A new *Drosera* hybrid: *Drosera* ×*bockowskii* (Droseraceae)

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Abstract: *Drosera* ×*bockowskii* Scholl, a new nothospecies, is the first successful hybridization between *Drosera capillaris* and *Drosera filiformis*.

Introduction

Though the ranges of *Drosera capillaris* and *Drosera filiformis* overlap in both North Carolina and the Florida panhandle a natural hybrid of the two has never been reported. Here I am reporting the first successful artificial hybridization of them (Figs. 1 & 2).

Methods

Naturally occurring plants of *Drosera capillaris* Poiret were collected from my property in Liberty County, Florida and potted up for ease of working with the flowers. *Drosera filiformis* Rafinesque var. *floridana* Rice grown from seed collected in Washington County, Florida sent to me by Jim Bockowski was also used. All plants used were grown in natural sunlight outside. Stamens were removed from the flowers with fine pointed forceps as carefully as possible to try to prevent self-pollination. This seems to stimulate the flowers to close, which coupled with the *D. filiformis* flowers sometimes beginning to close on their own, just as the *D. capillaris* were beginning to open, resulted in several accidental selfings. The removed stamens were rubbed onto the stigmas of the recipient flowers. Between 18 April and 15 May 2019, I attempted 33 crosses with these plants, 17 were *D. capillaris* pollinated by *D. filiformis* and 16 were *D. filiformis* pollinated by *D. capillaris*.

Figure 1: *Drosera* ×*bockowskii.*

Results

All of the attempts to pollinate *D. capillaris* by *D. filiformis* in 2019 resulted either in *D.*

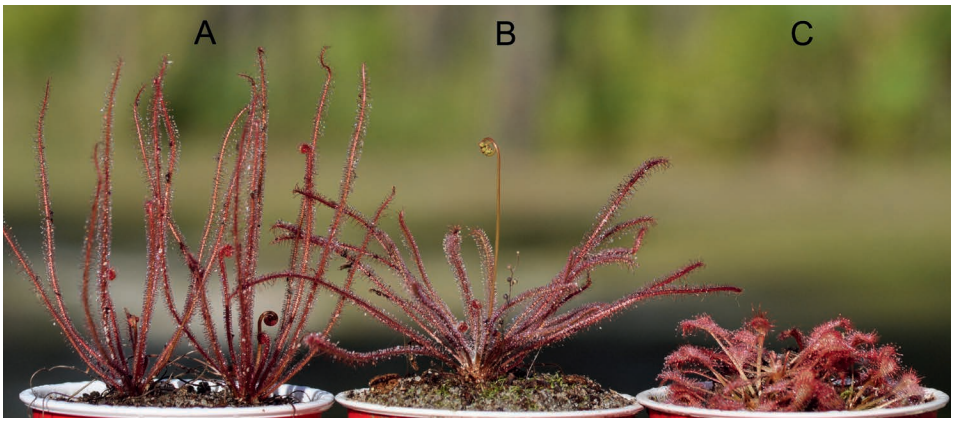

Figure 2: (A) *Drosera filiformis* var. *floridana*, (B) *D.* ×*bockowskii*, and (C) *D. capillaris*.

capillaris seed being produced or no viable seed at all and 18 more attempts made in 2020 and 2021 were also unsuccessful. Both the very first attempted cross of *D. filiformis* × *D. capillaris* on 18 April 2019 and the very last on 15 May 2019 however were successful. The 18 April pollination resulted in 3 germinations, 2 of the plants lived long enough to get leaf cuttings started and are still alive. The 15 May pollination resulted in 11 more clones, all of which lived long enough to get leaf cuttings started so there are now 13 living clones of the F1 hybrid.

In the flowering season of 2020 very few of the F1 flowers actually opened and when they did the anthers often failed to dehisce before the flower closed, resulting in very little or no pollen being available. On six occasions, I was able to get enough pollen to attempt selfing the flowers or cross-pollinating different clones. All of these along with 20 more attempts that I made in 2021 were unsuccessful, indicating that the F1s are probably self-sterile. I have however been able to

Figure 3: Left: Mature plants of (*Drosera capillaris* × *filiformis*) × *D. capillaris* grown from leaf cuttings from one surviving seedling germinated from the seed in Fig. 6B. Right: Three unopened flowers of *Drosera* ×*bockowskii* with protruding stigmas that were pollinated with *D. capillaris* on 12 July 2020 resulting in the first of two successful F2 back-crosses.

successfully pollinate the F1 hybrids with pollen from *D. capillaris* on two occasions to produce back-crossed F2 hybrids (Fig. 3). At least one of these was made by pollinating the stigma tips protruding through the petals of an unopened *D. ×bockowskii* flower (Fig. 3). As of this writing none of the F2 hybrids have bloomed.

I have not attempted back-crossing the F1 hybrids with *D. filiformis* because the two are so similar that their offspring would most likely be difficult to distinguish from *D. filiformis*. I may someday however try the cross using the F1 hybrid as the seed parent to see if it is possible, but at this time, I see no reason to attempt it using *D. filiformis* as the seed parent and have no plans to do so.

***Drosera ×bockowskii* (*Droseraceae*)** Scholl, *nothospec. nov*.

TYPE:

Plants of FLORIDA, artificially hybridized and cultivated at Liberty Co., Fla., U.S.A., 29 April 2021, B.Scholl #1 (NY - holo)

SPECIMENS OF PARENTS:

The pollen parent, *D. capillaris* Poiret, wild collected plants from Liberty Co., Fla. Voucher Scholl #2 (NY).

The seed parent, *D. filiformis* Rafinesque var. *floridana* Rice, from seed collected in Washington Co., Fla. Voucher Scholl #3 (NY).

DIAGNOSIS:

Flowers pink, rosette semi-upright, leaves green to red, tentacles red, forming a winter hibernaculum.

Drosera ×bockowskii differs from *Drosera capillaris* (whose features are given in brackets) by having linear leaves with relatively short petioles (Fig. 4B), the leaves unroll as they open [leaves nearly round to spatulate with relatively long petioles, the lamina unfolds as the leaves open (Fig. 4C]; flowers often not opening fully, petals pink to lavender, styles relatively long placing stigma tips out of reach of anthers preventing self-pollination when the flower closes (Fig. 5B) [flowers open fully, petals nearly white to light pink stigmas touch anthers on closing possibly resulting in self-pollination (Fig. 5C)]; sepals have stalked glands capable of capturing small prey [sepals lack stalked glands]; seeds approximately three times as long as they are wide, warts arranged randomly (Fig. 6B) [seeds approximately two times as long as they are wide, warts usually arranged in longitudinal rows (Fig. 6C)]; forms a winter hibernaculum [remains active year-round does not form a hibernaculum].

Drosera ×bockowskii differs from *Drosera filiformis* (whose features are given in brackets) by having linear leaves with a noticeable petiole expanding slightly from base toward tip ending acutely (Fig. 4B) [leaves filiform without noticeable petiole, gradually narrowing toward tip to a fine point (Fig. 4A)]; stipules deeply divided into multiple narrow lobes (Fig. 4B) [stipules woolly (Fig. 4A)]; flowers often do not open fully, filaments relatively short leaving anthers well below stigmas preventing self-pollination when the flower closes (Fig. 5B) [flowers open fully stigmas touch anthers on closing possibly resulting in self-pollination (Fig. 5A)]; seeds approximately three times as long as they are wide (Fig. 6B) [seeds approximately two times as long as they are wide (Fig. 6A)]; rosette is semi-upright (Fig. 2B) [rosette upright (Fig. 2A)]; form changes with shorter leaves and a flatter rosette between flowering and dormancy [leaf and rosette form remain the same throughout the growing season].

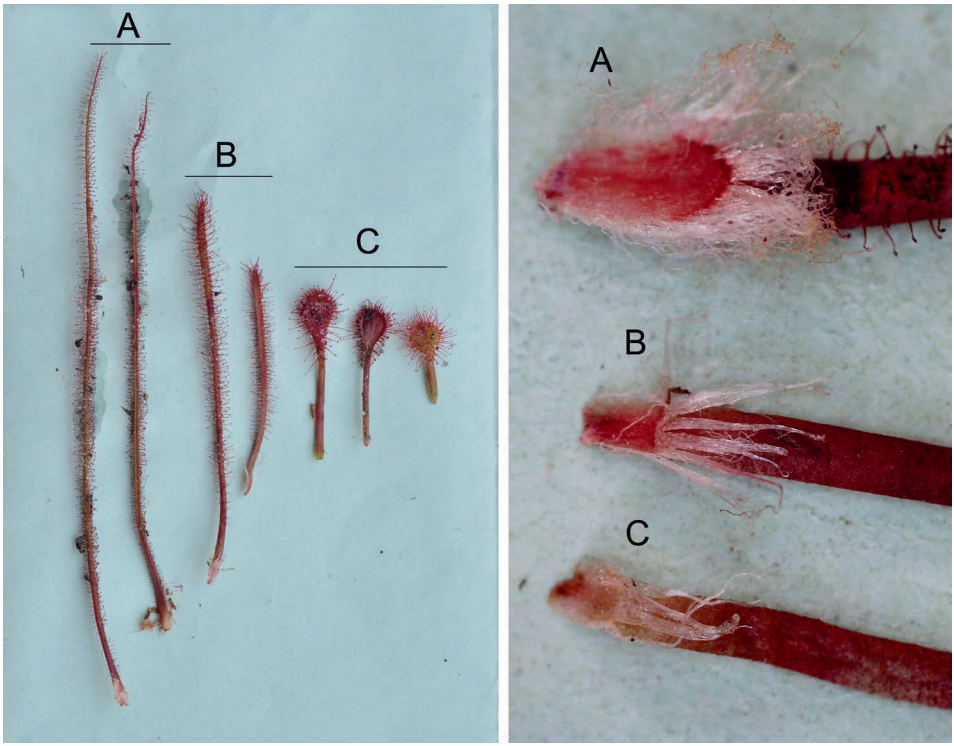

Figure 4: Leaves (left) and stipules (right). (A) *Drosera filiformis* var. *floridana*, (B) *D.* ×*bockowskii*, and (C) *D. capillaris*.

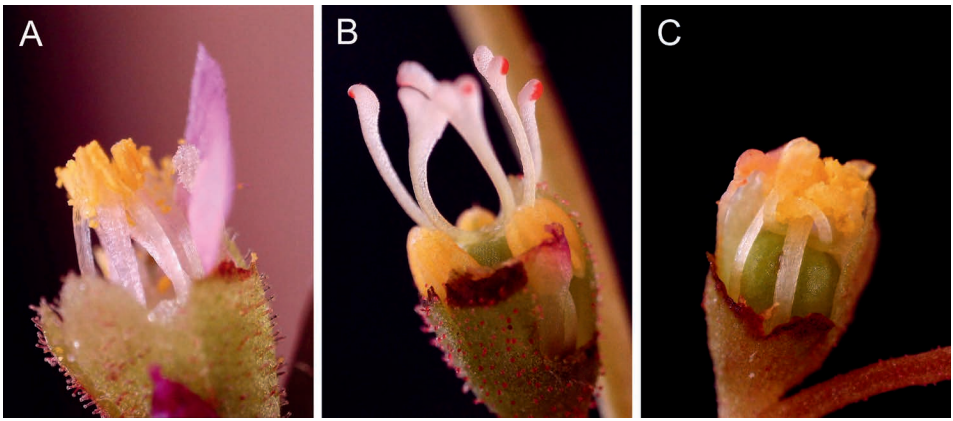

Figure 5: Flowers from which petals were removed soon after closing to show the relation of anthers to stigmas. (A) *Drosera filiformis* var. *floridana*, (B) *D.* ×*bockowskii,* (C) *D. capillaris*.

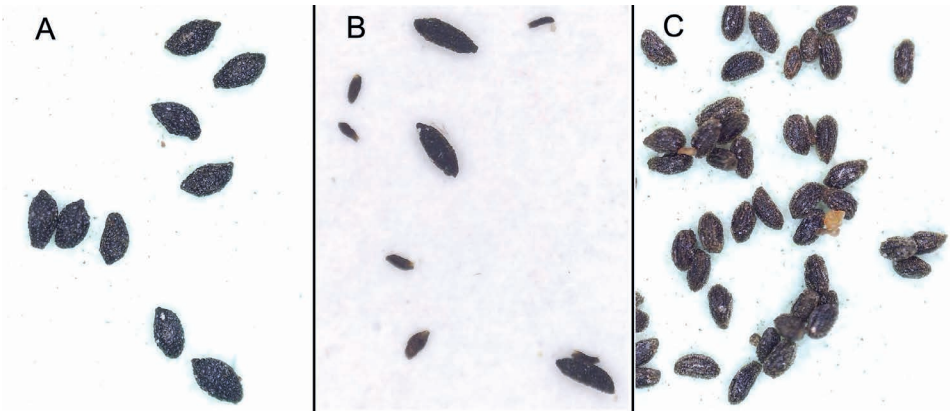

Figure 6: Seeds. (A) *Drosera filiformis* var. *floridana*. (B) *D.* ×*bockowskii* × *D. capillaris*. Three well-formed seeds resulting from the pollination of *D.* ×*bockowskii* flowers shown in Fig. 3 by *D. capillaris*, two of these germinated and one survived. (C) *D. capillaris*.

Flowering season: March through May.

Comparisons were made at early flowering time of at least ten individuals of each of the three plants considered. At this time of year *D.* ×*bockowskii* appears much more similar to its seed parent *D. filiformis* than it does to *D. capillaris*. Between the end of flowering and dormancy it forms shorter leaves and a flatter rosette and appears somewhat more intermediate of its parents. *Drosera capillaris* leaves also shorten and form a flat rosette after flowering but it does not go dormant. Some features such as leaf and petiole length, etc. proved to be too variable to be of value therefore actual dimensions were excluded from the diagnosis in favor of supporting photographs.

ETYMOLOGY:

The epithet, bockowskii honors my dear friend, the late James Michael (Jim) Bockowski, who was planning to attempt this cross at the time of his death.

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