

Notes on South African Cruciferae

by

W. Marais

ABSTRACT

A new genus in the section Arabideae, sixteen new species and four new varieties are described, and eleven new combinations made:—*Heliophila arenaria* Sond. var. **acocksii** —var. **glabrescens** (Schulz) (*H. sabulosa* Schltr. var. *glabrescens* Schulz), —var. **agtertuinensis** (Schulz) (*H. maximilianii* Schltr. var. *agtertuinensis* Schulz), *H. diffusa* (Thunb.) DC. var. **flacca** (Sond.) (*H. flacca* Sond.), *H. elata* Sond. var. **pillansii**, *H. latisiliqua* E. Mey. ex Sond. var. **macrostylis** (E. Mey. ex Sond.) (*H. macrostylis* E. Mey. ex Sond.), *H. linearis* (Thunb.) DC. var. **linearifolia** (Burch. ex DC.) (*H. linearifolia* Burch. ex DC.), —var. **reticulata** (Eckl. & Zeyh.) (*H. reticulata* Eckl. & Zeyh.), *H. meyeri* Sond. var. **minor**, *H. pusilla* L.f. var. **macrosperma**, —var. **setacea** (Schltr.) (*H. setacea* Schltr.), —var. **lanceolata** (Adamson) (*H. lanceolata* Adamson), *H. alpina*, *H. cedarbergensis*, *H. cuneata*, *H. esterhuyseniae*, *H. eximia*, *H. filicaulis*, *H. katbergensis*, *H. obibensis*, *H. promontorii*, *H. rimicola*, *H. schulzii*, *Lepidium divaricatum* Ait. subsp. **trifurcum** (Sond.) (*L. trifurcum* Sond.), *L. basuticum*, *L. suluense*, *L. transvaalense*, *Thlaspeocarpa nama uensis*, APLANODES, type *A. doidgeana*, *A. sisymbrioides* (Schltr.) (*Heliophila sisymbrioides* Schltr.) *Brachycarpaea juncea* (Berg.) (*Cleome juncea* Berg.).

In continuation of my studies on the South African Cruciferae for the Flora of Southern Africa (see *Bothalia* 8: 166–169, 1964), further combinations and new descriptions are required.

In the lists of specimens cited, no herbarium reference is given for collections represented in the National Herbarium, Pretoria.

HELIOPHILA

Heliophila arenaria Sond. in Abh. Ges. Naturw. Hamb. 1: 262 (1846). Type: *Drege* 7568 (K!).

(a) var. **arenaria**.

H. arenaria Sond., l.c. (1846); Fl. Cap. 1: 53 (1860). *H. maximilianii* Schltr. in Bot. Jahrb. 27: 136 (1899). Type: *Schlechter* 8229 (B!). *H. sabulosa* Schltr., l.c. 138 (1899). Type: *Schlechter* 8339 (B!). *H. lightfootii* Phillips in Ann. S. Afr. Mus. 9: 111 (1913). Type: *Phillips* 7683 (SAM!).

(b) var. **acocksii** Marais, var. nov., a typo siliquis crassioribus marginibus fere rectis et stylis in fructu longioribus differt.

Type: Calvinia, Lokenburg, *Acocks* 19750 (PRE, holo.; K).

CAPE.—Vanrhynsdorp: Tigerberg, *Lewis* 4959 (SAM); Urionskraal, *Barker* 8554 (NBG). Calvinia: Lokenburg, *Acocks* 19750; *Leistner* 317; between Nieuwoudtville and Oorlogskloof, *Leipoldt* 3960; between Nieuwoudtville and Graskop, *Lewis* in BOL 19823 (BOL); Botterkloof Pass, *Maguire* 196, p.p. (NBG); *Lewis* 3124 (SAM); 3125 (SAM); *Compton* 20898 (BOL, NBG). Clanwilliam: Brandewyn River, *Maguire* 245 (NBG); Pakhuis, *Compton* 19972 (NBG); between Pakhuis and Wupperthal, *Bolus* s.n. (BOL); *Leipoldt* 3968; between Pakhuis and Bidouw, *Bolus* 8922; Wupperthal, *Thode* 1960; between Nardouws Pass and Brakvlei, *Marais* 1436.

(c) var. **glabrescens** (Schulz) Marais, comb. nov.

H. sabulosa var. *glabrescens* Schulz in Bot. Arch. 31: 541 (1931). Type: *Stephens & Glover* 8705 (K!).

(d) var. **agtertuinensis** (Schulz) Marais, comb. nov.

H. maximilianii var. *agtertuinensis* Schulz, l.c., 31: 540 (1931). Type: *Schlechter* 10858 (B!).

Heliophila diffusa (Thunb.) DC., Syst. 2: 685 (1821). Type: *Thunberg* Herb. No. 14956.

(a) var. **diffusa**.

H. diffusa (Thunb.) DC., l.c. (1821); Sond. in Abh. Ges. Naturw. Hamb. 1: 220 (1846); Fl. Cap. 1: 42 (1860). *H. peltaria* DC., l.c. (1821); Sond. in Abh. Ges. Naturw. Hamb. 1: 222 (1846); Fl. Cap. 1: 43 (1860). Type: *Thunberg* Herb. No. 14958. *H. capensis* (L.f.) C. A. Smith in Kew Bull. 1931: 155 (1931), non (L.f.) Kuntze (1898).

Lunaria diffusa Thunb., Prodr. 107 (1800). *L. pinnata* Thunb., l.c. (1800). Type: *Thunberg* Herb. No. 14958.

Peltaria capensis L.f., Suppl. 296 (1781). Type: LINN 829.3 or 829.4.

(b) var. **flacca** (Sond.) Marais, stat. nov.

H. flacca Sond. in Abh. Ges. Naturw. Hamb. 1: 223, t.22, f.1 (1846); Fl. Cap. 1: 43 (1860). Type: *Ecklon & Zeyher* 69 (K!).

Heliophila elata Sond. in Abh. Ges. Naturw. Hamb. 1: 247 (1846). Type: *Drege* 7566a (K!).

(a) var. **elata**.

H. elata Sond., l.c. (1846); Fl. Cap. 1: 49 (1860).

(b) var. **pillansii** Marais, var. nov., a typo petalis et filamentis lateralibus exappendiculatis, sepalis interioribus basi non saccatis, foliis saepe lobatis, indumento plerumque densiore et longiore differt.

Type: Cape: Piketberg District, between Avontuur and Zebra Kop, *Pillans* 7603 (BOL, holo.; GRA, K).

CAPE.—Piketberg: between Avontuur and Zebra Kop, *Pillans* 7603 (BOL, GRA, K); *Pillans* 7506 (BOL); Kapteinskloof, *Pillans* 8017. Clanwilliam: *Edwards* in BOL 14450; 14451 (BOL); Elands-kloof, *Lewis* in BOL 27109 (BOL); Pakhuis Pass, *Compton* 6950 (BOL, NBG); *Lewis* in BOL 27125 (BOL); Middelburg, *Esterhuysen* 7179 (BOL, K); *Compton* 12693 (NBG); *Esterhuysen* 2468; Sneeu-berg, *Esterhuysen* 13099 (BOL).

Heliophila latisiliqua E. Mey. ex Sond. in Abh. Ges. Naturw. Hamb. 1: 224 (1846). Type: *Drege* 585 (B!).

(a) var. **latisiliqua**.

H. latisiliqua E. Mey. ex Sond., l.c. (1846); Fl. Cap. 1: 43 (1860).

Several-stemmed herbs with erect or procumbent stems up to 35 cm high. Leaves 1–5 cm long, the lobes 0.2–2 cm long. The flowers are bigger than in var. *macrostylis* but, though the filaments are shorter, the anthers are longer. Distributed from the Hex River Mts. to Calvinia.

(b) var. **macrostylis** (E. Mey. ex Sond.) Marais stat. nov.

Heliophila macrostylis E. Mey. ex Sond. in Abh. Ges. Naturw. Hamb. 1: 225 (1846); Fl. Cap. 1: 43 (1860). Type: *Drege* s.n. (K!).

Stout erect herbs up to 90 cm high, usually with a single leafy stem. Leaves up to 10 cm long, the lobes 2.5–4 cm long. The flowers are small, but the filaments are proportionately much longer than those of var. *latisiliqua*. Confined to Namaqualand.

Heliophila linearis (Thunb.) DC., Syst. 2: 697 (1821). Type: Thunberg Herb. No. 15167 (UPS!).

(a) var. **linearis**.

H. linearis (Thunb.) DC., l.c. (1821); Sond. in Abh. Ges. Naturw. 1: 238 (1846); Fl. Cap. 1: 47 (1860). *H. linearifolia* var. *hirsuta* Burch. ex DC., l.c. 692 (1821). Type: Burchell 5518 (K!). *H. falcata* Eckl. & Zeyh., Enum. No. 77 (1834-5). Type: Ecklon & Zeyher 77 (K!). *H. linearifolia* var. *pilosiuscula* Sond. in Abh. Ges. Naturw. Hamb. 1: 253 (1846); Fl. Cap. 1: 51 (1860), partly, as to Burchell 5518. *H. tenuis* N. E. Br. in Kew Bull. 1894: 99 (1894). Type: Pappe s.n. (K!).

Cheiranthus linearis Thunb., Prodr. 108 (1800). Type: Thunberg Herb. No. 15167.

(b) var. **linearifolia** (Burch. ex DC.) Marais, comb. nov.

H. linearifolia Burch. ex DC., Syst. 2: 692 (1821), excluding var. *hirsuta*; Sond. in Abh. Ges. Naturw. Hamb. 1: 252 (1846); Fl. Cap. 1: 51 (1860), partly, excluding var. *pilosiuscula*, and var. *filifolia* as to its basionym. *H. linearifolia* var. *dolichocarpa* Schulz in Bot. Arch. 31: 540 (1931). Type: Rogers s.n. (K!). *H. elongata* Adamson in Fl. Cape Penins. 417 (1950), partly, excluding basionym of var. *filifolia*, non (Thunb.) DC.

(c) var. **reticulata** (Eckl. & Zeyh.) Marais, comb. nov.

H. reticulata Eckl. & Zeyh., Enum. No. 90 (1834-5); Sond. in Abh. Ges. Naturw. Hamb. 1: 243 (1846); Fl. Cap. 1: 48 (1860). Type: Ecklon & Zeyher No. 90 (SAM!). *H. christieana* Schulz in Bot. Arch. 31: 530 (1931). Type: Christie 49 (B!). *H. cornigera* Fourcade in Trans. Roy. Soc. S. Afr. 21: 90 (1932). Type: Fourcade 1815a (BOL!).

Heliophila meyeri Sond. in Abh. Ges. Naturw. Hamb. 1: 226 (1846). Type: Drege s.n. (K!).

(a) var. **meyeri**.

H. meyeri Sond., l.c. (1846); Fl. Cap. 1: 44 (1860). *H. dentifera* Sond. in Abh. Ges. Naturw. Hamb. 1: 219 (1846); Fl. Cap. 1: 42 (1860); Adamson in Fl. Cape Penins. 415 (1950). Type: Ecklon & Zeyher s.n. (SAM!).

(b) var. **minor** Marais, var. nov., a typo floribus et fructibus in partibus omnibus minoribus, filamentis omnibus basi dilatatis papillatis sine appendice papillata differt.

Type: Cape: Swellendam District, Bonnievale, Leighton in BOL 21146 (BOL, holo.).

CAPE.—Swellendam: Bonnievale, Leighton in BOL 21146 (BOL). Worcester: Audensberg, Compton 9762 (NBG); Esterhuysen 3428 (K); Louwshoek Mts., Stokoe in SAM 59125 (SAM).

These plants differ from var. *meyeri* mainly in size. Since the appearance of the plants is reminiscent of some of the other species with smaller white flowers like *H. pendula* and *H. diffusa*, rather than of var. *meyeri*, it is desirable to give it a name.

Heliophila pusilla L.f., Suppl. 297 (1781). Type: Thunberg Herb. Linn. 840.4.

(a) var. **pusilla**.

H. pusilla L.f., l.c. (1781); Sond. in Abh. Ges. Naturw. Hamb. 1: 210 (1846); Fl. Cap. 1: 40 (1860); Adamson in Fl. Cape Penins. 414 (1950). *H. divaricata* Banks ex DC., Syst. 2: 687 (1821); Sond. in Abh. Ges. Naturw. Hamb. 1: 236 (1846); Fl. Cap. 1: 46 (1860). Type: Masson s.n. (BM!).

(b) var. **macrosperma** *Marais*, var. nov., a typo floribus majoribus, filamentis lateralibus papillatis, ovarii stylo longiore, ovulis paucioribus, siliquis latioribus et seminibus majoribus differt.

Type: Cape: Stellenbosch District, *Prior* s.n. (K, holo.).

CAPE.—Stellenbosch: *Prior* s.n. (K); Golf Course, *Strey* 665; Stellenbosch flats, *Garside* 158; 410 (K); Vanderstel, *Smith* 3207; Faure, *Parker* 3973 (BOL, K); Firgrove, *Compton* 13453 (BOL, NBG); Elsenburg, *Marloth* 9281, partly; 9281b; Simondium, *Morrison* in STE 11109 (STE). Tulbagh: De Hoek, Saron, *Barker* 5838 (BOL, NBG). Wellington: *Compton* 11624 (NBG). Without exact locality: between Paarl and Pont, *Drege* 7555.

(c) var. **setacea** (*Schltr.*) *Marais*, comb. nov.

H. setacea *Schltr.* in *Bot. Jahrb.* 49: 417 (1913). Type: *Schlechter* 4992 (B!).

(d) var. **lanceolata** (*Adamson*) *Marais*, comb. nov.

H. lanceolata *Adamson* in *J. S. Afr. Bot.* 7: 197 (1941). Type: *Adamson* 2973 (BOL!).

Heliophila alpina *Marais*, sp. nov. distincta.

Herba perennis parva, 10–15 cm alta, caulibus pluribus procumbentibus, partibus junioribus puberulis. *Folia* 5–9 mm longa, pinnatim 5–7 lobata, stipulis minutis. *Inflorescentia* pseudoterminalis, pauciflora; pedicelli breves, ± interpetiolares, bracteis 2 minutis subtendentes, saepe rami floriferi laterales pedicellos superantes. *Sepala* 4·5–5 mm longa, oblonga, puberula; exteriora 2 apice cucullata, breviter corniculata, interiora 2 basi saccata. *Petala* 6–7 mm longa, 2·5–3 mm lata, anguste obovata. *Filamenta* 2·4–3 mm et 3–4 mm longa. *Antherae* 1–1·2 mm longae. *Ovarium* anguste oblongo-ellipticum, replo minute puberulo; stylus longus; stigma breviter bilobatum; ovula 8–12. *Siliquae* 1–1·5 cm longae, 3–4 mm latae, oblongae vel lineari-oblongae, brevissime stipitatae; valvae 1-nervae; stylus 2–3 mm longus, robustus, apicem versus attenuatus. *Semina* 2·3–2·8 mm longa, 1·5–1·7 mm lata, ambitu oblongo-ovata, papillosa.

Type: Basutoland: Thaba Ntlenyana, *Guillarmod* 2358 (PRE, holo.).

Procumbent, several-stemmed perennial herbs. *Stems* 10–15 cm long, the young parts puberulous, glabrescent. *Leaves* 5–9 mm long, pinnately 5–7-lobed with linear, entire lobes, probably ± fleshy, minutely puberulous, glabrescent, minutely stipulate. *Inflorescence* pseudo-terminal, few-flowered, the pedicels ± interpetiolar, subtended by 2 minute bracts, often overtopped by lateral flowering branches. *Sepals* 4·5–5 mm long, ovate-oblong to oblong-elliptic, puberulous; the outer 2 cucullate, shortly horn-tipped; the inner 2 saccate and with broad membranous margins. *Petals* 6–7 mm long, 2·5–3 mm broad, narrowly obovate, cuneate, very minutely puberulous at the base outside. *Filaments* 2·4–3 mm and 3–4 mm long, the 2 short ones slightly thickened at the base and with a glandular area. *Anthers* 1–1·2 mm long. *Ovary* narrowly oblong-elliptic, subsessile, finely puberulous on the replum; style long; stigma shallowly 2-lobed; ovules 8–12. *Fruits* 1–1·5 cm long, 3–4 mm broad, oblong or linear-oblong, very shortly stipitate; valves 1-nerved, net-veined, bulged by the seeds; stipe and replum puberulous; style 2–3 mm long, stout, tapering. *Seeds* 2·3–2·8 × 1·5–1·7 mm, oblong-oval, subcompressed; seed-coat minutely papillose.

A very distinctive plant found on screes and steep grassy slopes at altitudes between 9,800 and 11,000 ft. Collected in fruit with a few late flowers in January; in fruit only in March.

CAPE.—Barkly East: Ben McDhui, *Galpin* 6573.

BASUTOLAND.—Thabana Ntlenyana, *Guillarmod* 2358.

Heliophila cedarbergensis *Marais*, sp. nov., a *H. scoparia* Burch. habitu patenti vel patulo, inflorescentiis intercalaribus, fructibus brevioribus seminibus paucioribus differt.

Fruticulus patens, dense virgatus, glaber. *Folia* 0.5–3 cm longa, 1–2.5 mm lata, oblanceolata vel anguste elliptico-lanceolata, levia vel cartilagineo-papillata, stipulis minutis. *Inflorescentia* intercalaris. *Sepala* 4.5–5.3 mm longa, elliptica vel elliptico-obovata; exteriora 2 apice cucullata, breviter corniculata, interiora 2 basi saccata. *Petala* 10–11.5 mm longa, 4.5–5 mm lata, obovato-spathulata, longe unguata. *Filamenta* exappendiculata. *Antherae* 1.5–1.8 mm longae. *Ovarium* lanceolatum, stipitatum, ovulis 10–12. *Siliquae* 2–4 cm longae, 2.5–3.5 mm latae, lanceolatae, breviter stipitatae; valvae 1-nervatae; stylus 2.5–5 mm longus, subulatus. *Semina* 2.5 mm longa, 1.6–1.8 mm lata, ovalia, compressa, papillata.

Type: Cape: Clanwilliam District, Cedarberg, Wolfberg, *Esterhuysen* 20566 (BOL, holo.; K, PRE).

Trailing or densely twiggy, woody shrublets; branches glabrous with red-brown bark, smooth or finely cartilaginous-papillate. *Leaves* 0.5–3 cm long, 1–2.5 mm broad, oblanceolate to narrowly elliptic-lanceolate, acute or acuminate, mucronate, smooth or finely cartilaginous-papillate, minutely stipulate. *Inflorescence* few- to several-flowered, terminal or apparently so but soon over-topped by new leafy growth of the central axis, i.e., intercalary. *Pedicels* 0.9–1.6 cm long, erect or ascending, subtended by 2 minute filiform bracts. *Sepals* 4.5–5.3 mm long, 1.8–2.3 mm broad, elliptic to elliptic-obovate; outer 2 cucullate and shortly horn-tipped, with membranous margins, inner 2 membranous, saccate. *Petals* 10–11.5 mm long, 4.5–5 mm broad, obovate-spathulate, rounded, long-clawed. *Filaments* 3.5 mm and 4.5–5.5 mm long. *Anthers* 1.5–1.8 mm long. *Ovary* lanceolate, stipitate; style long, stigma capitate; ovules 10–12. *Fruits* 2–4 cm long, 2.5–3.5 mm broad, lanceolate, shortly stipitate; valves flat, 1-nerved, slightly bulged by the seeds; style 2.5–5 mm long, stoutly subulate. *Seeds* 2.5 mm long, 1.6–1.8 mm broad, oval, compressed, papillate.

Growing among rocks and boulders or on shady ledges at an altitude of 4,000–5,500 ft. Collected in flower in October; flowers described as white or pink.

CAPE.—Clanwilliam: Cedarberg, Wolfberg, *Esterhuysen* 20566; *Esterhuysen* 22448 (BOL, K); slopes below Wolfberg Cracks, *Esterhuysen* 29974 (BOL); Tafelberg, *Esterhuysen* 30000 (BOL).

Heliophila cuneata *Marais*, sp. nov., a *H. integrifolia* L. planta suffruticosa perenni, floribus multo majoribus, fructibus latioribus et seminibus majoribus; a *H. lineari* (Thunb.) DC. forma foliorum, fructibus multo latioribus stylis longioribus, et ovulis paucioribus differt.

Frutex diffusus usque 1.3 m altus, ramis junioribus sparse pilosis. *Folia* 3–6.5 mm longa, 1.5–3 cm lata, cuneata vel obovato-cuneata, in parte superiore 5–9 dentata, superne sparse vel dense pilosa vel hirsuta, subtus minus dense pilosa vel glabra. *Racemus* terminalis, multiflorus, initio contractus, denique elongatus et laxus. *Sepala* 7–9.5 mm longa, lineari-oblonga, dense pilosa; exteriora 2 apice cucullata; interiora 2 basi saccata, marginibus membranaceis. *Petala* 10–16.5 mm longa, 6.5–11.5 mm lata, obovata, rotundata, breviter unguiculata, appendicibus papillosis. *Filamenta* 4–5.5 mm, 5.5–7 mm longa, breviora 2 appendicibus magnis instructa. *Antherae* 3–3.5 mm longae. *Ovarium* oblongum, stylo longo gracili, ovulis 6–8. *Siliquae* 6–8 cm longae, 7–8 mm latae, lineari-oblongae; valvae 3-nervae; stylus 1.1–1.4 cm longus, robuste subulatus. *Semina* 6 mm longa, 5 mm lata, subrotundata, compressa, alata.

Type: Cape: Stellenbosch District, Swartboskloof, *Taylor* 5839 (PRE, holo.).

Straggling shrub up to 1.3 m high with long weak branches; young branches sparsely pilose. *Leaves* 3–6.5 cm long, 1.5–3 cm broad, cuneate or obovate-cuneate, gradually narrowed below, 5–9 toothed or lobulate-dentate in the upper half; sparsely

to densely pilose or hirsute on the upper surface, less densely hairy to glabrous underneath. *Racemes* terminal, many-flowered, contracted in flower; elongate and very lax in fruit; rhachis glabrous. *Sepals* 7–9.5 mm long, linear-oblong, densely pilose; outer 2 cucullate; inner 2 saccate with broad membranous margins. *Petals* 10–16.5 mm long, 6.5–11.5 mm broad, obovate, rounded, shortly clawed, each with a papillate appendage. *Filaments* 4–5.5 mm and 5.5–7 mm long, the short ones each with a large appendage. *Anthers* 3–3.5 mm long. *Ovary* oblong with a long, slender style, as long as or longer than the ovary; ovules 6–8. *Fruits* 6–8 cm long (including the style), 7–8 mm broad, linear-oblong with straight margins; valves flat, strongly 3-nerved (sometimes with 2 or 4 additional weaker veins); style 1.1–1.4 cm long, stoutly subulate. *Seeds* 6 mm long, 5 mm broad, subcircular, winged.

The flowers are blue with a white centre, produced in spring. Known only from the one locality where it was first recorded in 1960, growing among boulders in scrub vegetation.

CAPE.—Stellenbosch: Jonkershoek, Swartboskloof, Taylor 5839; Marais 1451 (K); Van der Merwe 22-58; Van der Merwe s.n.

Heliophila esterhuyseniae Marais, sp. nov., a *H. dregeana* Sond. floribus majoribus, fructibus non moniliformibus differt.

Fruticulus lignosus confertus, erectus vel patens, glaber, 0.6–1 m altus. *Caules* glabri, angulati vel anguste alati. *Folia* 1–4 cm longa, 1.5–4 mm lata, lineari-lanceolata vel elliptico-lanceolata, sessilia, levia vel marginibus costaque subtiliter cartilagineo-papillatis, stipulis minutis. *Inflorescentia* intercalaris, floribus pluribus, pedicellis bracteis minutis 2 subtendentibus. *Sepala* 5.3–6 mm longa, ovata vel obovata, membranacea, 3-nervata; interiora 2 basi saccata. *Petala* 11–14 mm longa, 6.5–7.5 mm lata, rotundato-obovata, unguiculata. *Filamenta* exappendiculata. *Antherae* 1.5–2 mm longae. *Ovarium* lanceolatum, ovulis 4–8. *Siliquae* 0.8–2.8 cm longae, 2.5–4 mm latae, lanceolatae, breviter stipitatae, erectae; valvae 1-nervatae, denique asperae et naviculares; stylus 1.5–5 mm longus, robuste subulatus. *Semina* 3.5–4 mm longa, 3.3–2 mm lata, citriformia, papillosa.

Type: Cape: Paarl District, Wemmershoek Pk., Esterhuysen 11290 (BOL, holo.).

Dense, erect or trailing, woody shrublets 0.6–1 m high. *Stems* angled or narrowly winged by the decurrent leaf-margins. *Leaves* 1–4 cm long, 1.5–4 mm broad, linear-lanceolate to elliptic-lanceolate, sessile, smooth or the margins and the midrib, which is prominent on the lower surface, finely cartilaginous-papillate; subtended by 2 minute stipules. *Inflorescence* intercalary, few- or several-flowered, each pedicel subtended by 2 minute bracts; the old pedicels from previous seasons' flowers persistent. *Sepals* 5.3–6 mm long, 2.3–3 mm broad, membranous, 3-nerved; outer 2 obovate, cucullate, shortly horn-tipped; inner 2 ovate, strongly saccate. *Petals* 11–14 mm long, 6.5–7.5 mm broad, subcircular-obovate, clawed. *Filaments* 4–4.3 mm and 4.5–4.8 mm long. *Anthers* 1.5–2 mm long. *Ovary* lanceolate, shortly stipitate; style long, slender; ovules 4–8. *Fruits* 0.8–2.8 cm long, 2.5–4 mm broad, lanceolate, shortly stipitate, erect; valves 1-nerved, at first smooth, later rough, \pm ridged and warted, bulged by the seeds, eventually boat-shaped; style 1.5–5 mm long, stoutly subulate. *Seeds* 3.5–4 mm long, 3.3–2 mm broad, citriform, papillose.

Growing on rock ledges in partial shade, old screes, at foot of cliffs or on stream-banks. The flowers are pale blue, mauve or white, produced in spring.

CAPE.—Ceres: Witelskloof, Esterhuysen 26396 (BOL); Skurfdeberg, Esterhuysen 14724 (BOL). Worcester: Slanghoek Mts., Esterhuysen 22306 (BOL, K); Stettynskloof, Esterhuysen 17629 (BOL); Hex River Mts., Moraine-kloof, Esterhuysen 28073 (BOL). Paarl: Wemmershoek Pk., Esterhuysen 11290 (BOL). Caledon: Fransch Hoek Mts., Roesbos Pk., Esterhuysen 29422 (BOL). Paarl-Worcester: Du Toitskloof, Esterhuysen 30359 (BOL).

***Heliophila eximia* Marais, sp. nov. distincta.**

Herba perennis, scandens?, glabra. *Folia* 4·5–6·5 cm longa, 1–2 cm lata, elongato-cuneata prope apicem 3–7 dentata, in petiolum attenuata. *Racemus* terminalis, contractus, pauci- ad multi-florus. *Sepala* 3–3·8 mm longa, oblonga; interiora 2 leviter saccata. *Petala* 6 mm longa, 4·5–4·8 mm lata, rotundato-obovata, breviter unguiculata. *Filamenta* subulata. *Antherae* 1·8–2 mm longae. *Ovarium* anguste oblongum, breviter stipitatum; stylus brevis; stigma capitatum, magnum; ovula 8–12. *Fructus* ignotus.

Type: Cape: Namakwaland district, Hellskloof, *Hall* 789 (NBG, holo.).

Perennial scandent herbs?, glabrous. *Leaves* 4·5–6·5 cm long, 1–2 cm broad, elongate-cuneate, 3–7-toothed near the apex, narrowed into a petiole. *Racemes* terminal, few- to many-flowered, contracted. *Sepals* 3–3·8 mm long, 1·5 mm broad, oblong; outer 2 cucullate, shortly horn-tipped; inner 2 slightly saccate with broad membranous margins. *Petals* 6 mm long, 4·5–4·8 mm broad, obovate-circular, shortly clawed. *Filaments* 2–2·4 mm and 2·5–2·8 mm long, subulate. *Anthers* 1·8–2 mm long. *Ovary* narrowly oblong, shortly stipitate; style short; stigma large, capitate. *Fruits* not known.

Known from only one gathering mentioned above which was collected on 19th. September, 1953, in flower; the flowers are white. The affinity of this plant is obscure, all the more so in the absence of ripe fruits.

***Heliophila filicaulis* Marais, sp. nov., a *H. tulbaghensi* Schinz floribus majoribus, fructibus compressis differt.**

Fruticulus multo ramosus tenuis; rami glabri, striis minutis cartilagineis, plerumque valde moniliformibus. *Folia* 1–3 cm longa, lineari-filiformia, acuta, mucronata, stipulata. *Racemus* terminalis, pauci ad pluri-florus. *Sepala* 5–5·5 mm longa, anguste oblonga, membranacea; interiora 2 basi saccata. *Petala* 10–11·5 mm longa, 3·8–4·3 mm lata, oblongo-obovata, unguiculata. *Filamenta* exappendiculata. *Antherae* 1·7–1·9 mm longae. *Ovarium* lanceolatum, stipitatum; stylus longus; ovula 4–8. *Siliquae* 1·5–3 cm longae, 1·6–1·8 mm latae, lineares, compressae, moniliformes, stipite 0·5–2 mm longo; stylus 2·5–3 mm longus, linearis, robustus. *Semina* 2·2–2·3 mm longa, 1·3–1·4 mm lata ovata, compressa, papillosa.

Type: Cape: Worcester District, Hex River Mts., *Esterhuysen* 15936 (BOL, holo.; K, NBG, PRE).

Much-branched slender shrublets with wiry branches; branches glabrous with minute cartilaginous lines which are mostly strongly beaded, these disappearing with age. *Leaves* 1–3 cm long, linear-filiform, acute, mucronate, subtended by 2 minute, filiform stipules. *Racemes* terminal, few- to several-flowered. *Pedicels* 0·6–1 cm long, erect or ascending, usually subtended by 2 minute bracts. *Sepals* 5–5·5 mm long, 1·4–2 mm broad, narrowly oblong, membranous; outer 2 cucullate; inner 2 saccate. *Petals* 10–11·5 mm long, 3·8–4·3 mm broad, oblong-obovate, narrowly clawed. *Filaments* 4–5 mm and 5·5–6·5 mm long. *Anthers* 1·7–1·9 mm long. *Ovary* stipitate, lanceolate; style long; ovules 4–8. *Fruits* 1·5–3 cm long, 1·6–1·8 mm broad, linear, compressed, moniliform with narrow waists between the seeds; stipe 0·5–2 mm long; style 2·5–3 mm long, linear, stout. *Seeds* 2·2–2·3 mm long, 1·3–1·4 mm broad, ovate, flat, papillose.

Growing on southern, south-eastern and eastern aspects in shelter of rocks. Collected in flower in October; flowers blue to pinky-blue.

CAPE.—Worcester: Hex River Mts., *Esterhuysen* 15936; Outer Sanddrift Peak, *Esterhuysen* 29777 (BOL).

***Heliophila katbergensis* Marais**, sp. nov., a *H. rigidiuscula* Sond. habitu, petalis exappendiculatis et seminibus paucioribus differt.

Herba perennis. *Caules* plures, procumbentes, striis minutis cuticularibus. *Folia* 1-1.8 cm longa, 1.8-2.3 mm lata, oblanceolata vel oblanceolato-elliptica, integra, acuta, stipulis 2 minutis. *Racemus* terminalis, laxis. *Sepala* 3.5-4 mm longa, oblonga; interiora 2 basi saccata. *Petala* 6.5-7.5 mm longa, 3.5-4.5 mm lata, late obovata. *Filamenta* subulata, breviora 2 appendiculata. *Antherae* 1.8-2 mm longae. *Ovarium* ellipticum, stipitatum, ovulis 4-6. *Fructus immaturus* 1.6-1.7 cm longus, 4.5-5 mm latus, oblongus, pedicellis recurvis 1.5-2 cm longis; valvae planae, 1-nervae, reticulatae; stylus 3.5-6.5 mm longus, robustus, c. 1 mm crassus.

Type: Cape: Stockenstrom District, Katberg, *Hutchinson* 1614 (PRE, holo.; BOL, K).

Procumbent, many-stemmed, glabrous herbs. *Stems* with minute cuticular ridges. *Leaves* 1-1.8 cm long, 1.8-2.3 mm broad, oblanceolate or oblanceolate-elliptic, entire, acute, mucronate, subtended by 2 minute stipules. *Racemes* terminal, lax, many-flowered. *Sepals* 3.5-4 mm long, oblong, membranous-margined; outer 2 thickened at the apex; inner 2 saccate. *Petals* 6.5-7.5 mm long, 3.5-4.5 mm broad, broadly obovate. *Filaments* subulate, the short ones each with an appendage. *Anthers* 1.8-2 mm long. *Ovary* elliptic, stipitate; ovules 4-6. *Immature fruit* 1.6-1.7 cm long, 4.5-5 mm broad, oblong, on recurved pedicels 1.5-2 cm long; valves flat, 1-nerved, reticulately veined; style 3.5-6.5 mm long, stout, c. 1 mm thick.

Known from only the one gathering from the top of Katberg; collected in flower on 27th November, 1928. The flowers are described as deep mauve. Like so many other of Hutchinson's specimens, this one was misidentified and in "A Botanist in Southern Africa" he refers to it as *Heliophila glauca* Burch.

***Heliophila obibensis* Marais**, sp. nov., a *H. amplexicauli* L.f. foliis angustis linearibus, floribus multo minoribus, petalis et filamentis exappendiculatis; a *H. pectinata* Burch. ex DC. foliis simplicibus, siliquis latioribus lineari-oblongis differt.

Herba annualis, erecta, parva, glabra. *Folia* linearia, integra. *Racemus* terminalis, pluriflorus. *Sepala* 1.7-2 mm longa, anguste oblonga. *Petala* 2.5-3.5 mm longa, 1.2 mm lata, anguste oblongo-obovata. *Filamenta* 1.8-2 mm et 2-2.3 mm longa, filiformia. *Antherae* 0.5-0.6 mm longa. *Ovarium* stylo brevi robusto, stigmatе capitato magno, ovulis 8-12. *Siliquae* 1.2-1.7 cm longae, 2-2.5 mm latae, lineari-oblongae, submoniliformes; valvae planae, 1-nervae, reticulatae; stylus c. 0.5 mm longus. *Semina* ignota.

Type: South West Africa: Luderitz District, Obib, *Merxmüller & Giess* 3340 (M, holo.).

Erect, branched, glabrous, annual herbs up to 15 cm high. *Leaves* up to 2.5 cm long, 0.7-0.8 mm wide, linear, simple, each subtended by 2 small filiform stipules. *Pedicels* each subtended by 2 small filiform bracts; in flower slender, erect, 2-4 mm long; in fruit spreading or \pm recurved, 5-6 mm long. *Sepals* 1.7-2 mm long, 0.6-0.8 mm broad, narrowly oblong; the outer 2 \pm cucullate; the inner 2 slightly saccate. *Petals* 2.5-3.5 mm long, 1.2 mm broad, narrowly oblong-obovate, clawed. *Filaments* 1.8-2 mm and 2-2.3 mm long, filiform. *Anthers* 0.5-0.6 mm long. *Ovary* linear-oblong; style short, stout; stigma large, capitate; ovules 8-12. *Siliquae* 1.2-1.7 cm long, 2-2.5 mm broad, linear-oblong, submoniliform; valves flat, 1-nerved, reticulately veined; style c. 0.5 mm long. *Seeds* not seen.

This distinctive species is known from only the one gathering made on the 1st of September, 1963, in quartzite screes on the slopes north of Obib. The small white flowers turn pinkish with age.

***Heliophila promontorii* Marais**, sp. nov., a *H. macowaniana* Schltr. planta fere glabra, floribus majoribus caeruleis vel lilacinis siccitate roseis, siliquis sursum versus curvatis stylis inconspicuis parvis differt.

Herba annualis, tenuis, sterea; caules basin versus fusci; nodi inferiores minute puberuli, reliqui glabri. *Folia* integra vel bipinnatifida, linearia vel lineari-filiformia. *Sepala* 2·8–4 mm longa, oblonga, interiora 2 basi saccata. *Petala* 5·5–8·5 mm longa, 2·5–6 mm lata, obovata, exappendiculata vel appendicibus minutis, caerulea vel lilacina, siccitate rosea. *Filamenta* lateralibus plerumque appendicibus minutis. *Ovarium* lineare, ovulis 16–25. *Siliquae* 2–3 cm longae, 0·8–1·2 mm latae, lineares, tenues moniliformes sursum versus curvatae; stylus 1–1·6 mm longus, parvus, subfusiformis vel subclavatus. *Semina* 1 mm longa, 0·7 mm lata, ovalia anguste marginata.

Type: Cape Peninsula, Kenilworth, *Bolus* 7922 (PRE, holo.; BOL, K).

Slender wiry annual herbs 6–25 cm high. *Stems* dark in the lower part only or all over; lower part of stem, sometimes only a few nodes, minutely puberulous, rest of the plant glabrous. *Leaves* 1·5–5·5 cm long, simple or 3- to 7-lobed, rarely subbipinnately lobed, subtended by 2 minute stipules; lobes linear or linear-filiform. *Racemes* terminal, lax, few-flowered. *Pedicels* 0·7–1·2 cm long in flower, slender; 0·9–1·3 cm long in fruit, spreading; subtended by 2 minute bracts. *Sepals* 2·8–4 mm long, 0·9–1·5 mm broad, oblong; outer 2 cucullate, thickened at the tip; inner 2 saccate with broad membranous margins. *Petals* 5·5–8·5 mm long, 2·5–6 mm broad, obovate to circular-obovate, clawed, without or with a very small appendage. *Filaments* 1·8–2·8 mm and 2–3·1 mm long, the short ones usually with a small appendage. *Anthers* 1–1·5 mm long. *Ovary* linear; stigma capitate; ovules 16–25. *Fruits* 2–3 cm long, 0·8–1·2 mm broad, linear, shallowly moniliform, curving upwards; valves 1-nerved; style 1–1·6 mm long, subfusiform or subclavate. *Seeds* broadly oval, narrowly margined.

This is *H. trifida* sensu Adamson in Fl. Cape Peninsula and sensu Schulz in Botanisches Archiv 31: 542 (1931), a species which has not yet been given a name. True *H. trifida* Thunb., an illegitimate name, is a synonym of *H. pinnata* L.f. (see Bothalia 8, 2: 167, 1965). Some of the specimens have been identified as *H. tenuifolia* Sond. which is, however, a synonym of *H. digitata* L.f.

The flowers are described as blue, blue with a white eye, or mauve with a white centre. They all dry pink. The flowering period is from September to November. The species is confined to the Peninsula, usually found on sand dunes and flats.

CAPE.—Peninsula: Kenilworth, *Bolus* 7922; *Salter* 5654 (BM, BOL, K); *Bolus* in PRE 28953; *Levy* 5200; Rondebosch, *Bolus* 3965 (BOL); Vlakkenburg, *Compton* 20177 (BOL, NBG); Smith's Farm, *Salter* 7044 (BOL); Smitswinkel, *Salter* 234/3 (BM); Rooihoogte, *Leighton* in BOL 27350 (BOL); *Compton* 13781 (NBG). Without exact locality; *Zeyher* 41 (BOL, K, SAM); *Wright* s.n. (K); *Grey* s.n. (K).

***Heliophila rimicola* Marais**, sp. nov., a *H. esterhuyseniae* Marais fructibus compressis et seminibus compressis levibus differt.

Fruticulus perennis, ramis rigidis. *Folia* 0·8–4 cm longa, 1–2·8 mm lata, linear-oblonga vel oblanceolata, acuta, crassa, stipulis 2 minutis. *Inflorescentia* intercalaris vel ramulis lateralibus abbreviatis terminalis, pauciflora, rare floribus axillaribus. *Pedicelli* 1–2·3 cm longi, erecti, apice in fructu valde incrassato, bracteis 2 filiformibus minutis subtendentibus. *Sepala* 5–7 mm longa, ovata vel obovato-oblonga, exteriora 2 cucullata. *Petala* 1·1–1·5 cm longa, 5–7 mm lata, obovato-spathulata. *Filamenta* exappendiculata. *Antherae* 1·8–2·7 mm longae. *Ovarium* lanceolatum, stipitatum; stylus tenuis; ovula 4–8. *Siliquae* 1·5–3 cm longae, 2·7–4 mm latae, lanceolatae, longe acuminatae, compressae, stipite 0·5–2 mm longo; valvae 1-nervae; stylus 2–3·5 mm longus, tenuis, apicem versus attenuatus. *Semina* 2·1–3 mm longa, 1·8–2·5 mm lata, subrotunda vel oblongo-rotunda, compressa, levia.

Type: Cape: Ladismith District, Swartberg, Towerkop, *Esterhuysen* 26800 (BOL, holo.).

Glabrous, perennial shrublets with stiff branches; young branches striate with ridges from the thickened leaf-base; older branches smooth, round, with a light brown bark. *Leaves* 0.8–4 cm long, 1–2.8 mm broad, linear-oblong, linear-oblongate or oblanceolate, acute or shortly acuminate, fleshy, subtended by 2 minute stipules. *Inflorescence* intercalary or terminal on abbreviated side-branches, rarely with some axillary flowers. *Pedicels* 1–2.3 cm long, erect, the apex thickened and becoming strongly swollen in fruit, subtended by 2 minute filiform stipules. *Sepals* 5–7 mm long, 1.5–3.5 mm broad; outer 2 ovate or obovate-oblong, cucullate, thickened at the apex; inner 2 ovate to elliptic, membranous. *Petals* 1.1–1.5 cm long, 5–7 mm. broad, obovate-spathulate, clawed. *Filaments* 4–4.8 mm and 5.3–6.5 mm long. *Anthers* 1.8–2.7 mm long. *Ovary* lanceolate, stipitate; style slender; ovules 4–8. *Fruits* 1.5–3 cm long, 2.7–4 mm broad, lanceolate, long acuminate, flattened; stipe, 0.5–2 mm long; valves 1-nerved; style 2–3.5 mm long, slender, tapering. *Seeds* 2.1–3 mm long, 1.8–2.5 mm broad, subcircular or oblong-subcircular, flattened, smooth.

Apparently always found in moist crevices on rock faces at an altitude of 6–7,000 ft. The flowers are described as white, light purplish or tinged with purple. Flowering specimens have been collected during December; specimens with ripe fruits during March and April.

CAPE.—Ladismith: Swartberg, Towerkop, *Esterhuysen* 18516 (BOL); *Esterhuysen* 26800 (BOL); *Esterhuysen* 30672 (K). Prince Albert: Swartberg, Ridge Peak, *Andreae* 1223; *Primos* 55; *Stokoe* 1752; 1796.

***Heliophila schulzii* Marais, sp. nov.**, a *H. lactea* Schltr. foliis minute stipulatis, pedicellis bracteis 2 similibus subtendentibus, sepalis puberulis differt.

Herba annualis, 15–45 cm alta. *Folia* 5–12 cm longa, integra vel 3-lobata, lobis linearibus vel lineari-filiformibus, superne minute puberula, stipulis minutis caducis. *Sepala* 4.5–6 mm longa, oblonga, breviter puberula; interiora 2 basi saccata. *Petala* 0.8–1.2 cm longa, 3.5–7.8 mm lata, obovata, appendiculata. *Filamenta* 3.5–4.5 mm et 4–5 mm longa, brevioribus 2 appendiculatis. *Antherae* 1.5–2 mm longae. *Ovula* (36–) 44–70 (–80). *Siliquae* 3.5–6 cm longae, 1–1.8 mm latae, lineares, margine recto, denique pendulae; valvae 1-nervae, glabrae vel puberulae; stylus 1.8–3.5 mm longus.

Type: Cape: Namakwaland district, Bowsdorp, *Stokoe* in SAM 59126 (SAM, holo.).

Slender or stout annual herbs 15–45 cm high, simple or with many ascending branches; basal part of stem and sometimes the axils of the branches shortly puberulous. *Leaves* 5–12 cm long, entire or 3-lobed, the lobes linear or linear-filiform, the upper leaves entire, shorter; upper surface minutely puberulous; stipules minute, caducous. *Racemes* lax. *Pedicels* shortly puberulous at the base, with 2 minute bracts; in flower slender, erect, in fruit 1–1.5 cm long, widely spreading but finally sharply reflexed. *Sepals* 4.5–6 mm long, 1.2–1.9 mm broad, narrowly oblong or oblong-elliptic, with membranous margins, shortly puberulous; outer 2 cucullate, thickened or very shortly horn-tipped; inner 2 saccate. *Petals* 0.8–1.2 cm long, 3.5–7.8 mm broad, obovate, rounded, cuneate or clawed, each with an appendage. *Filaments* 3.5–4.5 mm and 4–5 mm long, the short ones appendaged. *Anthers* 1.5–2 mm long. *Ovary* linear; stigma large, capitate; ovules (36–) 44–70 (–80). *Fruits* 3.5–6 cm long, 1–1.8 mm broad, linear with straight margins; valves 1-nerved, strongly bulged by the seeds, glabrous or puberulous all over or just near the base; style 1.8–3.5 mm long, straight or very slightly swollen near its base, or subclavate. *Seeds* 0.9–1.4 mm long, 0.7–1 mm broad, subcircular to oblong, emarginate.

The flowering time is from August to October and the flowers are blue or purple. Apparently confined to the Kamiesberg.

CAPE.—Namakwaland: Brakdam, *Schlechter* 11147; *Maguire* 958 (NBG); Kamiesberg, De Kom, *Leipoldt* 3914; *Leipoldt* 3915 (BOL); between Kamieskroon and Leliefontein, *Salter* 1506 (K); Kamieskroon, *Herre* in STE 11786 (STE); *Macdonald* 62 (BM); Bowesdorp, *Stokoe* in SAM 59126 (SAM); Garies, *Compton* 11565 (NBG); *Henrici* 2145; Spektakel, *Morris* in BOL 5580 (BOL); between Swartdoring River and Groen River, *Drege* (BM); Grootvlei, *Compton* 17285 (BOL, NBG).

LEPIDIUM

Lepidium africanum (*Burm.f.*) DC., Syst. 2: 552 (1821), quoad synonym. tandem, excl. specim. et descr.; non auct.

Thlaspi africanus *Burm.f.*, Prodr. Fl. Cap. 17 (1768). Type: *Burmman* in Herb. Delessert (G!).

Lepidium divaricatum sensu DC., l.c., 543 (1821), quoad specim. *Burm.*; sensu auct. pro parte.

In *Burmman's* herbarium there are three specimens with the name *Thlaspi africanus*. *Burmman's* diagnosis: "Siliculis subovatis, foliis lanceolatis serrulatis glaberrimus", agrees very well with one of them. This specimen, however, is the one which *De Candolle* excluded from *Lepidium africanum* when he made the combination. On p. 543 under *L. divaricatum* he writes: "Haec species est in herb. *Burmmani* confusa cum *Lepidio* suo *africano*, ad quod revera accedit".

Thus, the name *L. africanum* must now be applied to plants which, since *De Candolle's* treatment, have been included in *L. divaricatum* *Ait.* The plants which I include in *L. africanum* have mostly been put into *L. divaricatum* subsp. *linoides*. In my opinion the type of *L. linoides* *Thunb.* does not belong here, but should go into *L. divaricatum* sens. strict. The plants that we used to know as *L. africanum* must now be called *L. capense* *Thunb.*

Lepidium capense *Thunb.*, Prodr. 107 (1800). Type: *Thunberg* Herb. No. 14761 (UPS!).

L. decumbens *Desv.* in Journ. Bot. Appl. 3: 165, 176 (1814). Type: Herb. *Desvaux* (ex cult.) (P, holo.!; BM!). *L. africanum* (*Burm. f.*) DC., Syst. 2: 552 (1821), pro parte, quoad specim. et descr., excl. synonym. *Burm.f.* —var. *typicum* *Thell.* in Viertelj. Naturf. Ges. Zür. 51: 187 (1906), excl. synonym. *Burm.f.* —var. *capense* (*Thunb.*) *Thell.*, l.c. —var. *serratum* *Thell.*, l.c., 188 (1906). Type: *Thunberg* Herb. No. 14792 (UPS!). —var. *serratum* f. *glabratum* *Thell.*, l.c., 189 (1906). Type: *Ecklon & Zeyher* No. 43, p.p., not seen. —var. *burchellii* *Thell.*, l.c. (1906). Type: *Burchell* 137 (K!). *L. africanum* auct.

My concept of this species does not differ from that of *Thellung* except that I do not uphold all his varieties. Only the name, and thus the synonymy, has changed.

Lepidium divaricatum *Ait.*, Hort. Kew. ed. 1, 2: 375 (1789).

(a) subsp. ***divaricatum***.

L. divaricatum *Ait.*, l.c. Type: "*Lepidium divaricatum* *Banks' ex Hort. Kew*" in Herb. Delessert (G!). —subsp. *eu-divaricatum* *Thell.* in Viertelj. Naturf. Ges. Zür. 51: 167 (1906). Type as above. *L. linoides* *Thunb.*, Prodr. 107 (1800). Type: *Thunberg* Herb. No. 14776 (UPS!). *L. divaricatum* subsp. *linoides* (*Thunb.*) *Thell.*, l.c. (1906). —subsp. *linoides* var. *typicum* *Thell.*, l.c., 168 (1906). Type as above. *L. subdentatum*

Burch. ex DC., Syst. 2: 545 (1821). Type: *Burchell* 1299 (K!). *L. linoides* var. *subdentatum* (DC.) Sond. in Fl. Cap. 1: 28 (1860). *L. divaricatum* subsp. *linoides* var. *subdentatum* (DC.) Thell., l.c. (1906). *L. pinnatum* sensu Sond. l.c., 30 (1860), pro parte, quoad syn. *L. divaricatum*.

The type specimen is a cultivated plant, preserved in Herb. Delessert in Geneva, with large, broad, pinnately lobed leaves like those of *Bolus* 25 from Graaff-Reinet. They do not represent the usual form of the species; the majority are fairly slender plants with small, narrower leaves.

(b) subsp. **trifurcum** (Sond.) Marais, comb. nov.

L. trifurcum Sond. in Linnaea 23: 4 (1850); Fl. Cap. 1: 30 (1860). Type: *Zeyher* 213 (K!, PRE!).

Thellung, in Vierteljahresschrift der Naturforschenden Gesellschaft, Zürich 51: 171 (1906), interpreted *L. trifurcum* incorrectly, probably because Sonder had, in Flora Capensis, misidentified *Drege* 7542a with his species. *Rehmann* 3033, 3034 and 3219 and *Drege* 7542a from Vienna, cited by Thellung, all belong to *L. schinzii* Thell. I have not seen the sheet of *Drege* 7542a from Herb. Delessert which is also cited by Thellung.

Lepidium ecklonii Schrad., Ind. Sem. Hort. Goetting. 3 (1830). Type: ex Hort. Goettingen (LE!).

L. divaricatum subsp. *ecklonii* (Schrad.) Thell. in Viertelj. Naturf. Ges. Zür. 51: 169 (1906). *L. sylvaticum* Eckl. & Zeyh., Enum. 6, No. 37 (1834-5). Type: *Ecklon & Zeyher* 37 (LE!). *L. pinnatum* Eckl. & Zeyh., l.c. 7, No. 45 (1834-5), non Thunb. *L. hirtellum* Sond. in Fl. Cap. 1: 30 (1860). Type: *Ecklon & Zeyher* 45 (LE!). *L. capense* sensu Sond., l.c. 29 (1860), pro parte, quoad syn. *L. ecklonii* Schrad.

Lepidium basuticum Marais, sp. nov., a *L. desertorum* Eckl. & Zeyh. siliculis magnis ellipticis stylis in emarginaturis inclusis differt.

Herba perennis. *Caules* pilis \pm falcatis dense induti. *Folia basilaria* rosulata, petiolata, 8-10-jugata, pinnata, pinnis lobatis vel dentatis. *Folia caulina* lobis paucioribus angustioribus et minus lobulatis; folia superiora minora, oblanceolata, 3-fida vel integra. *Racemi fructiferi* 1-5 cm longi, densi. *Sepala* 0.8-0.9 mm longa, oblonga. *Petala* 0. *Stamina* 2. *Nectararia* 0.4-0.5 mm longa, filiformia. *Siliculae* 2.8-3 mm longae, 1.7-1.9 mm latae, ellipticae, leviter emarginatae, stylo in emarginatura incluso. *Semina* 1-1.4 mm longa, 0.5-0.6 mm lata.

Type: Basutoland: Butha Buthe, Pela Tseou Streams, *Guillarmod* 2073 (Hb. Guillarmod, holo.).

Perennial herb; stems prostrate or erect up to 30 cm high; with a long taproot. *Stems* densely \pm retrorsely set with flattened \pm sickle-shaped hairs. *Basal leaves* in a rosette, petiolate, up to 12 cm long, pinnate, 8-10-jugate, the pinnae variously lobed or dentate; both surfaces of petiole and lower surface of the rhachis and midribs set with short, flattened hairs. *Cauline leaves* pinnately lobed with fewer, narrower and less lobulate lobes, upwards smaller, the uppermost oblanceolate, 3-fid to entire. *Racemes* terminal, in fruit 1-5 cm long, dense; rhachis puberulous. *Pedicels* 1.5-3.5 cm long, wide-spreading, puberulous all round. *Sepals* 0.8-0.9 mm long, oblong with membranous margins, subsistent. *Petals* 0. *Stamens* 2; filaments subulate, thickened at the base. *Nectaries* 0.4-0.5 mm long, filiform. *Siliculae* 2.8-3 mm long, 1.7-1.9 mm broad, elliptical, shallowly emarginate with the style shorter than or as long as the sinus. *Seeds* 1-1.4 mm long, 0.5-0.6 mm broad, brown.

A distinctive plant. The leaves are reminiscent of those of *L. desertorum*, and so are the short fruiting racemes. The long filiform nectaries are found in both species. Differs from *L. desertorum* in the large elliptical siliculae.

A high mountain species found between 9,200 and 10,300 feet.

BASUTO LAND.—Butha Buthe, Pela Tleou Steams, *Guillarmod* 2073; Lehaha-la Sekhonyana, *Guillarmod* 348; Maluti Mts., *Dieterlen* 1260.

CAPE.—Barkly East: Doodmanskrans, *Galpin* 6574, p.p.

***Lepidium suluense* Marais, sp. nov. distincta.**

Herba annua vel perennis, 30–60 cm alta. *Caules* pilis \pm clavatis brevibus puberuli. *Folia caulina inferiora* sub-bipinnatipartita, lobis patulis vel plusminusve recurvis angustis, acutis, lineari-lanceolatis. *Folia superiora* pinnatipartita, lobis brevibus, folia omnia glabra vel aliquando petiolis sparse ciliolatis. *Racemus* fructiferus elongatus, laxis. *Sepala* 0.7–0.8 mm longa, oblonga. *Petala* 0.2 mm longa. *Stamina* 2. *Nectaria* parva, triangularia. *Siliculae* 2.2–3 mm longae, 1.7–1.8 mm latae, ovato-oblongae vel ovatae, emarginatura satis profunda, lobis saepe plusminusve convergentibus; stylus quam emarginatura brevior. *Semina* 1.3–1.4 mm longa, 0.6–0.7 mm lata.

Type: Natal: Hlabisa District, Hluhluwe, *Ward* 4577 (PRE, holo.).

Annual? or biennial herbs 30–60 cm high with spreading branches in the upper part. *Stems* puberulous with short \pm clavate hairs. *Lower stem leaves* sub-bipinnatipartite with spreading or \pm recurved, narrow, acute, linear-lanceolate lobes, or some few leaves oblanceolate, pinnatifid. *Upper leaves* pinnatipartite with short lobes; all leaves completely glabrous or occasionally the petioles sparsely ciliolate. *Racemes* terminal, in fruit elongate, lax; rhachis puberulous. *Pedicels* puberulous on the upper surface; in fruit 1.5–3.5 mm long, slender, ascending or arcuate. *Sepals* 0.7–0.8 mm long, oblong with membranous margins. *Petals* 0.2 mm long. *Stamens* 2; filaments subulate. *Nectaries* small, triangular. *Siliculae* 2.2–3 mm long, 1.7–1.8 mm broad, ovate-oblong or ovate, fairly deeply emarginate with the lobes frequently \pm converging; style shorter than the sinus. *Seeds* 1.3–1.4 mm long, 0.6–0.7 mm broad, red-brown.

A distinctive species, apparently not a weed, growing in sandy soil in light shade in open savanna.

NATAL.—Hlabisa: Hluhluwe, *Ward* 4577. Ntambanana, *Salberg* sub Curson 15.

MOZAMBIQUE.—Lourenco Marques: *Gomes e Sousa* 3654 (K); Khocene, *Junod* 314 (Z).

Synonymy: *L. divaricatum* subsp. *eu-divaricatum* var. *dissectum* Thell. in Viertelj. Naturf. Ges. Zür. 51: 166, 167 (1906). Type: *Junod* 314 (Z, holo.!).

***Lepidium transvaalense* Marais, sp. nov. distincta.**

Herba perennis parva; caules plures, 15–25 cm alti, sparse vel dense retrorso-pubescentes. *Folia basilaria et caulina inferiora* 2.5–5 cm longa, angusta, 7–9 pinnatilobata, lobis brevibus oblanceolatis, vel folia oblanceolata breviter lobata. *Folia caulina media* 0.5–3 cm longa, 3–7 pinnatilobata, lobis brevibus acutis puberulis ciliolatis. *Folia superiora* acute dentata, lineari-oblanceolata vel cuneato-oblanceolata. *Racemus fructiferus* densus. *Sepala* 0.6–0.8 mm longa, oblonga. *Petala* 0.3–0.4 mm longa. *Stamina* 2. *Nectaria* parva, triangularia. *Siliculae* 1.8–2.5 mm longae, 1.4–1.7 mm latae, ovato-oblongae vel subrotundo-oblongae, leviter emarginatae, stylo in emarginatura incluso. *Semina* 0.9–1 mm longa, 0.4–0.6 mm lata.

Type: Transvaal: Bethal District, *Leendertz* 3574 (PRE, holo.).

Small perennial herbs, several-stemmed from a woody crown, or sometimes with branched woody stems, 15–25 cm high, sparsely to densely retrorse pubescent. *Basal and lower stem-leaves* 2·5–5 cm long, narrow, pinnately 7–9-lobed with short (0·5 cm), lanceolate lobes, or leaves broadly oblanceolate, shortly lobed. *Middle stem leaves* 0·5–3 cm long, pinnately 3–7-lobed with short sharp lobes, puberulous (especially on the lower surface), ciliolate. *Upper leaves* sharply toothed, linear-oblanceolate to cuneate-oblanceolate. *Racemes* terminal, in fruit dense, 4–8 (–12) cm long. *Pedicels* puberulous on the upper surface, ascending or arcuate. *Sepals* 0·6–0·8 mm long, oblong, membranous-margined. *Petals* 0·3–0·4 mm long, white. *Stamens* 2; filaments subulate. *Nectaries* small, triangular. *Siliculae* 1·8–2·5 mm long, 1·4–1·7 mm broad, ovate-oblong to subcircular-oblong, shallowly emarginate, the style included in the sinus. *Seeds* 0·9–1 mm long, 0·4–0·6 mm broad, brown.

TRANSVAAL.—Bethal: *Leendertz* 3574 (PRE); Machadodorp, *Young* in TRV 27231. Ermelo: *Burt Davy* 7721; *Henrici* 1278. Heidelberg: *Leendertz* 2639; *Burt Davy* 9145. Standerton: *Jenkins* in TRV 10043. Volksrust: *Mogg* in T.D.A. Herb. 9687 (K). Potchefstroom: *Liebenberg* 1019.

NATAL.—Estcourt: *Edwards* 432 (NU). Pietermaritzburg: *Wilms* 1855 (K).

ORANGE FREE STATE.—Harrismith: *Witzieshoek*, *Junod* in TRV 17369.

BASUTOLAND.—Leribe: *Dieterlen* 137b.

CAPE.—? Prieska: *Bryant* B 7.

The habit of this species is distinctive, but its relationship is not clear. Included by Thellung in his wide concept of *L. divaricatum*, which is here treated as several distinct species.

The majority of the specimens are remarkably uniform. *Junod* in TRV 17369, *Mogg* in T.D.A. Herb. 9687, *Wilms* 1855 and *Dieterlen* 137b differ in the broader, cuneate-oblanceolate leaves. *Edwards* 432, collected in a very advanced state, obviously belongs here but is much more robust than the other specimens.

THLASPEOCARPA

Thlaspeocarpa namaquensis *Marais*, sp. nov., a *T. capensi* C.A. Sm. floribus fructibus et seminibus minoribus, racemis fructiferis laxis differt.

Herba annua; caules et rami minute puberuli. *Folia* 3–10 cm longa, pectinate 3–9-lobata, lobis linearibus. *Racemi fructiferi* laxi. *Sepala* 1·5–2 mm longa, 0·8–1 mm lata, puberula vel glabra, interiora 2 basi leviter saccata. *Petala* 2–3·5 mm longa, 1·3–1·8 mm lata, obovata. *Filamenta breviora* minute appendiculata. *Antherae* 0·3–0·5 mm longae. *Pedicelli fructiferi* 1–1·5 cm longi, patuli, gracillimi. *Siliculae* 1–1·3 cm longae, 0·8–1 cm latae, subrotundae vel subrotundo-obovatae, compressae, pendulae; valvae 1-nervae, membranaceae, maturitate reticulatae. *Semina* 4·7–5 mm diametro, rotundata, compressa, late alata.

Type: Cape: Namakwaland District, Steinkopf, *Acocks* 19536 (PRE, holo.).

Annual herbs 15–35 cm high, branched in the upper part; stems and branches minutely puberulous. *Leaves* 3–10 cm long, pectinately 3–9-lobed, the lobes broadly linear, acute, puberulous. *Racemes* soon lengthening, lax in fruit. *Sepals* 1·5–2 mm long, 0·8–1 mm broad, puberulous or glabrous, membranous-margined; the inner 2 slightly saccate. *Petals* 2–3·5 mm long, 1·3–1·8 mm broad, obovate, rounded, cuneate. *Filaments* of the short stamens with minute appendages. *Anthers* 0·3–0·5 mm long. *Fruiting pedicels* 1–1·5 cm long, wide-spreading, very slender. *Siliculae* 1–1·3 cm long, 0·8–1 cm broad, subcircular or subcircular-obovate, compressed, pendulous; valves 1-nerved, thin, finely but conspicuously reticulately veined at maturity. *Seeds* 4·7–5 mm in diameter, circular, broadly winged with a narrow sinus.

The flowering time is from August to September. Apparently confined to northern Namaqualand. The plants are more strongly pigmented than in *T. capensis*, the whole plant usually having a purplish tinge. Differs from *T. capensis* in the small fruits and seeds, the lax fruiting racemes, and in the flowers being smaller in all their parts.

CAPE.—Namakwaland: Kasteelpoort, near Klipfontein, *Bolus* 6502; *Bolus* in Herb. Norm. Austro-Afric. No. 1102; Steinkopf, *Acocks* 19536. Without exact locality: *Stokoe* in PRE 29579.

APLANODES, gen. nov.

Aplanodes Marais, gen. nov. (Cruciferae-Arabideae), *Cardamini* L. affinis, sed foliis simplicibus vel pinnatifidis, indumento pilorum ramosorum, fructuum valvis costatis manifestis differt.

Herbae perennes, pilis irregulariter ramificatis. *Folia* ovata, petiolata, inferiora basi cordata vel pinnatifida lobis brevibus patentibus. *Racemi* terminales. *Sepala* patentia, interiora 2 leviter saccata. *Petala* obovata, unguicularia, alba usque ad purpurata, leviter emarginata. *Filamenta* plana vel basi crassa. *Nectaria* lateralia circum bases filamentorum brevium annulatiformia, in annulo nectariis 2 medianis loratis extra filamenta longa conjuncta. *Ovarium* sessile; ovula in quoque loculo 6–18; stigma capitatum, brevissime 2-lobatum. *Siliquae* lineares, valvis planis 1-nervatis reticulatis acutis. *Semina* uniseriata, late ovata, alata, cotyledonibus accumbentibus.

Type species: *A. doidgeana* Marais.

Perennial herbs with irregularly branched hairs. *Leaves* ovate, petiolate, the lower ones cordate at the base or pinnatifid with short spreading lobes. *Racemes* terminal. *Sepals* spreading, the inner 2 slightly saccate. *Petals* obovate, clawed, slightly emarginate, white to purple. *Filaments* flattened or thickened at the base. *Lateral nectaries* ring-shaped, closed round the bases of the short filaments; united into a ring with the ribbon-shaped median nectaries which are outside the long filaments. *Ovary* sessile; ovules 6–18 per locule; stigma capitate, very shallowly 2-lobed. *Siliquae* linear, the valves flat, 1-nerved, net-veined, acute. *Seeds* in 1 row, broadly oval, winged; cotyledons accumbent.

Species 2, natives of South Africa.

The name is derived from the negative of the Greek word *Planodes*, “to wander about”, hence “not to wander about”, i.e. not an introduced plant as I first thought it might be. Also, the type species has never been described before (cf. *Planodes* Greene ex Schulz in Pflanzenfam. 17b: 541, 1936).

Aplanodes doidgeana Marais, sp. nov., species typica.

Herba perennis, ad 75 cm alta. *Caules* sparse vel dense puberuli, pilis irregulariter ramificatis. *Folia* simplicia, pilis ramificatis dense puberula, subtus pilis plerumque longioribus minus ramosis, petiolis basi leviter dilatatis; basalina ovato-rotundata vel reniformi-rotundata, basi cordata, obtusa, crenata, conferta, rosulata, mox caduca; folia caulina inferiora basi leviter cordata; superiora basi cuneata, apicibus obtusis vel acutis, dentata vel acute serrata, ovato-oblonga vel ovata. *Pedicelli fructiferi* 1–1.7 cm longi, graciles, puberuli, late recurvato-patentes. *Sepala* 3–5.5 mm longa, puberula; exteriora 2 cucullata, corniculata; interiora 2 basi leviter saccata. *Petala* 6–9.5 mm longa, 2.5–4.5 mm lata, obovato-cuneata, unguiculata, leviter emarginata. *Filamenta* 2.5–3.5 mm et 3.5–5 mm longa, longioribus 4 basi applanatis, brevioribus 2 basi incrassatis. *Antherae* 1.5–1.7 mm longae. *Ovarium* puberulum vel glabrum; ovula in quoque loculo 6–10. *Siliquae* 3.5–5 cm longae, 2.5 mm latae, lineares; valvae 1-nervae; stylus 4–6 mm longus, robustus. *Semina* 3.5 mm longa, 2.3 mm lata, late ovalia, alata.

Type: Natal: Bergville District, Cathkin Peak Hostel, *West* 15 (PRE, holo.).

Perennial branched herbs up to 75 cm high. *Stems* thinly to densely puberulous with irregularly branched hairs; some hairs longer, less branched to simple. *Leaves* simple, densely puberulous with branched hairs, lower surface usually with longer, less branched hairs, petiolate, the petiole slightly dilated at the base; basal leaves petiolate, the petiole slightly dilated at the base; basal leaves ovate-circular or reniform-circular, cordate at the base, obtuse, crenate, crowded, rosulate but dying off early; lower stem leaves shallowly cordate, the upper cuneate at the base, obtuse to acute, dentate to sharply and irregularly or doubly serrate, ovate-oblong to ovate. *Racemes* dense in flower, lax in fruit; rhachis puberulous. *Fruiting pedicels* 1-1.7 cm long, slender, widely recurved-spreading, puberulous. *Sepals* 3-5.5 mm long, puberulous, membranous-margined; outer 2 narrowly oblong, \pm cucullate, horn-tipped; inner 2 ovate, \pm saccate. *Petals* 6-9.5 mm long, 2.5-4.5 mm broad, obovate-cuneate, clawed, shallowly emarginate. *Filaments* 2.5-3.5 mm and 3.5-5 mm long; long ones flattened at the base; short ones thickened at the base. *Anthers* 1.5-1.7 mm long. *Ovary* linear-oblong, glabrous or with coarse hairs on the valves; ovules 6-10 per locule. *Siliquae* 3.5-5 cm long, 2.5 mm broad, linear; valves 1-nerved, net-veined; style 4-6 mm long, stout; stigma capitate, shallowly 2-lobed. *Seeds* 3.5 mm long, 2.3 mm broad, broadly oval winged.

Named after Dr. Doidge who first collected the species in 1920. The flowers are described as white, but some of the dried specimens show a definite pinkish tinge. Collected in flower from October to May.

NATAL.—Bergville: National Park, *Galpin* 10317 (K); Cathedral Peak Forestry Stn., *Killick* 1862; Cathkin Peak Hostel, *West* 15; Tugela Valley, *Doidge* s.n.; *Acocks & Hafström* 524.

Since the description was drawn up, I have received from the Government Herbarium, Stellenbosch, a specimen of *Thode* 7778, collected in the Injasuti Valley, altitude 6-7,000 ft., in November 1890. This specimen differs from all the others in having only simple hairs, and somewhat narrower, ovate-lanceolate upper stem leaves. Its flowers are described as dull lilac. This specimen consists of only the upper part of the plant, and appears rather more robust than the other specimens. All other characters are the same.

***Aplanodes sisymbrioides* (Schltr.) Marais, comb. nov.**

Heliophila sisymbrioides Schltr. in Journ. Bot. 35: 340 (1897). Type: Queenstown, *Galpin* 2260 (B!).

An insufficiently known species, differing from *A. doidgeana* in the pinnatifid leaves.

BRACHYCARPAEA

***Brachycarpaea juncea* (Berg.) Marais, comb. nov.**

Cleome juncea Berg., Descr. Pl. Cap. 164 (1767); Thunb., Prodr. 109 (1800). Type: *Grubb* s.n. (SBT!). *C. laxa* Thunb., l.c. (1800). Type: *Thunberg*, Herb. no. 15423!

Heliophila flava L.f., Suppl. 297 (1781). Type: *Thunberg* in Herb. Linn. no. 8407!

Brachycarpaea varians DC., Syst. 2: 699 (1821); Sond. in Fl. Cap. 1: 33 (1860). *B. varians* var. *flava* (L.f.) DC., l.c. (1821); Sond., l.c. (1860). *B. varians* var. *purpurascens* DC., l.c. (1821); Sond., l.c. (1860). Type: Herb. Burmann sub. *Polygala bracteolata*. *B. polygaloides* Eckl. & Zeyh., Enum. no. 51 (1834-5). *B. linifolia* Eckl. & Zeyh., l.c. no. 53 (1834-5). *B. laxa* (Thunb.) Sond., l.c. (1860). *B. laxa* var. *stricta* Sond., l.c. (1860). *B. flava* (L.f.) Druce in Rep. Bot. Exch. Cl. Br. 1. 1916: 610 (1917). *B. capensis* Fourc. in Bot. Surv. Mem. 20: 36 (1941), excl. synonym. Linn.

Coronopus anomalus Spreng., Syst. Veg. 2: 853 (1825), nom. illeg.