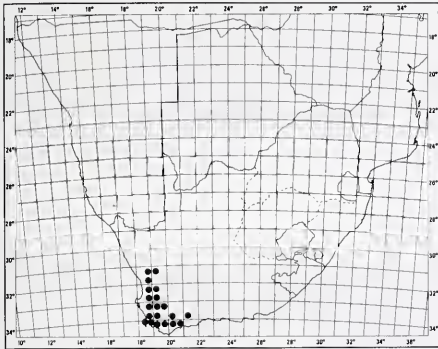
R. argentea Mill.: 12 (1768). Type: herb. Miller (BM!).

R. angustifolia L. var. *cinerea* Engl.: 406 (1883)? Type: non cit., non vidi.

Erect, suffrutescent, thicket-forming shrub up to 1,5 m, occasionally small tree up to 4 m. *Branches* glabrous, reddish, minutely lenticellate, branchlets ascending. *Leaves* trifoliolate, petiole, petiole semiterete, flattened above, (5–) 8(–19) mm long; leaflets coriaceous, discolorous, dark grey-green and glabrous above, creamy caescent and tomentose below, hypostomatous, petiolulate, petiolule canaliculate above, 1–5 mm long; lamina lanceolate to narrowly elliptic, base cuneate, apex subacute to acute, mucronulate; margin entire, slightly thickened; venation simple- to semicraspedodromous, midrib dull yellow, prominent below, impressed above, secondaries slightly prominent below, impressed above, tertiaries impressed or obscure; terminal leaflets (24–) 52(–86) × (5–) 10(–21) mm, lateral leaflets (11–) 41(–67) × (3–) 7(–16) mm. *Panicles* much branched, flowers crowded, males up to 80 mm long, odoriferous, females up to 40 mm, axillary and terminal, exposed. *Flowers* normal, calyx pubescent. *Drupe* oblate, elliptic, creamy caescent, shortly villous-tomentose, 5,2 × 3,0 to 5,6 × 3,3 mm.

Occurs in the south-western Cape, ranging from near Nieuwoudville in the north to the Cape Peninsula in the south and eastwards as far as near Swellendam. It is, however, uncommon east of the north-south Cape folded mountain axis. Flowering recorded in October and November. Map 49.

Rhus angustifolia is a very uniform species, often forming thickets along roads and watercourses. On the sandy banks of the Olifants and Breede River specimens may become 4 m high. The male flowers which occur in profusion, have a strong yeasty scent, attracting a great many insects.

MAP 49.—*Rhus angustifolia*

Farmers have problems in getting rid of this tough bush ('taabos') because of its massive rootstock net work.

Vouchers: *Bayliss 637* (BR, K, P, PRE, WAG, Z); *Moffett 1528* (MO, NBG, PRE, STE); *Rehmann 2719* (BM, K, Z); *Schlechter 9157* (BM, COI, E, G, K, L, P, PRE, W, WAG, Z).

58. *Rhus tomentosa* L., Species plantarum
1: 266 (1753); L.: 382 (1763); Ait.: 368 (1789); Thunb.: 52 (1794); Willd.: 1483 (1798); Pers.: 325 (1805); Ait. f.: 164 (1811); Thunb.: 221 (1818); Schult.: 655 (1820); Thunb.: 266 (1823); DC. 72 (1825); Loudon: 110 (1830); G. Don: 74 (1832); Eckl. & Zeyh.: 146 (1836); Pappe: 13 (1854); Sond.: 508 (1860); Engl.: 407 (1883); Diels: 572, 592, 594, 615, 616, t. 3, 618, 620 (1898); Sim: 195, t. 104, fig. 3 (1907); Schonl.: 236 (1911); Engl.: 202, t. 97 A–D (1921); Schonl.: 97, t. p. 99 (1930); Burt Davy: 510 (1932); Adamson: 562 (1950); R. & A. Fernandes: 594 (1966); Wijnands: 41 (1983). Type: Cape of Good Hope, *herb. LINN 378.20* [LINN, lecto. vide Wijnands: 42 (1983)].

Toxicodendron tomentosum (L.) Kuntze: 154 (1891). *Sear-sia tomentosa* (L.) F.A. Barkley: 54 (1965).

R. lobata Poir.: 264 (1806); DC.: 71 (1825); G. Don: 73 (1932). Type: *ex hort. Teneriffe* (B†) vide Schonl.: 98 (1930).

R. ellipticum Thunb.: 214 (1818); Schult.: 660 (1820); Thunb.: 263 (1823); DC.: 70 (1825); G. Don: 73 (1832). *R. tomentosa* var. *petiolaris* Sond.: 509 (1860); Engl.: 408 (1883). Type: Cape of Good Hope, *Thunberg in herb. Thunberg 7332* (UPS, lecto.! here designated).

R. bicolor Licht. ex Schult.: 661 (1820); DC.: 71 (1825); G. Don: 73 (1832). Type: Cape Province, Karroospoort (Ceres

District), *Lichtenstein 196* vide Schonl.: 100 (1930), *herb. WILLD 6020* (B-WILLD!).

R. plukenetiana Eckl. & Zeyh.: 147 (1836). Type: Pluk. Alm.: 219, t. 7 (1696). Icono.!

R. tomentosa var. *swellendamensis* Eckl. & Zeyh. ex Engl.: 408 (1883). Type: Cape Province, Swellendam, Puspasvallei, *Ecklon & Zeyher 1109* p.p. (S, lecto.! here designated).

R. tomentosa var. *β uitenhagensis* Eckl. & Zeyh.: 147 (1836) nom. nud. *Ecklon & Zeyher 1109* p.p. (GRA!, SAM!).

R. tomentosa var. *γ sylvatica* Eckl. & Zeyh.: 147 (1836) nom. nud. *Ecklon & Zeyher 1109* p.p. (S!, SAM!).

R. viticifolia F. Muell. ex Benth.: 489 (1863). Type: Australia, Queensland, *Dr. Leichhardt s.n.* (K, holo.!).

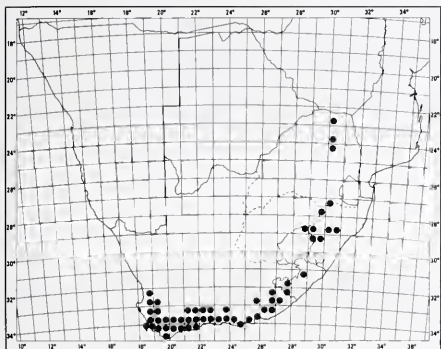
Much-branched shrub or small tree up to 5 m high. *Bark* smooth grey-brown; branches divaricate, reddish brown, glabrous or puberulous to tomentose, shallowly ridged, minutely lenticellate. *Leaves* trifoliolate, petiolate; petiole semiterete, shallowly canalicate above, reddish or canescent, (9–)19(–34) mm long; leaflets coriaceous, discolorous, dark grey-green and glabrous to thinly pubescent above, creamy canescent and villous-tomentose to lanate below, hypostomatous, petiolule, petiolules canalicate, 3–5 mm long; lamina widely lanceolate, elliptic or obovate, base cuneate, apex generally acute, occasionally rounded or acuminate, mucronulate; margin slightly thickened, entire or grossly pauciserrate in upper $\frac{2}{3}$; venation simple craspedromous to reticulodromous, midrib and secondaries prominent below, impressed above, tertiaries prominently reticulate above; terminal leaflets (29–)49(–79) × (8–)22(–45) mm, lateral leaflets (19–)35(–59) × (7–)17(–25) mm. *Panicles* lax, much-branched, glabrous or thinly pubescent, axillary and terminal, males up to 90 mm long, odoriferous, exposed, females up to 50 mm long, within foliage. *Flowers* normal, calyx thinly pubescent. *Drupe* obovate, ellipsoid, creamy canescent, shortly villous-tomentose, 4.4 × 3.0 to 6.4 × 4.3 mm. Fig. 32.

Ranges from the Soutpansberg in Venda to the Wolkberg near Tzaneen, the Drakensberg escarpment between Dirkie-dorp and Oliviershoek Pass, the foothills of the Natal Drakensberg, central Natal, the Transkei and Ciskei interior, eastern, southern and western Cape as far as the Cape Peninsula and the Cederberg near Clanwilliam. Also occurs in eastern Zimbabwe. Flowering recorded in July and August. Map 50.



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FIGURE 32.—*Rhus tomentosa*: 1, branch with male inflorescence, $\times 0,8$ (Williams 2317); 2, abaxial surface of leaf, $\times 0,8$; 3, fruiting branch, $\times 0,8$; 4, drupe, $\times 2,5$ (Moffett 3473); 5, habit. Artist: E. Ward-Hilhorst.

MAP 50.—*Rhus tomentosa*

Its distribution is virtually identical to that of *R. lucida* forma *lucida* (no. 40a) and like that taxon, it is far more plentiful in the south-west, becoming scarce northwards.

Rhus tomentosa might be confused with *R. angustifolia* (no. 57) and *R. incisa* var. *effusa* (no. 59b). From the former it differs by not being suffruticose, having much wider leaflets and flowering in July and August, while the latter taxon has smaller leaflets, usually reddish underneath, conspicuous glomerulate flowers and much larger fulvous, villous drupes.

Usually found in rocky places and on the edges of scrub forest, *R. tomentosa* is an attractive shrub. It was one of the earliest species to be introduced to overseas botanic gardens and has now gone wild in India.

Vouchers: *Gerstner 4012* (K, NH, PRE); *Moffett 2402* (NBG, PRE, STE); *Moffett 3473* (MO, PRE); *Rogers 22030* (PRE, Z); *I. Williams 2317* (K, NBG, S).

59. *Rhus incisa* L.f., Supplementum plantarum: 183 (1781); **Thunb.:** 52 (1794); **Willd.:** 1483 (1798); **Pers.:** 325 (1805); **Ait. f.:** 164 (1811); **Thunb.:** 223 (1818); **Schult.:** 655 (1820); **Thunb.:** 267 (1823); **DC.:** 72 (1825); **G. Don:** 74 (1832); **Sond.:** 509 (1860); **Engl.:** 408 (1883); **Diels:** 572, 592, 594, 619, 621, t. 5 F–H (1898); **Schönl.:** 236 (1911); **Engl.:** 202, t. 96 F–H (1921); **Schönl.:** 102 (1930). Type: Cape of Good Hope, near Paardeberg, *Thunberg in herb. Thunberg 7341* [UPS, lecto.! vide *R. Fernandes: 128* (1967)].

Toxicodendron incisum (L.f.) Kuntze: 154 (1891). *R. incisa* var. *typica* Schönl.: 103 (1930). *R. incisa* var. *incisa*, *R. Fernandes: 128* (1967). *Searsea incisa* (L.f.) F.A. Barkley: 54 (1965).

Two varieties are distinguished:

59a. var. *incisa*.

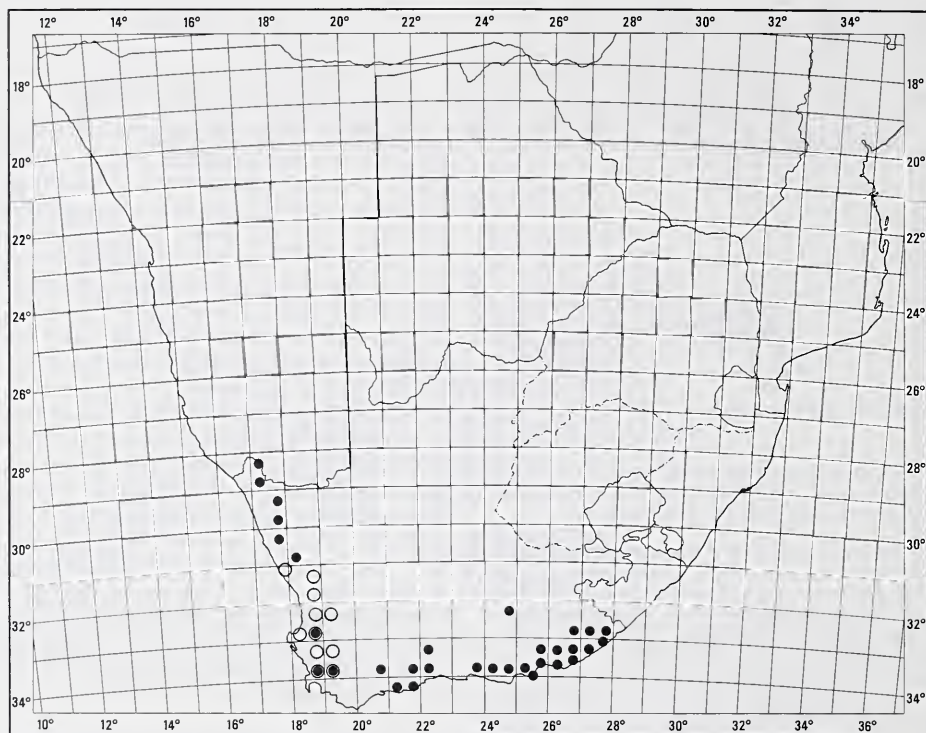
Multistemmed, deciduous shrub up to 3 m high and 5 m wide, usually smaller. Branches divaricate, greyish brown, glabrous, lenticellate; branchlets somewhat squarrose, often reddish, spur-like. Leaves trifoliolate, petiolate; petiole slender, semiterete, slightly canaliculate above, (3–)5(–9) mm long; leaflets sessile, coriaceous, pinnatifid, discolorous, dark green, rugose and shortly pubescent above, canescent to white and tomentose-lumbricate below, hypostomatous; lamina ovate to obovate, base attenuate, apex retuse to obtuse; margin irregularly cleft, parted or divided, revolute, lobes crenate to bicrenate, mucronulate; venation simple craspedodromous, midrib and secondaries prominent below, impressed above; terminal leaflets (12–)15(–20) × (8–)9(–10) mm, lateral leaflets (4–)10(–13) × (3–)5(–7) mm. Panicles pubescent, terminal on short spurs, up to 50 mm long, exposed, flowers glomerulate. Flowers sessile, calyx and corolla tomentose. Drupe obovate, ellipsoid, creamy canescent, villous-tomentose, 4,7 × 2,5 to 6,0 × 4,5 mm.

Occurs on clay-rich soils from west of Nuwerus in southern Namaqualand to near Worcester in the south. It is especially plentiful in the valleys between Piketberg and Clanwilliam. Flowering recorded in July. Map 51.

This distinct species, which is deciduous in late summer, can be recognized by its much-branched spreading habit, crenate-lobed leaflets and terminal panicles with wide internodes and sessile flowers.

Vouchers: *Goldblatt 2314* (BR, M, PRE, WAG); *Moffett 2709* (K, NBG, PRE, STE); *Moffett 2710* (BOL, K, MO, NBG, PRE, STE); *Moffett 2812* (MO, PRE, STE); *Schlechter 8720* (BM, G, GRA, K, NH, P, PRE, Z).

59b. var. *effusa* (Presl) *R. Fernandes* in Boletim da Sociedade Broteriana Series 2, 42: 128 (1967). Type: Eastern Cape Province, Uitenhage, Addo and Olifantshoek; George, Gauritz and Camtoursrivier (Gourits and Gamtoos Rivers); Albany, Hassagaybosch, *Ecklon & Zeyher III* (PR, holo. photo.!; C!, G!, GRA!, K!, L!, LD!, M!, P!, PRE!, SAM!, TCD!, UPS!, W!, iso.).



MAP 51. — ○ *Rhus incisa* var. *incisa*
● *R. incisa* var. *effusa*

Toxicodendron obovatum (Sond.) Kuntze: 154 (1891). *R. sinuata* sensu Eckl. & Zeyh.: 147 (1836) non Thunb. *R. sinuata* Thunb. var. *effusa* Presl: 42 (1844). *R. obovata* Sond.: 508 (1860); Engl.: 408 (1883); Diels: 571, 592, 615, t. 5 E–F, 621 (1898); Sim: 195, t. 104, fig. 4 (1907). *R. incisa* var. *obovata* (Sond.) Schönl.: 103 (1930).

Height to 1,5 m in Namaqualand, to 3,5 m in the eastern Cape. *Petiole* (5–)8(–13) mm long; terminal leaflets (13–)24(–41) × (7–)12(–18) mm, lateral leaflets (9–)16(–30) × (5–)9(–19) mm. *Male panicle* up to 100 mm long. *Drupe* 5,0 × 4,5 to 9,3 × 7,0 mm.

This variety occurs in two disjunct areas adjacent to and on either side of var. *incisa*. One area is in Namaqualand, between the Rosyntjieberg in the Richtersveld in the north and near Garies in the south. The other is in the western, southern and eastern Cape between Worcester and East

London. There are also isolated records from near Paarl and Citrusdal in the western Cape and a single collection in the previous century from Graaff-Reinet (*Bolus* 625). Flowering recorded in June, September and December. Map 51.

The Namaqualand specimens are similar to those of var. *incisa*, differing only in their leaflet margins being either entire or with a few shallow teeth towards the apex and by having more hairy, fulvous drupes. The eastern variant on the other hand differs from var. *incisa* in habit, leaf size, margin and size of drupe. These plants tend to be less dense and do not form large rounded shrubs, have larger leaves which are usually dentate to serrate, a subacute apex, considerably larger panicles and much larger rufous, densely villous drupes.

The specimens in the eastern Cape retain their leaves in summer.

Vouchers: *Bolus* 6527 (BOL, BR, K, PRE, WAG, Z); *Moffett* 2518 (GRA, MO, PRE); *Moffett* 2366 (NBG, PRE, STE); *Schonland* 574 (GRA, NH, Z).

60. *Rhus dissecta* Thunb. in Hoffm., *Phytographische Blätter*: 29 (1803); Thunb.: 223 (1818); Schult.: 654 (1820); Thunb.: 267 (1823); DC.: 72 (1825); G. Don: 74 (1832); Eckl. & Zeyh.: 150 (1836); Sond.: 509 (1860); Engl.: 408 (1883); Diels: 572, 592, 622, t. 5 B-D (1898); Schonl.: 236 (1911); Engl.: 202, t. 96 B-D (1921); Schonl.: 111 (1930); Adamson: 562 (1950). Type: Cape of Good Hope, *Masson in herb. Thunberg 7330* (UPS, holo!).

R. dissecta var. β Sond.: 509 (1860). *Toxicodendron dissectum* (Thunb.) Kuntze: 153 (1891). *R. dissecta* var. *pimatifida* Schonl.: 111 (1930). *R. dissecta* var. *dissecta*, R. Fernandes: 127 (1967).

R. argentea Eckl. & Zeyh.: 149 (1836). Walp.: 553 (1842). *R. dissecta* var. α Sond.: 509 (1860). *R. dissecta* var. *obovata* Schonl.: 111, t. p. 109, 110 (1930). Type: Cape Province, Clanwilliam, Brackfontein, *Ecklon & Zeyher II27* (S, lecto.! here designated; G!, L!, PRE!, SAM!, W!, isolecto.).

R. argentea var. β *brevifolia* Eckl. & Zeyh.: 149 (1836); Sond.: 409 (1883); R. Fernandes: 127 (1967). Type: Cape Province, Clanwilliam, Brackfontein, *Ecklon & Zeyher II27* (S, lecto.! here designated; M!, P!, SAM!, W!, isolecto.).

Dwarf, branched, deciduous suffrutex or shrublet to 1,5 m high. *Branches* glabrous, reddish, divaricate to somewhat squarrose, often prominently lenticellate. *Leaves* trifoliate, petiolate, often fasciculate; petiole slender, minutely canaliculate above (8-)15(-30) mm long; leaflets sessile, subcoriaceous, discolorous, dark green and glabrous above, canescent to white and tomentose below, hypostomatous; lamina obovate to obtusulate, base narrowly cuneate to attenuate, apex acute, mucronulate, rarely truncate; margin slightly thickened, often revolute, dentate, pinnatisect or parted in upper half, teeth acute, often sharply mucronate; venation simple craspedodromous, midrib prominent below, impressed above, secondaries slightly prominent, yellow, distinct above, slightly prominent, obscure below; terminal leaflets (8-)15(-30) \times (3-)10(-17) mm, lateral leaflets (8-)12(-24) \times (3-)6(-12) mm. *Panicles* glabrous, much reduced, few-flowered, terminal on short spurs, exposed. *Flowers* normal, corolla lobes distinctly veined. *Drupe* asymmetrically rhombic, ellipsoid, glabrous, pustulose to verrucose, slightly tricuspidate, yellow to dark red, 6,4 \times 3,5 to 9,0 \times 5,9 mm. Fig. 33.

Confined to the mountains and coastal foreland of the southwestern Cape north of the 34° line of latitude where it ranges from near Vanrhynsdorp in the north to Cape Town and Worcester-McGregor in the south. Flowering recorded in July. Map 52.

Rhus dissecta is recognized by its distinct leaves and drupes. The leaves have unusually long petioles, the leaflets have sharply pointed teeth and the distinct yellow secondary veins reach to the margin while the drupes are relatively large, asymmetric and covered in minute little bumps.

The leaflets vary from dentate to irregularly parted and although the extremes are very different and the dentate plants occur more in the north, too many intermediates, both in morphology and distribution, occur to warrant any meaningful separation of this taxon.

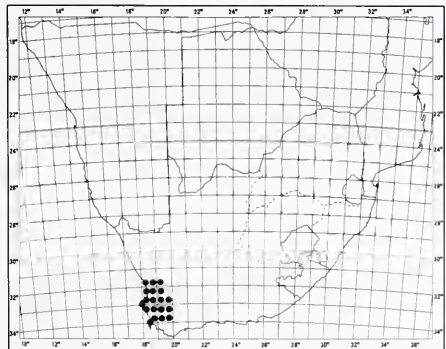
Rhus dissecta is perhaps the most attractive of our *Rhus* species and should be successful on a rocky or as bonsai.

Vouchers: *Esterhuysen 32210* (BOL); *Goldblatt 2486* (BR, M, NBG, WAG); *Moffett 2746* (MO, PRE, STE); *Negin 23* (NBG). *Esterhuysen 32210* is unusual in having petioles up to 60 mm long.

61. *Rhus populifolia* E. Mey. ex Sond. in Harv. & Sond., *Flora capensis* 1: 508 (1860); Engl.: 406 (1883); Diels: 571, 592, 622 (1898); Engl.: 202 (1921); Schonl.: 107, t. p. 108 (1930); Merxm. & A. Schreier: 13 (1968). Type: North-western Cape, at the mouth of the Gariep (Orange River), 18.9.1830, *Drège s.n.* (TCD, lecto.! here designated; S, fragment, isolecto!).

Toxicodendron populifolium (E. Mey.) Kuntze: 154 (1891).

R. steingroeveri Engl.: 500 (1898); Diels: 572, 592, 621, t. 5A (1898); Schonl.: 236 (1911); Engl.: 200, t. 96 A (1921).



MAP 52.—*Rhus dissecta*



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FIGURE 33.—*Rhus dissecta*: 1, fruiting branch, $\times 0,8$; 2, leaf, $\times 1,7$; 3, drupe, $\times 2,5$ (1–3, *Rourke s.n. ex Riebeeck-Kasteel*); 4, branch with male flowers, $\times 0,8$; 5, male flower, $\times 5$ (4 & 5, *Moffett 2707*); 6, leaf, $\times 1,7$ (*Moffett 281I*).
 Artist: E. Ward-Hilhorst.

Type: Namibia, Aus, Aug. 1886, *Steingroever* 57 (B†; P, lecto.! here designated; Z, isolecto.!).

Much-branched, multistemmed, gnarled shrub up to 2,5 m high. *Bark* grey-brown; branches divaricate, reddish when young, becoming greyish white. *Leaves* trifoliolate, petiolate; petiole slightly canaliculate above, (3–)8(–12) mm long; leaflets sessile, coriaceous, discolorous, dark shiny green and subglabrous above, anescent to yellowish green and tomentose-lumbricate below, hypostomatous; lamina ovate to widely elliptic to obovate, base cuneate, apex obtuse to subacute, often mucronulate; margin flat to slightly revolute, crenate to crenulate towards apex, rarely entire; venation simple craspedodromous, midrib and secondaries dull yellow, prominent below, impressed above; terminal leaflets (8–)20(–40) × (5–)13(–30) mm, lateral leaflets (4–)15(–30) × (4–)10(–21) mm. *Panicles* puberulous, axillary and terminal, exposed, multiflorous or much reduced with few flowers on old branches. *Flowers* normal, calyx puberulous. *Drupe* asymmetrically rhombic, lenticular, glandulaceous becoming glabrous, tricuspidate, minutely verrucose, yellowish brown, 6,8 × 2,7 to 8,4 × 4,0 mm.

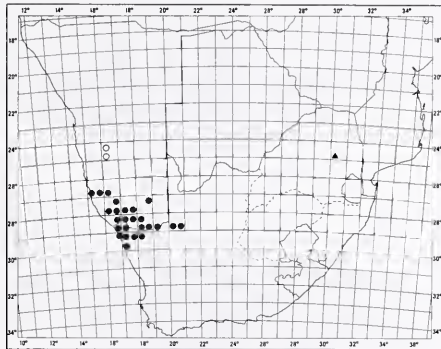
Occurs in southern Namibia and the north-western Cape, ranging from just inland of Lüderitz in the north to near Kakamas in the east and as far south as Komaggas, west of Springbok. Flowering recorded in May, July, August, September, December and February. Map 53.

The dark, shiny, crenate leaflets with yellowish indument, together with the asymmetric, compressed, tricuspidate fruit are diagnostic and usually present in September and October after sufficient rainfall. This species resembles *R. incisa* var. *effusa* (no. 59b) from which it may be separated by the yellow indument and quite different drupe. It might also be confused in the herbarium with *R. tomentosa* (no. 58) if fruit is lacking.

Rhus populifolia is the most common *Rhus* species of the lower Orange River Broken Veld where it grows in fissures in the granite rocks. It is also found on the black dolomites of southern Namibia and along watercourses may reach 2,5 m.

Vouchers: *Giess & Müller* 12157 (K, M, PRE, WAG, WIND); *Merxmüller & Giess* 3403 (BR, WIND, PRE); *Moffett* 3311 (K, MO, NBG, PRE, STE); *Moffett* 3348 (MO, PRE, WIND).

62. *Rhus volkii* *Suesseng.* in *Mitteilungen der Botanischen Staatssammlung München* 1:8: 343 (1953); *Merxm. & A. Schreib.*: 14 (1968).



MAP 53. —● *Rhus populifolia*
○ *R. volkii*
▲ *R. batophylla*

Type: Namibia, Great Namaland, slopes of Tsaris Mountains, 26.10.1939, *Volk* 752 (M, holo.!).

Much-branched shrub to 1,5 m high. *Bark* dark grey; branches striate, greyish white, puberulous, branchlets somewhat articulated. *Leaves* crowded, trifoliolate, petiolate; petiole puberulous, semiterete, shallowly canaliculate above, (3–)4(–9) mm long; leaflets sessile, coriaceous, discolorous, silvery green and shortly sericeous above, silvery white and densely pubescent below, hypostomatous; lamina oblanceolate, elliptic or obovate, base cuneate, apex rounded to acute, mucronate; margin entire, rarely 1 or 2 teeth near apex, occasionally slightly revolute; venation simple craspedodromous, midrib prominent below, impressed above, secondaries slightly prominent above; terminal leaflets (12–)20(–27) × (6–)8(–12) mm, lateral leaflets (3–)16(–23) × (3–)7(–9) mm. *Panicles* pubescent, up to 30 mm long, mostly terminal, occasionally axillary, flowers crowded. *Flowers* relatively large, calyx segments 2 mm long, pubescent, corolla lobes 3,5 mm long, pubescent, fulvous. *Drupe* transversely oblong, ellipsoid, asymmetric, tricuspidate, pubescent, fulvous, ± 6 mm wide by 4 mm thick.

Confined to a small area of Namibia in the Naukluft and Tsaris Mountains north of Maltahöhe. Flowering recorded in May and June. Map 53.

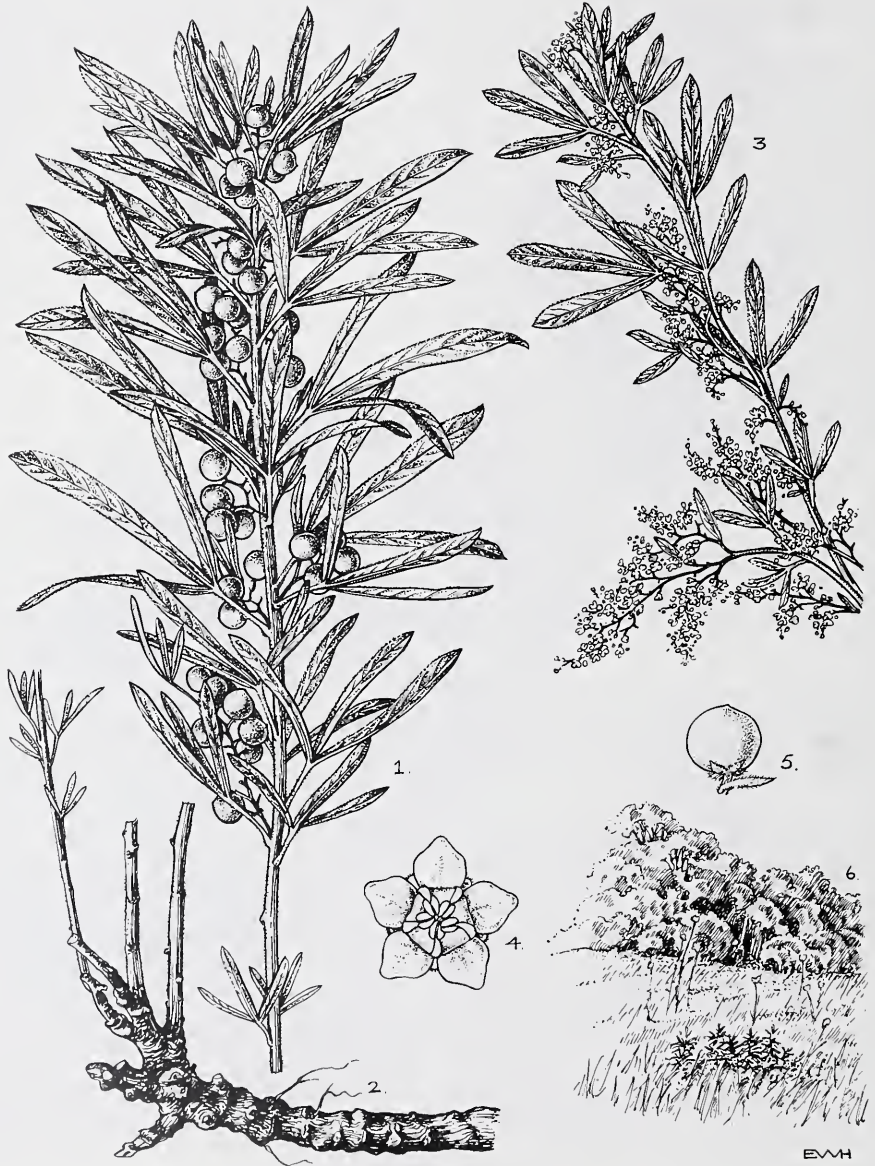


FIGURE 34.—*Rhus rudatis*: 1, fruiting branch, $\times 0.8$; 2, caudex, $\times 0.8$; 3, branch and male inflorescences, $\times 0.8$; 4, male flower, $\times 8$ (3 & 4, *Acocks 13780*); 5, drupe and ciliate bract, $\times 2.5$ (1, 2 & 5, *Moffett 3525*); 6, habit in foreground and habitat. Artist: E. Ward-Hilhorst.

The silvery green sericeous leaflets, fulvous flowers and oblong fruit easily separate this species from all the other African taxa. It is closest to a specimen from limestone in Yemen (*Wood 1015*) filed under *R. flexicaulis* Bak. in K. Unfortunately that specimen is male, so the distinctive fruit could not be compared.

Rhus volkii is found on calcrete and dolomitic substrates and because of its attractive foliage, may well have horticultural potential.

Vouchers: *E. Cronje 5* (WIND); *M. Müller & Tilson 900* (PRE, WIND); *Giess 10430* (K, M, PRE, WIND).

63. *Rhus batophylla* Codd in *Bothalia* 6:3: 539, t. 1 (1956); Codd: t. 1549 (1969). Type: Eastern Transvaal, Steelpoort District, Mooihoek Chrome Mine, 2,4 km west of Driehoek, 900 m, 23.3.1953, *Codd & Dyer 7699* (PRE, holo.!; BM!, BR!, K!, M !, P!, S!, SRGH!, UPS!, iso.).

Shrub up to 2 m high, branching freely from the base. *Bark* smooth, reddish; branches erect, somewhat arched, lanate. *Leaves* trifoliolate, petiolate; petiole lanate, semiterete, flat or slightly canaliculate above (3–)11(–17) mm long; leaflets sessile, coriaceous, slightly rugose, conduplicate, discoloured, greyish green and thinly villous-lanate above, canescent to white and densely lanate-lumbricate below, hypostomatous; lamina ovate to elliptic, recurved, base obtuse to cuneate, apex acuminate, mucronulate; margin prominently dentate-serrate, teeth mucronulate; venation simple craspedodromous, midrib and secondaries prominent below, impressed above, other veins forming a prominent reticulum above; terminal leaflets (23–)42(–69) × (10–)26(–54) mm, lateral leaflets (13–)25(–50) × (8–)16(–34) mm. *Panicles* lanate, axillary and terminal, exposed, males up to 180 mm long, subsessile flowers crowded on short side branches. *Flowers* normal. *Drupe* asymmetrically rhombic, lenticular, glabrous, dark red, drying brown, 5,0 × 2,1 to 6,8 × 3,2 mm.

Found only in the Steelpoort area of the eastern Transvaal where it grows along watercourses in the vicinity of the chrome mines. Flowering recorded in March. Map 53.

The white bramble-like leaflets and distinct red to brown fruits, separate *R. batophylla* from all other species in the subgenus.

Owing to the ravages of goats, unprotected plants seldom become more than 1 m high and have thin annual arching

branches arising from a basal stump. When protected however, they reach 2 m with stems up to 70 mm in diameter.

The arching branches of white leaves and red fruit suggest that this species has horticultural potential.

Vouchers: *Codd 6700* (BM, GRA, K, Z); *Moffett 1991* (K, MO, NBG, PRE, UNIN).

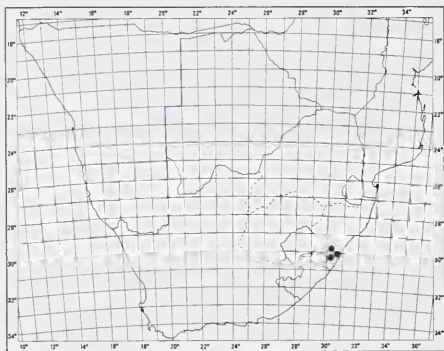
64. *Rhus rudatisii* Engl. in Engl. & Drude, *Die Vegetation der Erde* 9, *Die Pflanzenwelt Afrikas* 3,2: 217 (1921); *Schönl.*: 36, t. p. 36 (1930); *Ross*: 230 (1972). Type: Natal, Alexandra County, Friedenau, Mgai Flats, 600 m, 21.9.1909, *Rudatis 698* (B†; K, lecto.! here designated; BM!, E, GRA!, L!, LD!, P!, S!, STE!, W!, WAG!, Z!, isolecto.).

Dwarf, rhizomatous, virgate suffrutex up to 0,35 m high. *Branches* dark brown, villous-pubescent. *Leaves* erect, crowded and longest in middle of branches, trifoliolate, petiolate; petiole margined, concave, (4–)9(–14) mm long; leaflets sessile, subcoriaceous, concolorous, dark olive-green, pubescent above and below, amphistomatous; lamina linear to oblanceolate, apex acute, mucronate; margin entire, slightly revolute, ciliate; venation simple craspedodromous, midrib and secondaries prominent below, slightly prominent to obscure above, secondaries acutely angled ($\pm 25^\circ$); terminal leaflets (20–)33(–47) × (4–)6(–9) mm, lateral leaflets (16–)29(–41) × (2–)4(–7) mm. *Panicles* puberulous, relatively few-flowered, up to 35 mm long, mostly axillary, within foliage, occasionally terminal. *Flowers* normal. *Drupe* circular, globoid, glabrous, shiny, ± 6 mm in diameter. Fig. 34.

Occurs only in southern Natal where it has been collected in the Vernon Crookes Nature Reserve near Umzinto, in the Dumisa–Highflats area near Ixopo and on the Hela–Hela plateau near Richmond. The type locality at Mgai, is now under sugar-cane. Flowering recorded in September and January. Map 54.

The suffrutescent habit, closely packed ascending foliage with leaves longest in the middle of the erect branches, and pubescent, ciliate leaflets with acute secondary veins are diagnostic and separate this species from the others. The plants are inconspicuous in their dense grassland habitat and may easily be overlooked.

Vouchers: *Acocks 13780* (PRE); *Bodenstein 36* (NH); *Moffett 3525* (GRA, K, MO, NBG, NH, NU, PRE).

MAP 54.—*Rhus rudatisii*

65. *Rhus pondoensis* *Schonl.* in *Bothalia* 3,1: 95, t. p. 96 (1930); *Burt Davy*: 510 (1932); *Compton*: 332 (1976). Type: Natal, near Murchison, 3.5.1884, *J. Medley Wood 3002* (SAM, holo.!; BM!, K!, NH!, iso.).

Slender, virgate, sparingly branched shrublet up to 1 m high. *Branches* glabrous, longitudinally ribbed, occasionally peeling. *Leaves* trifoliolate, subsessile to petiolate; petiole 3-ribbed below, margined, shallowly canaliculate above, (1–)3 (–7) mm long; leaflets sessile, rigid, glabrous, concolorous, dull grey-green, drying yellow-green, amphotomatous; lamina linear-oblongate to elliptic and obovate, base narrowly cuneate to obtuse, apex acute to acuminate, cuspidate; margin entire, slightly thickened, whitish; venation simple craspedodromous, midrib and secondaries equally prominent above and below, secondaries \pm 9 per cm, often forked; terminal leaflets (18–)39(–62) \times (3–)6 & 15(–20) mm, lateral leaflets (13–)35(–60) \times (2–)5 & 13(–17) mm. *Panicles* glabrous, axillary and terminal, latter up to 70 mm long, flowers crowded on short branches, males exposed, females within foliage. *Flowers* normal, styles persistent. *Drupe* obovate, asymmetric, ellipsoid, glabrous, shiny, chestnut-brown, 5,8 \times 3,8 to 6,8 \times 4,0 mm.

Occurs in four widely disjunct localities: near Haenertsburg in the north-eastern Transvaal, Hamilton Nature Reserve near Barberton in the eastern Transvaal, Itala Nature Reserve near Louwsburg in northern Natal and in the lower Mtamvuna

River area in southern Natal and Transkei. Flowering recorded from January to April. Map 55.

Rhus pondoensis, which can no longer be found in the type area, is distinct because of its longitudinally ribbed branches, extremely rigid, sharp pointed leaflets and closely packed pinnate secondary veins.

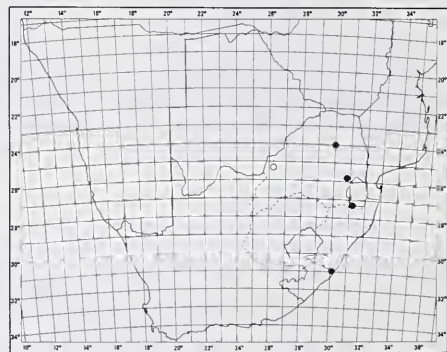
The specimen from Haenertsburg (*Van Wyk 6768*) has unusually wide elliptic to obovate leaflets.

Vouchers: *Acocks 13383* (PRE); *Brown & Shapiro 467* (K, PRE); *Kluge 1651A* (PRE, PRF); *Moffett 3131* (NU, PRE); *A.E. van Wyk 6768* (PRU).

66. *Rhus maricoana* *Moffett*, sp. nov. *R. ciliatae* Licht. ex Schult. et *R. wilmsii* Diels similis; a *R. ciliata* habitu pumilo fastigiato dense folioso, ramis atro-brunneis, drupis plus minusve asymmetricis differt; a *R. wilmsii* foliis minoribus, foliolis lateralibus falcatis, supra venis secundariis non manifestis et mucrone nonplicato differt.

Type: Transvaal, Zeerust District, Marico Chrome Mine: Goudini, 30.3.1983, *Moffett 3566* (PRE, holo.; K, MO, NBG, WAG, iso.).

Dwarf, rhizomatous, fastigiata shrublet between 0,3 and 1 m high. *Branches* and branchlets thin, glabrous, reddish brown. *Leaves* trifoliolate, petiolate; petioles slender, semiterete, prominently canaliculate above, (8–)11(–15) mm long; leaflets sessile, membranous, glutinose to glabrescent, concolorous, dark green, amphotomatous; lamina linear-oblongate, laterals falcate, apex acute, mucronulate; margin entire;



MAP 55.—● *Rhus pondoensis*
○ *R. maricoana*

venation kladodromous, midrib prominent above and below, secondaries slightly prominent above, impressed and obscure below; terminal leaflets (17–)24(–34) × 2–4 mm, lateral leaflets (14–) 19(–26) × 2–4 mm. *Panicles* up to 30 mm long, pyramidal, few-flowered, glutinous, axillary and terminal, exposed and within foliage. *Flowers* normal, styles persistent. *Drupe* asymmetrically oblate, ellipsoid, glabrous, shiny, light brown, 5,0 × 3,6 to 5,4 × 3,7 mm. Fig. 35.

Found only near Zeerust in the western Transvaal. Flowering recorded in March and April. Map 55.

Rhus maricoana is similar to *R. ciliata* (no. 21) and *R. wilmsii* (no. 67). From *R. ciliata* it differs by its dwarf, fastigiate habit, dense foliage, dark bark and asymmetric drupe. From *R. wilmsii* it differs by its smaller leaves, falcate lateral leaflets, impressed secondary veins and non-plicate mucro.

This species occurs in grassland at the transition between bushveld and turfveld and grows in dark soil among igneous rocks—hartzburgite vide *Carter 960* (PRE). Putative hybrids between it and *R. lancea* (no. 30) and *R. leptodictya* (no. 26) were also found in the type area.

Vouchers: *Carter 960* (PRE); *Moffett 3567* (K, MO, NBG, PRE, UNIN).

67. *Rhus wilmsii* Diels in Engl., *Botanische Jahrbücher* 24: 501 (1898); Diels: 589, 614, 641 (1898); Engl.: 216 (1921); Schonl.: 86, t. p. 86 (1930); Burt Davy: 508 (1932). Type: Transvaal, Lydenburg District, 'am grossen Katarakt' (at large waterfall), Nov. 1884, *Wilms 249* (B†; AMD, lecto.! here designated; BM!, GRA!, K!, isolecto.).

Dwarf, rhizomatous, much-branched shrublet up to 0,5 m high. *Branches* erect, glabrous, light brown, branchlets thin, ascending. *Leaves* ascending, crowded, trifoliolate, petiolate; petiole glabrous, margined, prominently canaliculate, relatively long (16–)22(–31) mm long; leaflets sessile, coriaceous, concolorous, dark olive-green, glabrous, amphistomatous; lamina linear, apex obtuse to acute, mucronulate; margin entire, slightly thickened; venation simple craspedodromous to kladodromous, midrib and secondaries prominent above and below, secondaries ± 7 per cm, other veins obscure; terminal leaflets (33–)58(–82) × (3–)5(–9) mm, lateral leaflets (21–)46(–73) × (2–)4(–8) mm. *Panicles* glabrous, much reduced and few-flowered, up to

30 mm long, mostly axillary and within foliage. *Flowers* normal, but relatively large, corolla lobes 3,5 mm long. *Drupe* circular, globoid, glabrous, shiny, ± 5 mm in diameter.

Known only from the high mountains north-west of Lydenburg in the eastern Transvaal. Flowering recorded in January and April. Map 56.

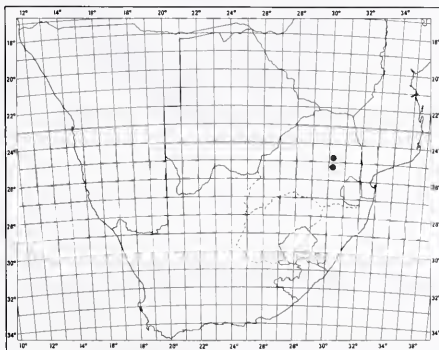
A distinct species which differs from the somewhat similar *R. pondoensis* (no. 65) by its much longer petioles, and blunter leaflet apices. It is probably closely related to the next species, *R. keetii*, from which it differs mainly in habit (see next species).

Rhus wilmsii forms small colonies among low dolerite outcrops or in adjoining grassveld. The large waterfall cited as the type locality is probably the one in the Lunskip River.

Vouchers: *Codd 8294* (K, PRE, SRGH); *Moffett 1840* (K, MO, NBG, PRE).

68. *Rhus keetii* Schonl. in *Bothalia* 3,1: 87, t. p. 87 (1930); Burt Davy: 508 (1932). Type: Eastern Transvaal, Lydenburg District, on the Klip River, Steelspoort Park, 30° 0' E and 24° 50' S, 1300 m, June 1925, *Keet 1435* (1345 vide Schonl., sphalm.) (GRA, holo.!, K!, PRE!, PRF!, STE!, iso.).

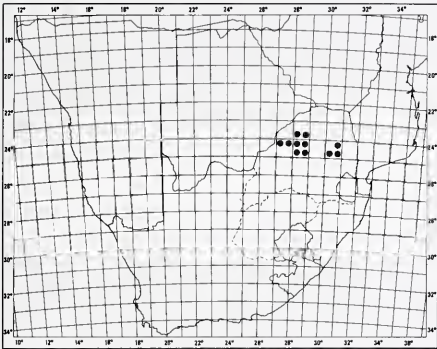
Slender, erect, single-stemmed, shrublet up to 1,7 m high. *Branches* glabrous, branchlets chestnut-brown, surface often peeling. *Leaves* relatively few, internodes 20–40 mm long, trifoliolate, petiolate; petiole slender, flattened to slightly canaliculate above, (12–)21(–50) mm long; leaflets sessile, coriaceous, concolorous, dull green, glabrous, stellate glandular, amphisto-



MAP 56.—*Rhus wilmsii*



FIGURE 35.—*Rhus maricoana*: 1, branch with male inflorescences, $\times 0,8$; 2, fruiting branch, $\times 0,8$; 3, drupes, $\times 2,5$ (2 & 3, *Wentzel* sub *Moffett* 3600); 4, male flower, $\times 8$; 5, abaxial surface of leaf, $\times 2,5$ (1, 4 & 5, *Moffett* 3566); 6, habit. Artist: E. Ward-Hilhorst.

MAP 57.—*Rhus keetii*

matous; lamina linear, laterals usually geniculate-falcate, apex acerose; margin entire, slightly thickened, dull yellowish white; venation simple craspedodromous, midrib and secondaries prominent above and below, secondaries usually forked low down or obscure in narrow leaflets; terminal leaflets (25–)75(–140) × (1–)4(–7) mm, lateral leaflets (12–)40(–110) × (1–)3(–5) mm. *Panicles* terminal, up to 140 mm long, much branched, sparsely flowered, prominently exposed. *Flowers* normal, styles persistent. *Drupe* oblate, obloid to ellipsoid, glabrous, shiny, 4,7 × 3,3 to 5,5 × 4,1 mm.

Occurs in two disjunct areas separated by the Springbok Flats. In the north-western Transvaal it is widespread in the Waterberg between Thabazimbi and Potgietersrus, while in the eastern Transvaal it occurs near Steelpoort and in the Blyde River Nature Reserve north of Graskop. Flowering recorded in January, March, May, June, November and December. Map 57.

The pencil-thin stems, sparse foliage borne in the upper parts of the plant, relatively long-petioled leaflets and prominently exposed terminal inflorescences are diagnostic for this species. Specimens with very narrow leaflets might be confused with the next species, *R. gracillima*, a species which, however, has shorter petioles and lacks stellate glands.

Herbarium specimens of the Angolan *R. gracilipes* Exell suggest that that species is conspecific with either *R. keetii* or *R. gracillima*. Should it prove to be the former, *R. keetii* will have to be sunk in *R. gracilipes*.

Rhus keetii may be found in short savanna or among rocks in mountain grassveld. The tallest plants are found in the type area near Steelpoort, while those in the Blyde River area are generally less than a metre high and have slightly more crowded leaves.

Vouchers: *Codd & Dyer 7697* (K, LD, P, PRE, SRGH, UPS); *Moffett 1900* (MO, NBG, PRE, UNIN); *Moffett 1998* (MO, NBG, PRE, UNIN); *Moffett 2034* (K, MO, NBG, PRE, UNIN).

69. *Rhus gracillima* Engl. in A. & C. DC., *Monographiae phanerogamarum plantarum* 4: 445 (1883); Diels: 590, 614 (1898); *Schönl.*: 246 (1911); Engl.: 217 (1921); *Schönl.*: 85, t.p. 85 (1930); Burt Davy: 507 (1932). Type: Transvaal, Boshveldt, between Menaarsfarm and Elandsriver, *Rehmann 4882* (Z, lecto.! here designated; BM!, GRA!, K!, isolecto.).

Toxicodendron gracillimum (Engl.) Kuntze: 154 (1891).

Two varieties are distinguished:

69a. var. *gracillima*.

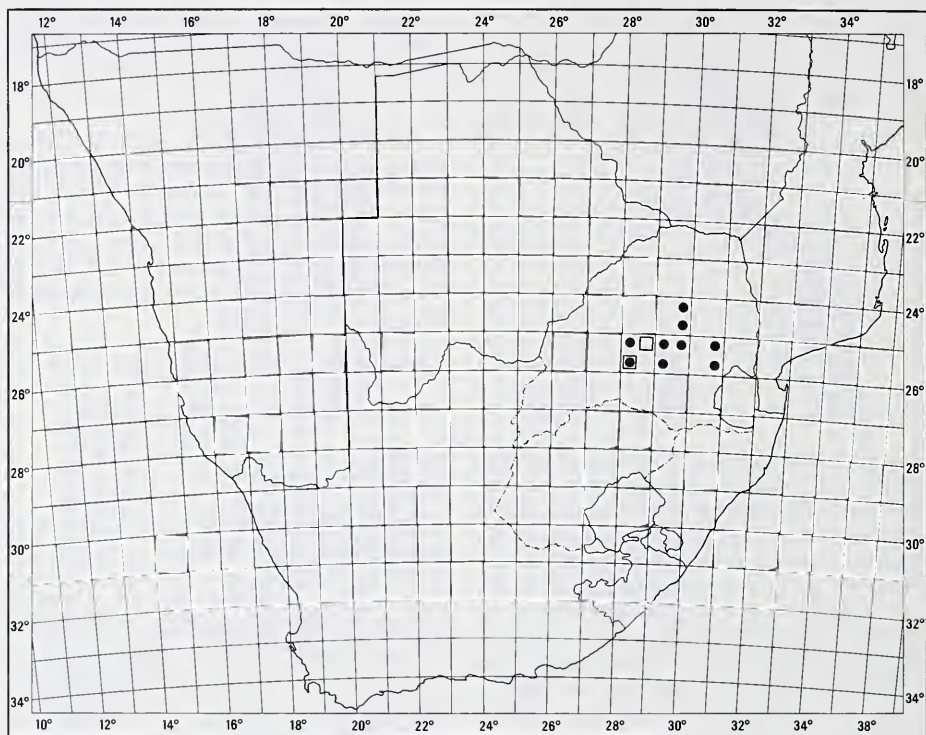
Slender, virgate shrublet up to 0,7 m high. *Branches* thin, ascending hirsute. *Leaves* acutely ascending, widely spaced, not confined to upper parts only, trifoliolate, petiolate; petiole hirtellous, semiterete, flattened above, (3–)9(–11) mm long; leaflets sessile, rigidly coriaceous, concolorous, dull grey-green, scabrid-hirtellous, amphistomatous; lamina acicular, narrowly transverse rhombic to reduplicate, apex sharply mucronate; margin entire, ciliate; venation obscure, midrib prominent above and below; terminal leaflets (21–)51(–110) × 1 mm, lateral leaflets (16–)43(–91) × 1 mm. *Panicles* thinly hirsute, terminal, up to 80 mm long, much branched, few-flowered, prominently exposed. *Flowers* normal, glabrous, styles persistent. *Drupe* circular, obloid to ellipsoid, glabrous, shiny, 4,3 × 3,1 to 5,8 × 3,2 mm.

Found only in and around the northern and north-eastern parts of Pretoria and district. Flowering recorded in January, March and April. Map 58.

The minute, stiff hairs which give the branches and leaves a scabrid feel, are diagnostic for this taxon and the main reason for its separation into two varieties.

Vouchers: *Acocks 11299* p.p. (BR, K, LD, PRE); *Moffett 1849* (K, MO, NBG, PRE, UNIN); *Moffett 1850* (K, MO, NBG, PRE).

69b. var. *glaberrima* Schönl. in *Bothalia* 3:1: 86 (1930); Burt Davy: 507 (1932). Type: Trans-



MAP 58.—□ *Rhus gracillima* var. *gracillima*
● *R. gracillima* var. *glaberrima*

vaal, hills near Wilge River (Witbank District), 1600 m, 18.11.1893, *Schlechter 3746* (Z, holo.!; BM!, BOL!, G!, GRA!, K!, NH!, PRE!, S!, W!, WU!, iso.).

R. filiformis Schinz: 239 (1910).

Differs from var. *gracillima* only by the complete absence of hairs, the slightly longer petioles, (5–)12(–22) mm, and in one morph by the thin filiform leaflets.

Ranges from the Wolkberg near Tzaneen, through the Leolo Mountains of eastern Sekhukhuniland and then westwards past Loskop Dam to the Witbank, Bronkhorstspuit and Pretoria Districts. There are also records from the Nelspruit and Barberton Districts. Flowering recorded in November, December and March. Map 58.

Because of its glabrous leaflets, this variety is easily separated from the typical species. Although they are sympatric in the Pretoria area, growing right next to each other, no intermediates have yet been recorded.

The leaflets of this variety vary from narrow and thread-like to flattish and up to 2 mm wide, in which latter case they may be confused with the former species, *R. keetii*. This variety, however, is generally shorter (below 0.8 m), has leaves not only on the uppermost parts of the plant and has leaflets with shorter petioles and without stellate hairs.

Rhus gracilipes Exell, an Angolan species, may yet have to be included in synonymy here, as the type (*Gossweller 4269* in BM) looks almost identical to *Davidse 5978* from between Rayton and Cullinan.

Vouchers: *Balkwill & Cadman 3008* (NU, PRE); *Buitendag 1242* (NBG, PRE); *Davidse 5978* (MO, PRE, WAG); *Moffett 2259* (K, MO, NBG, PRE).

70. *Rhus pterota* Presl, *Botanische Bemerkungen*: 44 (1844). Type: Eastern Cape Province, Uitenhage, Zwartkopsrivier and Adow (Addo), *Ecklon & Zeyher III6* (PRC, holo. photo.!; GRA!, M!, P!, S!, SAM!, iso.).

R. longispina sensu Eckl. & Zeyh. et auct. p.p.

Much-branched, armed shrub, 1,5 to 2 m high, rarely to 4 m. *Bark* grey, granular, often lichen-covered. Branching squarrose, short shoots ending in sharp spines. *Leaves* fasciculate, crowded on dwarf outgrowths of older branches and spines, trifoliolate, petiolate; petiole winged, flattened or canaliculate above, (7-)17(-39) mm long; leaflets sessile, rigidly coriaceous, slightly discolorous, dull grey-green above, slightly paler below, glabrous, hypostomatous; lamina elliptic to obovate, base cuneate, apex rounded; margin entire, revolute; venation kladodromous, midrib and secondaries prominent, dull yellow above, slightly prominent below, secondaries 2 or 3 per cm, divided towards margin, often somewhat reversed; terminal leaflets (13-)25(-40) × (5-)10(-19) mm, lateral leaflets (9-)19(-26) × (5-)9(-18) mm. *Panicles* furfuraceous, fasciculate, up to 35 mm long, males profusely crowded. *Flowers* normal. *Drupe* elliptic, ellipsoid, slightly asymmetric, glabrous, shiny, fleshy, dark reddish brown, drying black, 5,6 × 4,3 to 6,4 × 4,9 mm, resinous juice pungent, unpalatable. Fig. 36.

Ranges along the coast and adjacent interior from East London to the De Hoop Nature Reserve near Bredasdorp in the southern Cape with a disjunct population 250 km further west in the Postberg Nature Reserve near Saldanha Bay. Flowering recorded in January and in May at Postberg. Map 59.

Rhus pterota is a distinct shrub and quite unrelated to the sometimes sympatric *R. longispina* (no. 42) with which it has long been confused. It differs from the latter species as follows: does not form large, rounded shrubs; leaves and inflorescences markedly fasciated; petioles broadly winged (wider than 1 mm); dull yellow veins above contrast with grey-green surface, secondaries 2 or 3 per cm, divided, often reversed; young growth russet glandular; drupe elliptical, dark reddish brown, drying black, resinous juice pungent, unpalatable.

Although often found on calcareous sands, in the karroid areas it also occurs on clayey gravels. It is said to provide good browse in the Postberg Nature Reserve.

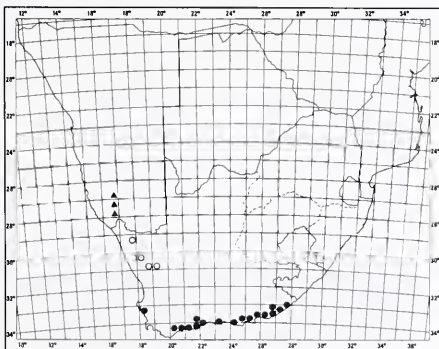
Vouchers: *Dyer 61* (GRA, PRE, PRF); *Moffett 2489* (PRE); *Moffett 2695* (BOL, K, MO, NBG, PRE, STE); *M.C. Olivier 985* (NBG); *Zeyher 2245* (K, P, PRE, SAM).

71. *Rhus horrida* Eckl. & Zeyh., *Enumeratio plantarum africae australis* 2: 151 (1836); Walp. 553 (1842); Sond.: 520 (1860); Engl.: 415 (1883); Diels: 575, 635, t. 7M (1898); Engl.: 203, t. 99M (1921); Schonl.: 88, t. p. 88 (1930). Type: Cape Province, Namaqualand, in sandy places in the Kamiesberg, *Ecklon & Zeyher III35* (S, lecto.! here designated; C!, GRA!, K!, M!, P!, S!, SAM!, TCD!, W!, isolecto.).

Toxicodendron horridum (Eckl. & Zeyh.) Kuntze: 154 (1891).

R. platypoda E. Mey. nom. nud. vide Engl.: 415 (1883) et Schonl.: 88 (1930). *Drège 2990* (P!).

Much-branched, armed shrubs up to 1,7 m high, often forming spiny thickets. *Bark* grey-brown, granular; branching squarrose, branchlets straight, rigid, spinous; young growth russet. *Leaves* fasciculate, trifoliolate, petiolate; petiole densely stellate hairy, laminaceous, shallowly concave, (2-)4(-9) mm long; leaflets sessile, coriaceous, concolorous, dull grey-green, densely stellate hairy, amphistomatous; lamina linear-oblongate to spatulate, shallowly concave; apex obtuse; margin entire; venation impressed, obscure; terminal leaflets (4-)7(-9) × (1-)2(-3) mm, lateral leaflets (3-)5(-8) ×



MAP 59. — ● *Rhus pterota*
○ *R. horrida*
▲ *R. problematodes*

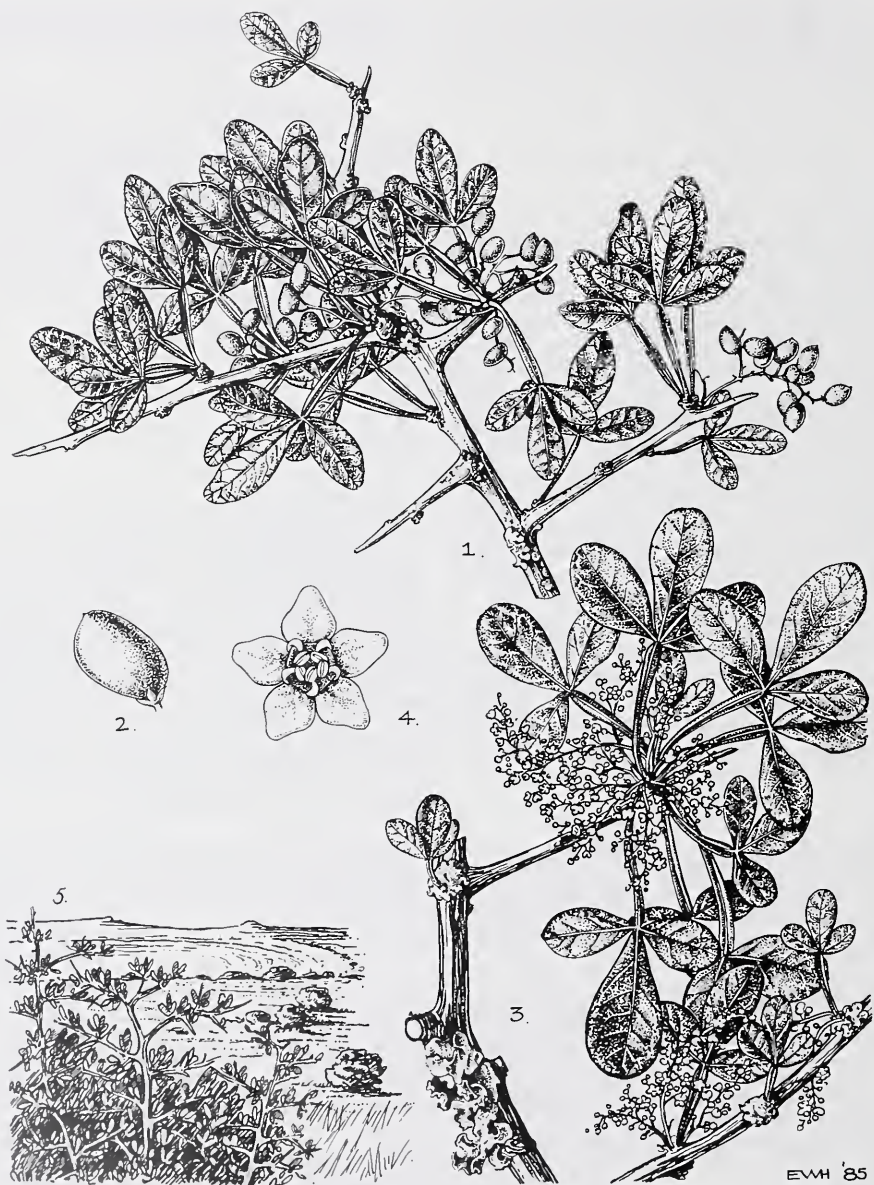


FIGURE 36.—*Rhus pterota*: 1, fruiting branch, $\times 0.8$; 2, drupe, $\times 2.5$ (Moffett 2695); 3, branch with male inflorescence and foliose lichen, $\times 0.8$; 4, male flower, $\times 6.6$ (Moffett 2489); 5, habit. Artist: E. Ward-Hilhorst.

1–2 mm. Inflorescence a much-reduced raceme, up to 10 mm long, often single-flowered, fasciculate, crowded on dwarf outgrowths of often leafless spines. *Flowers* normal, with calyx lobes minutely hairy, styles persistent. *Drupe* asymmetrically obovate, obloid, fleshy, dark reddish brown, drying black, $\pm 6 \times 4$ mm.

Restricted to Namaqualand where it occurs among granite outcrops in the mountains between Rietkloof and Springbokkuil in the southern Kamiesberg and Anenous Pass, west of Steinkopf in the north. Flowering recorded from May to July. Map 59.

This distinct species could only be confused with depauperate specimens of *R. undulata* (no. 45) (*R. celastroides* morph) which also occur in Namaqualand. *R. horrida*, however, consistently has straight, rigid, spinous branchlets, russet new growth, dull non-undulate leaflets which are never glutinous, stellate hairs and blackish drupes.

The spines, russet young growth, stellate hairs, occasional simple, trilobed leaf and reduced racemes indicate a link between this species and the next, *R. problematodes*.

Vouchers: *Acocks 14208* (K, PRE); *Barker 7313* (NBG); *Moffett 3293* (K, MO, NBG, PRE, STE); *Schlechter III79* (BM, BOL, COI, E, GRA, K, L, P, S, W, WAG, Z).

72. *Rhus problematodes* Merxm. & Roessl.
in Mitteilungen der Botanischen Staatssammlung München II: 66, t. 1–15 (1973). Type: Namibia, Lüderitz-South District, Plateau/Aar near Aus, 15.5.1973, *Wiss 3001* (M, holo.!, K!, WIND!, iso.).

Much-branched, armed, decumbent to semi-erect shrublet up to 0.6 m high. *Bark* greyish white, granular, somewhat striate; branching squarrose, branchlets straight, rigid, spinous; young growth russet. *Leaves* minute, sessile, fasciculate on dwarf outgrowths of older branches or alternate on young shoots; lamina narrowly to widely obovate in outline, coriaceous, concolorous, dull grey-green, stellately hairy, amphistomatous, (2–)4(–5) \times (2–)3(–4) mm; margin entire in lower half, upper half variously lobed, usually trisect to tripartite; base cuneate, apex subacute to obtuse; venation impressed, obscure. *Racemes* cauliflorous or among fascicled leaves, ± 10 mm long, often reduced to a single flower. *Flowers* normal, calyx lobes hairy, styles persistent. *Drupe* asymmetrically obovate, ellipsoid, glabrous, $\pm 5 \times 3$ mm. Fig. 37.

Found only in southern Namibia where it occurs in cracks in dolomite on the 'Schwarzalk' terraces in the mountains between Aus and Witputz. Flowering recorded in May, September and December. Map 59.

This species is very distinct. It shares a number of characters with *R. horrida* (no. 71), but its decumbent habit and minute, sessile, lobed leaves easily separate it from that species.

Vouchers: *Dinter 8245* (HBG, K, M, WIND); *Moffett 3350* (BOL, MO, NBG, PRE).

TAXA INSUFFICIENTLY KNOWN

(a) Unpublished (taxa E, F, G and H are not included in the key)

73. *Rhus* taxon A.

Scandent, deciduous shrub up to 5 m high, leaflets 3–5, turning yellow to russet prior to falling. Somewhat similar to *R. transvaalensis* (no. 4) and the entire leaflet morph of *R. montana* (no. 6).

Although I have collected five specimens of this taxon, I have yet to find flowers or fruit.

Vouchers: Lowveld National Botanical Garden, Nelspruit: *Moffett 2053, 2054, 2055, 2109*; Oshoek, Wakkerstroom: *Moffett 2205*.

74. *Rhus* taxon B.

Evergreen, densely foliated shrub, morphologically intermediate between *R. crenata* (no. 36) and *R. natalensis* (no. 37).

This taxon from the coast of southern Natal, is probably a natural hybrid between the above-mentioned two species with which it is sympatric. As I have not yet seen male specimens, I am delaying formalizing its publication.

Vouchers: uMzombe: *Moffett 3142, 3536*; Sea Park: *Moffett 3143*.

75. *Rhus* taxon C.

Much-branched evergreen shrub or small tree up to 4 m high. The leaves are similar to those of *R. guinzii* (no. 38) but the drupes are those of *R. leptodictya* (no. 26).

There are a number of these shrubs in the Lowveld National Botanical Garden at Nelspruit and it is fairly certain that they are natural hybrids between *R. pentheri* (no. 34) and *R. leptodictya* (no. 26).

Specimens from these plants match herbarium material of *R. tenuinervis* Engl. var. *meikleana* R. & A. Fernandes from Malawi.

Vouchers: Nelspruit: *Buitendag 1000* (K, NBG, PRE); *Buitendag 1239* (NBG); Malelane: *Nel 259* (NBG, PRE).

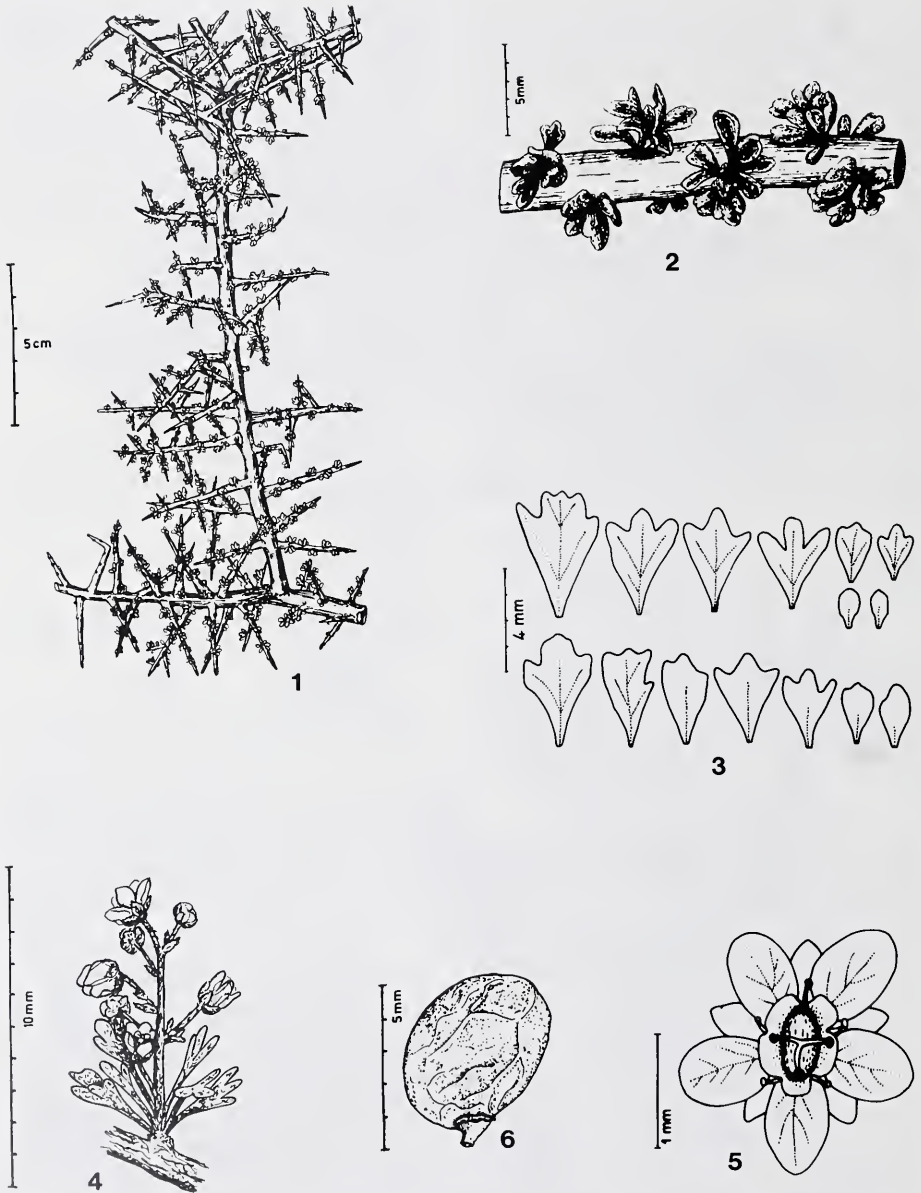


FIGURE 37.—*Rhus problematicus*: 1, branch; 2, branch with fasciated leaves; 3, fasciculate leaves (*Dinter* 8245); 4, male inflorescence (1, 2 & 4, *Wiss* 3002); 5, female flower from above; 6, fruit (5 & 6, *Wiss* 3000). Reproduced with permission from Merxmüller & Roessler (1973) in *Mitteilungen der Botanischen Staatssammlung München* 11: 65–82.

76. *Rhus* taxon D.

Much-branched spreading shrub up to 3,5 m high with elliptic, crenate leaflets. It has discoid, rhombic drupes and could be a natural hybrid between *Rhus leptodictya* (no. 26) and *R. pyroides* var. *pyroides* (no. 15a).

Although known from a number of localities in the north-western Cape and southern Botswana, it is rare and more field work is required before a decision on whether to regard it as a new species can be taken.

Vouchers: Ferndale, Botswana: *Brueckner 446* (KMG, PRE); Klipparani: *Gubb s.n. 1.5.83* (KMG); Pitsane: *Gubb s.n. 2.5.83* (KMG).

77. *Rhus* taxon E.

Much-branched shrub up to 3 m, similar to taxon D but with smaller discoid-lenticular, rhombic fruit. Acocks described it as similar to *R. leptodictya*, but 'leaves blueish, harder in texture, shorter and more toothed'.

This northern Transvaal taxon could be a natural hybrid between *R. guezinii* (no. 38) and *R. leptodictya* (no. 26) and further study *in situ* is required before a decision on its status can be taken.

Vouchers: Towoomba Research Station: *Acocks 8886* (PRE); Willie's Poort: *Biggs 305* (PRE).

78. *Rhus* taxon F.

In Z, there are 3 specimens given the ms. name *R. heeringii* Schinz. They were obtained from the Botanical Museum at Hamburg and all that appears on the label is 'Otavi'. This is probably the same material included by Dinter (1926) in his list of Namibian plants as *R. albomarginata* Sond. sensu Heering.

The specimens are very distinct having bark prominently lenticellate, being divaricately branched, somewhat spiny and having rigid xerophytic leaflets similar to *R. magalismontana* (no. 22a) in texture, but smaller and similar to *R. ciliata* (no. 21) in size and shape. The drupes are oblate, obloid to ellipsoid and shiny brown.

No other material like this is known and a search of the Otavi area is needed before its status can be finalized.

Voucher: *Schinz 29* (Z).

79. *Rhus* taxon G.

A glabrous shrub up to 1,5 m high with long-petioled leaves and relatively long, coriaceous, oblanceolate, entire leaflets. Petiole 20–40 mm long, terminal leaflets 60–100 mm long. Drupes globoid, ± 5,0 mm in diameter.

This very distinct plant, which could be a natural hybrid with *R. keetii* (no. 68) as one of the parent species, has been collected in two different localities not far from each other in the eastern Transvaal. It is rare and as only female plants are known, it needs further collecting and study.

Vouchers: near Blyde River Nature Reserve: *Leistner 3468* (LD, NBG, PRE); Onverwacht, Steelpoort: *Van Jaarsveld 5966* (NBG).

80. *Rhus* taxon H.

Dwarf, decumbent, rhizomatous shrublet, branches up to 0,3 m long. Leaves rigidly coriaceous, leaflets linear to narrowly oblanceolate, entire, apex sharply acuminate. Petiole 4–6 mm long, terminal leaflets 35–40 × ± 2 mm.

This unmistakable plant has the habit and sharply pointed leaflet apex of *R. pondoensis* (no. 65) and distinct venation of *R. wilmsii* (no. 67). It occurs on serpentine, and as only male material is known, needs further study *in situ* before it can be published as a new species.

Voucher: Queen's River, Barberton: *Balkwill & Cadman 2611* (NU).

(b) Published

1. *Rhus acutidens* Engl.: 423 (1883); Diels: 578, 623 (1898); Schönl.: 40, t. p. 40 (1930); Burt Davy: 501 (1932). Type: Transvaal, Houtbosch, *Rehmann 5558* (Z, lecto.! here designated; K!, iso.).

Although both Schönl. and Burt Davy op. cit., suggested that this species was a hybrid of *R. dentata*, it could possibly be an aberrant leaf morph of *R. grandidens* (no. 5). *Codd 2099* (PRE), from the Piet Retief District, has the occasional unusually truncate leaf as in Rehmann's type.

2. *Rhus carnosula* Schönl. var. *longipetiolata* Schönl.: 42 (1930). Type: Eastern Cape Province, 8 miles east of East London, *Dyer 1985* (GRA, lecto.! here designated; K!, isolecto.).

I have been unable to find this taxon in the field. Apart from the longer petiole, leaves of some of the syntypes cited by Schönl. have entire margins and the shrubs become up to 4,5 m high. It is probably a natural hybrid with *R. chirindensis* (no. 2) as one parent, a suggestion also made by Schönl. in the original publication.

3. *Rhus colensoana* Engl.: 208 (1921); Schönl.: 50 (1930) ut. syn. *R. rupicola* Wood & Evans. Type: Natal, Colenso, rocky plateau, unknown collector (B?).

I have been unable to find any material that could serve as the type for this name. Engler stated it was allied to *R. truncata* Schinz, so it is probably *R. rigida* var. *dentata* (no. 10c).

4. *Rhus conrathii* Burt Davy: 508 (1932). Type: Transvaal, Witwatersrand, Modderfontein, near stream, 28.II.1897, *Conrath 98* (K, holo!).

Although the type specimen resembles *R. anchietae* Fic. ex Hiern from Angola, I take it to probably be a coppice shoot of *R. pyroides* var. *gracilis* (no. 15c). Male inflorescences are often borne on young shoots, as in this case, and may confuse herbarium taxonomists.

5. *Rhus gueinzii* Sond. var. *brevifoliolata* Burt Davy: 507 (1932). Type: Transvaal, Waterberg, farm Rondebosch near Potgietersrus, *Burt Davy 2175* (BOL, lecto!, here designated).

The type specimen has the features one would expect from a cross between *R. leptodictya* (no. 26) and *R. engleri* (no. 23). These two species adjoin one another in the Potgietersrus District and as I have not seen another specimen like it, take this taxon to be just such a natural hybrid.

6. *Rhus milleri* R. & A. Fernandes: 188, t. 48 (1965a); R. & A. Fernandes: 610 (1966). Type: Botswana, Kanye, Pharing, *Miller B/948* (K, holo!; PRE!, iso.).

Despite an intensive search in the type locality, I could not find this species. The type specimen resembles both *R. magalimantana* subsp. *magalimantana* (no. 22a) and *R. pyroides* var. *pyroides* (no. 15a). Both these species occur at Pharing and it is therefore highly likely that *R. milleri* is a natural hybrid between them.

7. *Rhus ntsubanensis* Schönl.: 44 (1930). Type: Transkei, Lusikisiki, Ntsubane Forest Station, *Fraser sub Schonland 5138* (GRA, lecto!, here designated; K!, PRE!, PRF!, isolecto.).

This species was based on a single collection from an only plant and although it is unmistakable, I could not find it in the type area. It appears to be a natural hybrid between *R. discolor* (no. 54) and either *R. nebulosa* forma *nebulosa* (no. 12a) or *R. carnosula* (no. 8), all of which occur in the area.

8. *R. pubescens* Thunb.: 52 (1794). Type: unknown.

Thunberg erased the name *R. pubescens* from his catalogue and probably transferred the specimen to another taxon. There is therefore no type for the name in the Thunberg Herbarium.

Antique specimens labelled *R. pubescens* Thunb. in LD, S and SBT are *R. laevigata* var. *villosa* (no. 11b).

9. *Rhus sericea* Eckl. & Zeyh.: 146 (1836); Walp.: 552 (1842). Type: Eastern Cape Province, Albany, Hassagaybosch, *Ecklon & Zeyher 1105* (S, lecto!, here designated; C!, SAM!, isolecto.).

I have been unable to find any material, either in the field or in herbaria, that matches the type. I suspect it is a natural hybrid with putative parents being *R. rehmanniana* var. *glabrata* (no. 18b), *R. pyroides* var. *pyroides* (no. 15a) or *R. laevigata* var. *laevigata* forma *laevigata* [no. 11a(i)].

10. *Rhus villosa* L.f. var. *glabrata* Sond.: 510 (1860).

Sonder (1860) equated this variety with *R. pubescens* Thunb., whose type is no longer extant. The other specimens cited by Sonder are *R. laevigata* var. *laevigata* forma *laevigata* [no. 11a(i)].

11. *R. wildingii* Dehnh.: 172 (1839); Walp.: 551 (1842).

I have as yet been unable to locate a type for this species. Walpers grouped it with *R. rosmarinifolia* (no. 55), whereas Engler: 442 (1883) and Schonland: 74 (1930) cited it as a synonym for *R. viminalis* = *R. lancea* (no. 30).

Excluded species

Rhus alatum Thunb. = *Hippobromus* sp.
R. cirrhiflorum Thunb. = *Rhoicissus* sp.
R. concolor Presl ex Sond. = *Ozoroa* sp.
R. digitatum Thunb. = *Rhoicissus* sp.
R. dimidiatum Thunb. = *Rhoicissus* sp.
R. dispar Presl ex Sond. = *Ozoroa* sp.
R. knysniaca Schinz = *Allophylus* sp.
R. longifolia Sond. = *Protorhus* sp.
R. mucronifolia Sond. = *Ozoroa* sp.
R. obliquum Thunb. = *Clausena* sp.
R. paniculosa Sond. = *Ozoroa* sp.
R. pauciflorum Thunb. = *Hippobromus* sp.
R. salicifolia Presl ex Sond. = *Ozoroa* sp.
R. salicina Sond. = *Ozoroa* sp.
R. spicatum Thunb. = *Allophylus* sp.
R. thunbergii Hook. = *Heeria* sp.
R. tridentatum Thunb. = *Rhoicissus* sp.

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