"On The Origin of Living Ornaments"

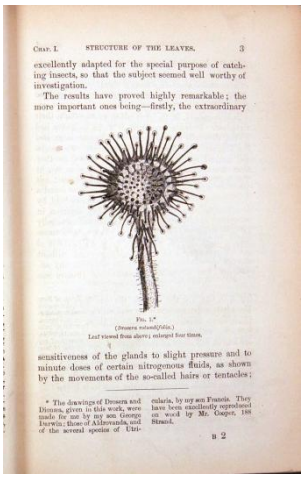
Sundews (*Drosera sp.*)

Sundews, *Drosera* sp., comprise a genera of carnivorous plants with over 160 of species that supplement their nutrition with insects they lure, capture and digest using mucilaginous glands covering their leaves. This compensates for the poor mineral composition of soils in their natural environment. Due to this unique adaptation and phytochemical profile (including antimicrobial, antifeedant, allelopathic, and medicinal compounds), *Drosera* have been a studied extensively to elucidate many facets of plant biology.

Drosera Fun Fact!

Early studies on this genus were done by Charles R. Darwin, naturalist and author of the famous *On The Origin of Species*. Extensive studies of *Drosera rotundifolia* led him to conclude sundews, like animals, could secrete acidic fluids and ferment when correctly stimulated. The results of his and his son's experiments were published as a book titled *Insectivorous Plants* in 1875. Even now, this remains a primary source of knowledge and understanding of this genus and forms the basis for most of our understanding of carnivorous plants.

Drosera rotundifolia growing in the ornament and mist beds in the Bovey greenhouses



Charles R. Darwin and his book Insectivorous Plants

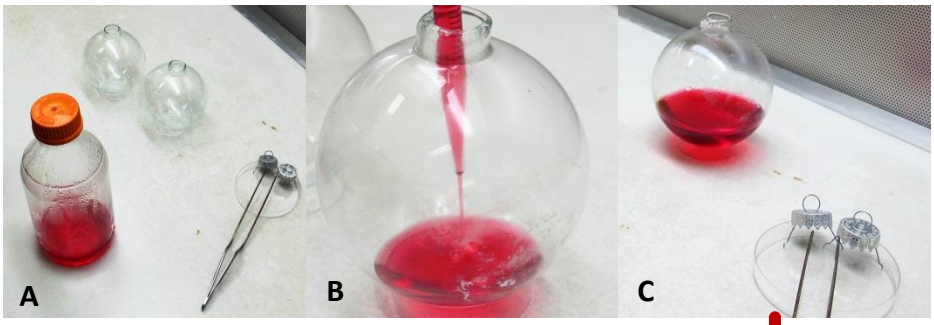
Ornaments & Outreach – GRIPP and United Way Partnership

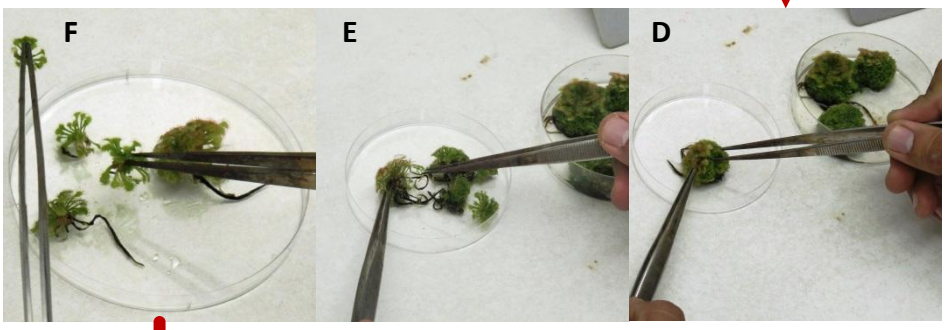
A combination of the science of micropropagation, historical relevance of the plant, and the novelty of a living ornament led to the first Living Ornament sale in the holiday season of 2013. With over 200 ornaments sold for charity, this GRIPP-United Way partnership provided an interactive educational platform allowing a glimpse into the fascinating world of plants as well as our need for greater commitment to plant conservation and environmental consciousness while providing support for the local community and its constituents.

Inside The Ornaments

The production of the ornaments is a variation of typical micropropagation done at GRIPP for the preservation of plant germplasm. Glass ornaments with steel tops were sterilized by autoclaving at 121 ^{0} C for 45 minutes. Cape Sundew/Venus Flytrap Pretransplant Basal Medium was prepared with the addition of Phytagel as a gelling agent, sucrose as an energy source, and food coloring to achieve desired pigmentation (red/green) in the media.

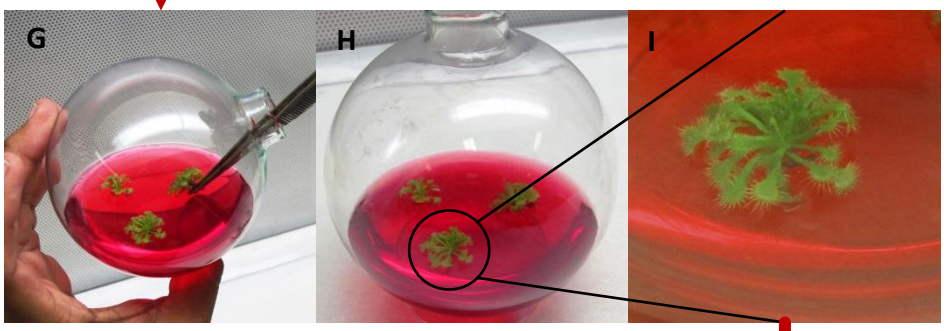
Freshly autoclaved media being dispensed into ornaments in an aseptic fashion, cooled, and solidified (A-C).

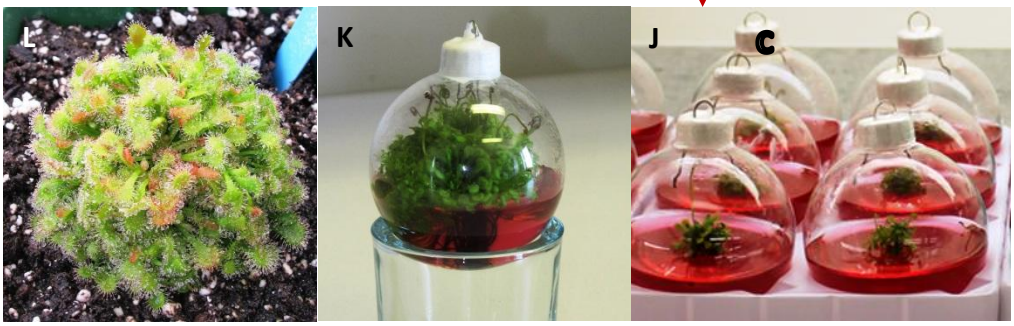




Rosettes from in-vitro Sundew plants (*Drosera rotundifolia*) were taken and trimmed to remove dead leaves as well as most of the root system (D-F).

Once trimmed, the rosettes were carefully placed inside the ornaments, taking precautions to maintain sterility. Once cultured, they were sealed using parafilm (G-I).





Ornaments were acclimatized for a week in controlled growth chambers at 25^{0}C (J). Instructions on how to care for the ornament (K) replanting (L) , and contact information for any further questions are available at www.gripp.ca.