



PHILADELPHIA CACTUS & SUCCULENT SOCIETY

founded 1942

www.philacactus.org

2ND MEETING OF 2022

FEBRUARY 13

11:00 AM (PLANT SET-UP)

11:45 (MEETING)

NOON - LECTURE

[THE DISCOVERY CENTER - PHILADELPHIA](#)

you can also join us virtually!!

Zoom Link

<https://us02web.zoom.us/j/87829192784?pwd=NEw3bzFJZFphVHI2T0dxV1NpY0ovQT09>

Meeting ID: 878 2919 2784 Passcode: 707346

PRESENTATION: "SAVE OUR SUCCULENTS"

PRESENTED BY KAREL DUTOIT

As succulents have become a worldwide phenomenon, illegal gathering of South Africa's rare succulents has become a serious problem, especially since 85% of habitat for these plants has been destroyed. Karel will discuss his and others' efforts to preserve these magical plants.



About Karel:

Karel is a lifelong resident of South Africa and is the Endangered Species Unit Commander in Springbok, Western Cape. He has had a lifelong interest in the succulent plants of the Western Cape and leads tour groups annually.

FEB PLANT OF THE MONTH

The categories can be found here: www.philacactus.org/plant-of-the-month/

If competing, please try to arrive at 11 to set-up .. The lecture starts at noon!

CACTUS

Parodia Group

subfamily Cactoideae, **tribe** Notocactae

examples Eriosyce, Copiapoa, Parodia, Frailea, Uebelmannia

SUCCULENTS

Asclepiadaceae

examples Caralluma, Stapelia, Hoodia, Pseudolithos, Trichocaulon Ceropegia, Brachystelma, Hoya, Huernia, Fockea, Ceropegia

SPECIAL CATEGORIES

Double your Pleasure

Representatives of two different genera belonging to the same family, in separate pots, (counted as one entry)



FRUITY CACTUS PHOTOS AND TEXT BY WAYNE MACDONALD

Flowers can be confusing. There are dozens of terms for the individual parts, groups of parts and morphological elements (the shapes of things). But, what is truly amazing is the fact that all the fruit we eat emanates from those flowers and surrounding tissue.

Flowering plants are called angiosperms which first developed some 120 million years ago. There's been plenty of time for them to speciate creating a wide variety of forms, estimated to encompass over 400,000 species today. Now, to a botanist, the term 'fruit' is defined as a "mature ovary including the seeds" so the vegetables, excluding root crops, and most grains and nuts we eat, are also fruits. Botanists organize fruit into 14 groups comprised of 95 individual categories. For this article, we'll assign the group and category to the cactus fruit.



Cut fruit of the fishhook barrel cactus Ferocactus wislizeni.

First, let's look at two other fruits within the berry group to get a baseline for comparison. If you slice a tomato through the equator, you'll see that the seeds are organized into individual chambers. The space they occupy is called the loculus and the chamber walls form the carpel. By the way, botanists who study fruit are called carpologists!

When the fruit was still in its flower form, the carpels were encased by a larger structure called the ovary. A tomato falls within the berry group for a number of reasons with one being that it comes from a flower with a single ovary encasing one or more carpels, each of which hold the seeds.

Another reason is that it is indehiscent, which means that seed dispersal is accomplished while the fruit is still closed. The opposite is dehiscent where the fruits open to disperse their seeds. Some dehiscent fruits shoot their seeds great distances. Search for "ballistic plant seeds" to see some cool examples.

A third reason that a tomato is a berry is because of its tissue. At the very center is the harder endocarp, the middle juicy tissue is the mesocarp and the skin is the exocarp. The skin will not hold its shape when removed, which makes the tomato a berry (group) and bacca (category).

If you cut open a lemon at the equator you'll find the same three characteristics with the exception that citrus have a leathery, pithy rind. This difference places citrus in the berry group with a subcategory of hesperidium (named for the Greek garden of Hesperides). So, we have a tomato which is berry > bacca, and citrus which is berry > hesperidium.

Now back to the cactus. The commonly named prickly pear jam can be made from the fruits of many cactus species, but most often from plants in the flat stemmed opuntioides. The flowers develop in a complex fashion and deserve an article of their own (hint: it all starts when the plant grows a leaf). For now, let's identify the berry category for a cactus fruit.



Interior of an overripe prickly pear.

Of the three elements we chose to identify the fruit type, the cactus fruit is one, indehiscent (encases the seeds for dispersal) and two, is borne from a single ovary with one or more carpels. For the third element, if we look at the surrounding tissue, then we see that the seeds are restricted to a single chamber. This more closely aligns with an acrosarcum which is defined as "seeds embedded in fleshy pulp without a distinct endocarp." There you have it, opuntia flowers are berry > acrosarcum. Or are they?

Botany is a science and new data initiates a change in thinking. What this journey has taught me is that cactus are quite unique, and there is currently a debate between botanists about the classification of the fruit. At least one well respected botanist posits that the cactus fruit may best be categorized with apples and pears (pommes) prompting some to call it a false berry. To unpack that, we'll have to wait for another article where we closely examine the complex and confounding flower which produces this tasty little fruit.

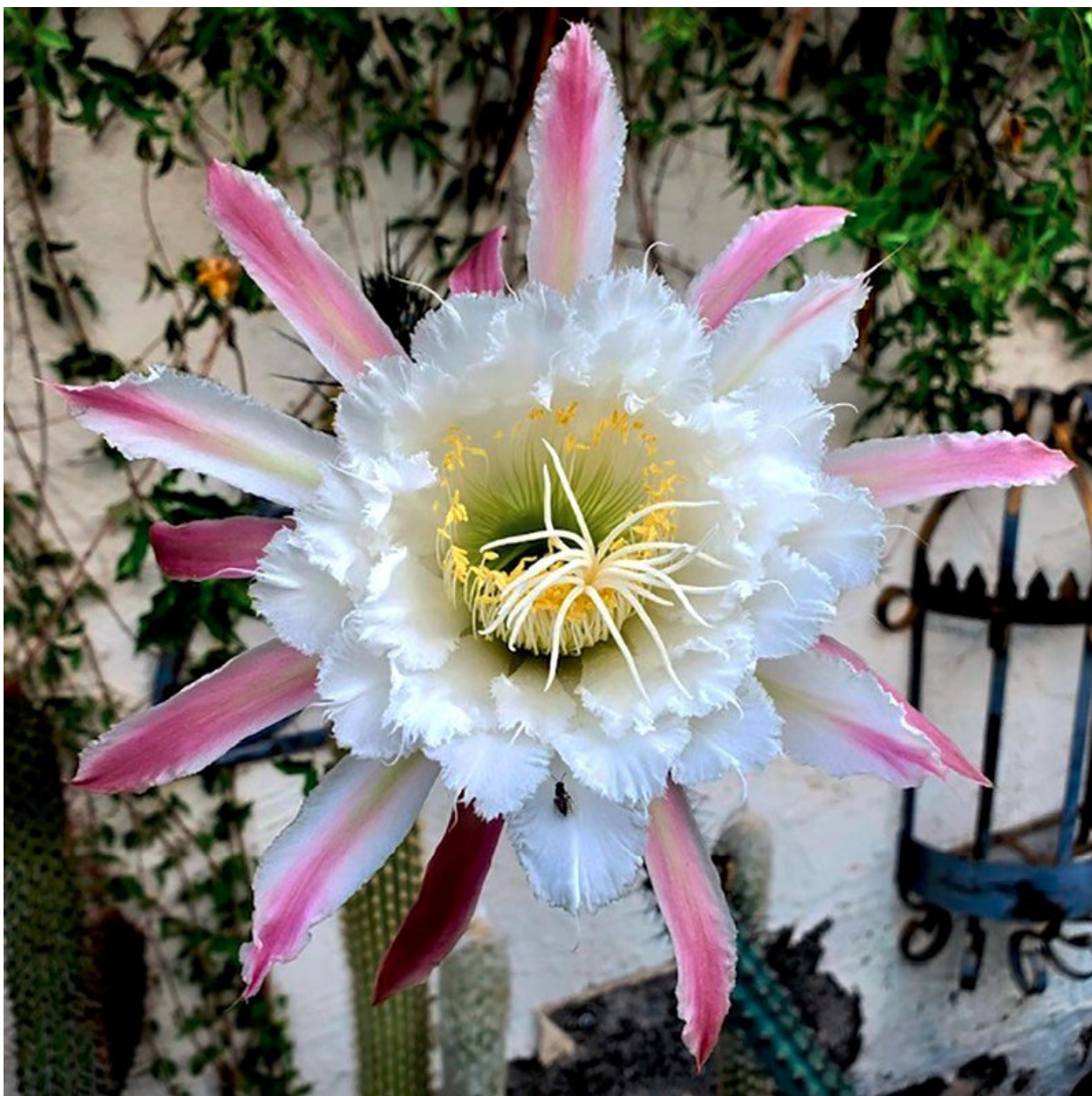
Finally, if you can't wait for your opuntia to flower and then fruit so you can cut one open and look inside, then head to the grocery store and pick up a dragon fruit (Hylocereus undatus) which is in the Cactaceae family and quite yummy.



The ubiquitous dragon fruit.

Sources

- Spjut, Richard W.: *A Systematic Treatment of Fruit Types*, World Botanical Associates, June 2015, http://www.worldbotanical.com/fruit_types.htm
- Stuppy, Wolfgang and Kessler, Rob, *Fruit - Edible, Inedible, Incredible*, Kew, 2013
- Mauseth, et. al., *A Cactus Odyssey - Journeys in the Wilds of Bolivia, Peru, and Argentina*, Timber Press, 2002
- Almeida, et. al., *Pericarp development in fruits of epiphytic cacti: Implications for fruit classification and macro-morphology in the Cactaceae*, Botany, 06/04/2018



Cereus aethiops posted December 11 by CACSS member Chris Ginkel.

Check us out on FACEBOOK!!



Check us out at:

www.facebook.com/groups/202733996526503

It's a way to share photos and ask questions about all things cactus and succulents!

PHS FLOWER SHOW 2022 SIGNUPS

STAY TUNED!!

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