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### DROSERACEAE

#### *DROSERA ERICGREENII*, A NEW SPECIES FROM THE FYNBOS OF SOUTH AFRICA

##### INTRODUCTION

The Western Cape region of South Africa is well known for the floral diversity of its fynbos vegetation. The genus *Drosera* L. (Droseraceae) includes  $\pm 130$  species distributed world-wide, of which  $\pm 20$  are known to occur in the Western Cape Province, 12 of them endemic to this area (Obermeyer 1970; Goldblatt & Manning 2000; Debbert 2002).

*Drosera hilaris* Cham. & Schlecht. is a large, stem-forming species distributed along coastal mountains from Cape Town to Hermanus. A few collections were known from further inland, around the town of Franschhoek and from Du Toitskloof. Studying specimens and photographs (Miyamoto 2002) of plants from near Franschhoek, it was obvious that they differed from typical *D. hilaris*. When visiting this location in September 2006, it became clear that this population represents a new species, which is described below.

***Drosera ericgreenii*** A. Fleischm., R. Gibson & F. Rivaldavia, sp. nov., *Droserae hilaris* Cham. & Schlecht. similis, sed caulibus brevibus, stipulis membranaceis, scapo e basi curvato adscendenti-erecto et ramis stigmaticis furcatis vel lobatis differt.

TYPE.—Western Cape, 3319 (Worcester): French Hoek [Franschhoek], alt. 2000' [610 m], (–CC), October 1913, *Phillips 1121* (NBG, holo.!).

Perennial herb; stems short, at most 100 mm tall, usually much shorter; older part of stem densely covered with persistent leaf remains. *Stipules* triangular to oblong,  $\pm 7$  mm  $\times$  2 mm, irregularly lobed into 5–8 segments 2.0–3.5 mm long, white, drying brownish, papery, fused with base of petiole up to 1 mm. *Leaves* broadly obovate (in early growth season) to narrowly oblong, densely covered by carnivorous glands on abaxial surface; apical marginal tentacles with broadened base and enlarged, unifacial gland tip. *Petiole* 3–5  $\times$  1.5–3.0 mm in early and late season's growth leaves, up to 25 mm in leaves produced in full growth and during flowering; densely covered by woolly indumentum of simple white hairs,  $\pm 3$  mm long on both abaxial and adaxial surface. *Scape* ascendant, reddish green to deep wine-red, curved at base, up to 300 mm long and with up to 8 flowers, lower  $\frac{1}{3}$  densely covered with long simple white hairs which are deciduous with age, glandular in upper  $\frac{2}{3}$ ; pedicels 5–10 mm long, glandular; bracts filiform, 2–3  $\times$  0.2–0.3 mm, glandular. *Calyx* subcampanulate, glandular,  $\pm 5$  mm long; sepals 5, ovate,  $\pm 4 \times 2$  mm, apex

acute, abaxial surface covered in short glandular hairs. *Petals* 5, cuneate with rounded margin,  $\pm 10 \times 5$  mm, pink. *Stamens* 5,  $\pm 2$  mm long; filaments dilated towards apex; anthers and pollen yellow. *Styles* 3, 3–4 mm long, style arms divided near base, spreading, sometimes bifid, stigmatic apices swollen, lobulate or divided. *Ovary* subglobose,  $\pm 2$  mm diam. *Capsule* ovoid, 20–30 mm diam. *Seeds* fusiform. No ripe seed seen for exact measurements. Figure 1.

**Distribution:** *Drosera ericgreenii* is geographically very restricted, so far only known from the Franschhoek region of the inland mountains in the Western Cape. The related *D. hilaris*, in contrast, seems to be more widespread along coastal mountain ranges, such as Table Mountain, Tafelberg, Silverhill and Hermanus. One collection of *D. hilaris* (*Esterhuysen 26463*), however, was made further north, extending the range of that species. Figure 2.

**Ecology:** *Drosera ericgreenii* grows in short (< 0.5 m tall) ericoid fynbos in sandy soil with clay and scattered boulders over Table Mountain Sandstone, in a scree slope on south- to southeast-facing slopes near the town of Franschhoek in the Stellenbosch region of the Western Cape, at  $\pm 600$ –850 m. Associated vegetation at the site includes *Elegia filacea*, species of *Cannomois* and *Hypodiscus*, *Erica plukenetii*, *E. longiaristata*, *E. mammosa*, species of *Anaxeton*, *Brunia albiflora*, *Protea acaulis*, *P. speciosa*, *Leucadendron salignum*, *Drosera cistiflora*, species of *Gladiolus*, *Oxalis* and *Ixia*, *Gazania pectinata*, *Diastella divaricata* subsp. *montana* and *Aristea racemosa*. Like *Drosera hilaris*, *D. glabripes* (Harv.) Stein and *D. ramentacea* Burch. ex DC., it prefers rather dry soil with subsoil moisture. The plant grows in partial shade between rocks or beneath shrubby fynbos vegetation.

The evergreen chamaephyte, *Drosera ericgreenii* grows in close proximity to the summer dormant geophyte, *D. cistiflora* L. Like *D. hilaris* and *D. ramentacea*, which have evolved a similar chamaephytic habit, *D. ericgreenii* may stop growth during the driest summer months, forming a perennating, dense green apical bud well above ground level, while the persistent leaves desiccate. At the beginning of the cooler months of the rainy season, the plant resumes growth and produces flower scapes. It was collected in flower in November.

**Taxonomy:** *Drosera ericgreenii* is placed in subgenus *Drosera* section *Drosera* (sensu Diels 1906; Seine &

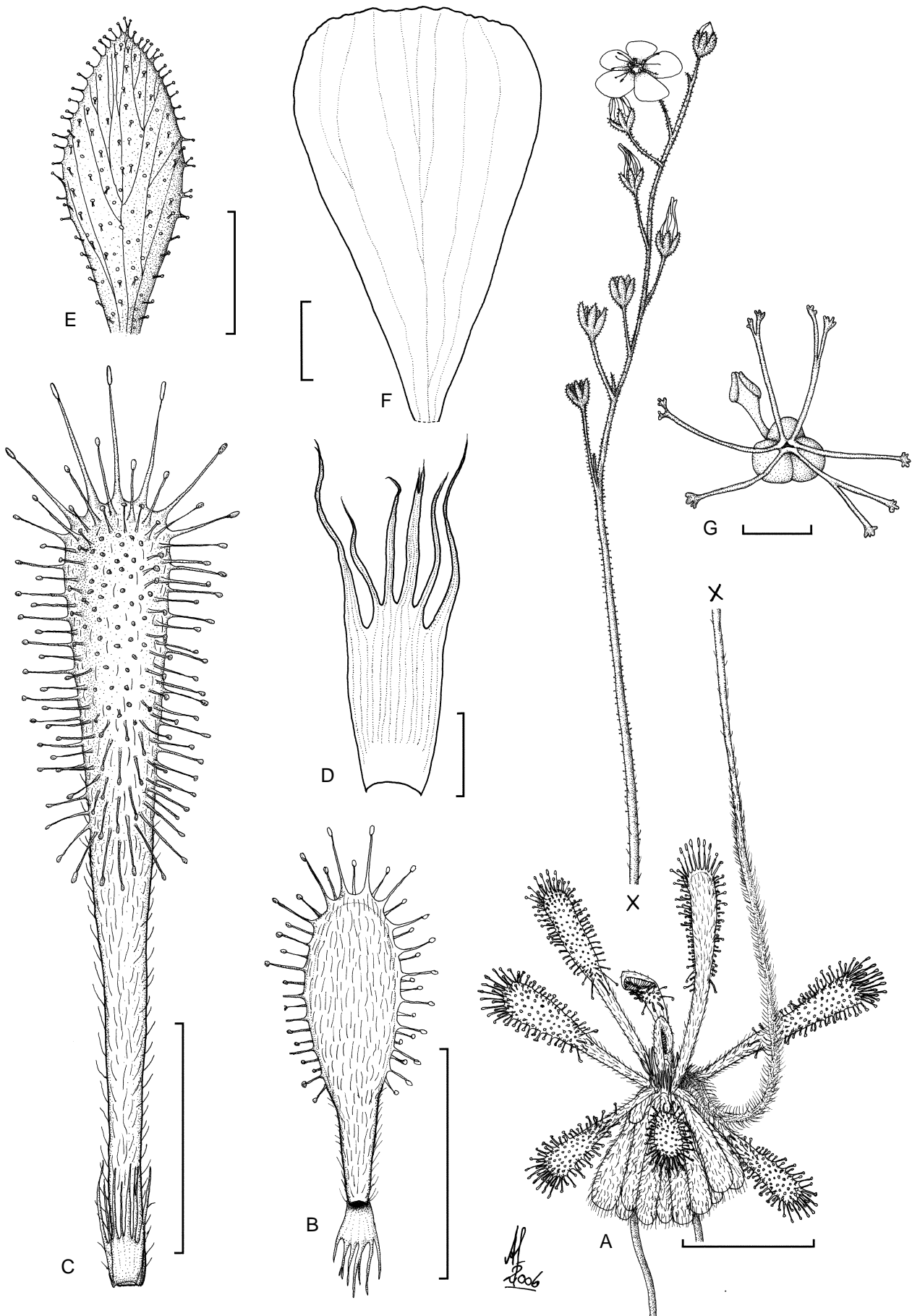


FIGURE 1.—*Drosera ericgreenii*. A, mature plant in flower; B, lower surface of early season leaf, with stipule; C, upper surface of leaf at anthesis, with stipule; D, stipule; E, sepal; F, petal; G, gynoecium with one of five anthers. Scale bars: A, 20 mm; B, C, 10 mm; D–G, 2 mm. A, drawn from type; B–G, W. Giess & S. Rehm 1368. Artist: Andreas Fleischmann.

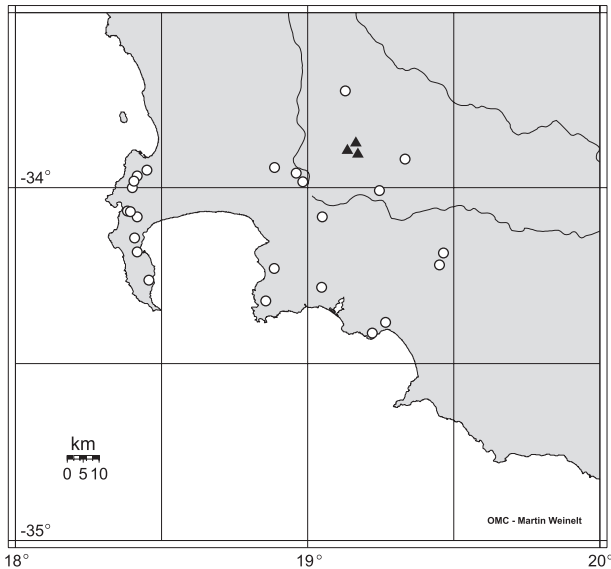


FIGURE 2.—Known distribution of *Drosera ericgreenii*, ▲; and *D. hiliaris*, ○; in the Western Cape.

Barthlott 1994). Table 1 gives a comparison with its closest relative, *D. hiliaris*.

**Etymology:** *Drosera ericgreenii*, that has been formerly neglected or incorrectly identified as specimens of *D. hiliaris* (Miyamoto 2002), is named in honour of Mr Eric Green, who over the past few decades has extensively explored the Western Cape Region for carnivorous plants, and in so doing has gathered priceless information about South African *Drosera* species (Gibson & Green 1999).

*Additional material examined*

*Drosera ericgreenii*

WESTERN CAPE.—3319 (Worcester): Franschhoek, (–CC), 17 November 1946, *W. Giess & S. Rehm 1368* (M); French Hoek [Franschhoek], (–CC), *Schlechter 9358* (PRE, photo!).

*Drosera hiliaris*

WESTERN CAPE.—3318 (Cape Town): Table Mountain Summit, (–CD), *Harvey s.n.* (BM); Constantia Neck, (–CD), 29 October 1951, *Salter s.n.* (NBG); Orangetkloof, (–CD), 04 November 1955, *Salter 9690* (BM), 20 October 1896, *Wolley-Dod 262* (BM); Botmanskop, (–DD), 10 November 1946, *Strey s.n.* (M); Jakkalsvlei list 4, Jonkershoek, (–DD), 23 October 1963, *Taylor 5479* (NBG); Stellenbosch, Swartsboskloof, (–DD), 13 October 1960, *Van Rensburg 2083* (M). 3319 (Worcester): Du Toit’s Kloof [Du Toitskloof], (–CA), 4 November 1956, *Esterhuysen 26463* (BOL); De Hoop, kloof near Elandspad homestead, (–CD), 16 October 1984, *Van Wyk 2040* (NBG). 3418 (Simonstown): Noordhoek, (–AB), October 1929, *Godman 808* (BM); Steenberg Plateau, (–AB), November 1944, *Lewis 988* (NBG); Glencairn Valley, (–AB), 20 October 1927, *Salter 263/6* (BM); Silvermine, (–AB), 21 September 1958, *Werdermann & Oberdieck 114* (B); Simon’s Bay, (–AB), 09 December 1856, *Wright s.n.* (P); Smitswinkel Bay, (–AD), *Marloth 338* (NBG); Kogelberg Forest Reserve, (–BB), 23 October 1969, *Boucher 790* (NBG); quarry at southern end of Buffelstralberg, (–BD), 16 September 1969, *Boucher 652* (NBG). 3419 (Caledon): near Villiersdorp, 9 miles [14.4 km] from Grabouw, (–AA), 30 October 1928, *Gillett 1873* (NBG); Viljoen’s Pass, (–AA), 30 October 1928, *Hutchinson 1078* (BM), 22 September 1946, *Strey s.n.* (M); mountain slopes above estuarine vlei, Caledon, (–AB), 30 September 1928, *Gillett 952* (NBG); Zwartberg [Swartberg], (–AB), October 1886, *MacOwan 728* (BOL); Hermanus, (–AC), *Barker 1690* (NBG); Palmietriviermond, Paardeberg, (–AC), 12 October 1962, *Grobles 25258* (NBG); Riviera, Hermanus, (–AC), 2 October 1916, *Purcell s.n.* (NBG); Fernkloof Nature Reserve, (–AD), 18 October 1989, *Greuter 21929* (B), 27 September 1980, *Orchard 570* (NBG).

Key to stem-forming *Drosera* species of Western Cape

- 1a Summer dormant geophyte; stipules absent; seasonally emerging basal rosette of leaves (sometimes absent at time of flowering) forming annual stems covered with living, green leaves well spaced along stem; flower scape terminal, erect . . . . . 1. *D. cistiflora* (s.l.)
- 1b Plant in growth year-round; stipules present (but reduced to inconspicuous setae in *D. hiliaris*); stems perennial, ± woody, covered by remnants of dead leaves, green living leaves at growing tip only; flower scapes emerging laterally, ± ascending:
  - 2a Leaves with petiole graduating continuously into lamina:
    - 3a Stem glabrous and leaves with short, scattered white hairs only (in addition to tentacles) . . . . . 2. *Drosera capensis* × *D. aliciae*
    - 3b Stem and leaves densely covered with woolly indumentum of short white hairs (in addition to tentacles):
      - 4a Stipules well developed, papery; stem short (< 100 mm); scapes ascending with curved base; flowers ± 20 mm diam. . . . . 3. *D. ericgreenii*
      - 4b Stipules reduced to tiny setae; stem > 100 mm (at least in flowering specimens); scapes erect with straight base; flowers more than 20 mm diam. (up to 40 mm) . . . . . 4. *D. hiliaris*
  - 2b Leaves with distinct petiole narrower than lamina:
    - 5a Stem and leaf lower surface covered with long white or brown hairs; inflorescence forked . . . . . 5. *D. ramentacea*
    - 5b Stem glabrous and leaf lower surface only sparsely covered by short appressed hairs; inflorescence unbranched (only very rarely branched in robust plants):
      - 6a Lamina broadly linear, up to 150 mm long; stipules entire, triangular . . . . . 6. *D. capensis*
      - 6b Lamina obovate to spatulate, up to 30 mm long; stipules lacinate:
        - 7a Petiole 1–2 mm wide; internodes > 2 mm . . . . . 7. *D. glabripes*
        - 7b Petiole 3–4 mm wide; internodes < 2 mm . . . . . 8. *D. × corinthiaca* (*D. aliciae* × *D. glabripes*)

TABLE 1.—Comparison of *Drosera ericgreenii* and *D. hiliaris*

| Character       | <i>D. ericgreenii</i>  | <i>D. hiliaris</i>   |
|-----------------|--|--|
| Stem            | short, < 100 mm  | well developed in flowering plants, > 100 mm   |
| internodes      | short in both growth and dormant phase                               | long in active growth phase, short in dormant phase                                    |
| Stipules        | lacinate, triangular to rectangular, papery                          | inconspicuous, reduced to short setae and hidden in dense woolly indumentum of petiole |
| Scape           | ascending, base curved   | ± erect, base straight   |
| Leaves          | narrowly oblong to broadly obovate, apex rounded                     | narrowly oblanceolate, apex acute  |
| Leaf tip glands | long marginal glands with enlarged, non-mucilaginous, unifacial tips | marginal glands with knob-shaped mucus-secreting tips                                  |
| Flowers         | 18–22 mm diam.   | 38–42 mm diam.   |

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## LAMIACEAE

A NEW COMBINATION IN *SYNCOLOSTEMON*

A re-assessment of the relationship between *Syncolostemon* and *Hemizygia* based on molecular and morphological data (Otieno *et al.* 2006b), showed that neither genus as previously circumscribed, was monophyletic, and thus led to the merging of *Hemizygia* into *Syncolostemon*, the earliest name. Members of the genus, as newly circumscribed, are characterized by fused anterior stamens, a feature that sets them apart from other genera in the tribe Ocimeae (Paton 1998). In Otieno *et al.* (2006a, b), several name changes were made in the combined *Hemizygia* and *Syncolostemon* to conform to the new circumscription. However, *Hemizygia cinerea* Codd was inadvertently omitted. The new combination for this species is presented below.

***Syncolostemon cinereum* (Codd) D.F.Otieno & Retief**, comb. nov.

*Hemizygia cinerea* Codd in *Bothalia* 12: 6 (1976). Type: KwaZulu-Natal, Cathedral Peak Forest Research Station, *Killick 1644* (PRE, hol.).

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## PTERIDOPHYTA: ASPLENIACEAE

*ASPLENIUM LOBATUM* VAR. *PSEUDO-ABYSSINICUM*, A NEW RECORD FOR SOUTH AFRICA

*Asplenium lobatum* Pappe & Rawson is a terrestrial fern with tufted, glabrous, narrowly lanceolate to elliptic fronds of up to 400 mm long. The stipe is dark matt brown, 45–230 mm long, glabrous or with a few hair-like scales and is sometimes vigorously proliferous. This fern is found on shaded floors of high-altitude, evergreen forests, often away from water,

where it can form dense stands. The species is very variable, especially in the degree of lamina dissection and the shape and proportions of the pinnules. In general, Zimbabwean material is more often 3-pinnate to 4-pinnatifid with narrowly linear ultimate lobes, whereas South African material is generally 2-pinnate to 3-pinnatifid, with broadly obtuse ultimate lobes.