

Science fair Logbook \ Presentation script

- Where did this idea come from? Dec 20. Started feb 12

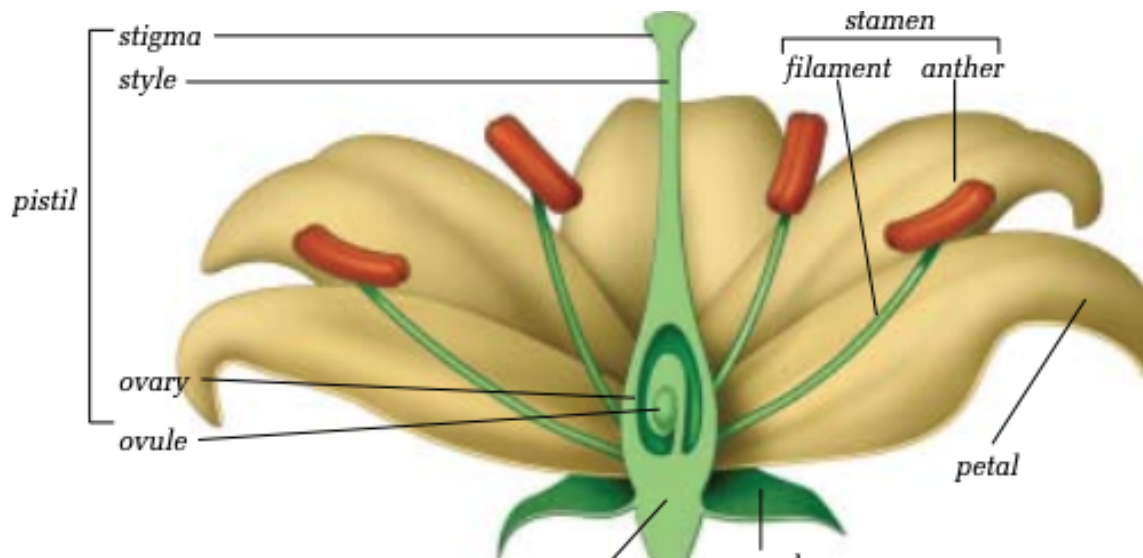
During the first unit in our science class (biodiversity) we came upon one topic of the reproduction of animals and plants. I personally found the topic of flower reproduction fairly intriguing. When thinking of my science fair idea, I remembered the topic. But doing a simple study on something most if not every person in the class already understands didn't seem ideal but due to some difficulties i had at home time was lost and so i made a small twist to the topic. I will be doing a study on whether or not it's possible for two different types of flowers of a similar species to reproduce into a hybrid. A more specific term for it being hybridization.

- Intro/background Feb 17 - 20

The first thing we need to know is how flowers produce offspring.

To know that, we need to understand its structure.

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- stigma

The top of the female part of the plant

- style

The style is a long tube like thing that connects the stigma to the ovary

- Ovary

Is what contains the sex sells (pollen grains and ovules)

- ovules

What contains the female gametes of a plant.

And all of these are part of the female part of the plant also referred to as the Pistil

- Filamen

The thin stem that holds the anther

- Anther

Is what contains pollen.

And both of those are part of the stamen which is the male part of the plant

I
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Now that we know the structure of the plant we need to know how a plant can reproduce. A flower like the one I am about to explain is sexually reproducing plant

When the pollen of the flower is transported from the stamen to the stigma (which can happen because of things like bees butterflies wind etc...) it travels down to the ovary and unites with the ovule which then form an embryo which will further develop into a zygote and then even further develop into another individual.

pollination in plants or more specifically, flowers.

- Cross-pollination

Cross pollination is the process in which a means of transport for pollen has brought the pollen from one flower to another and then that pollen is used for reproducing the offspring of that flower.

- Problem/Question 20-22

If two flowers of a similar species cross-pollinate will it make a hybrid of the two with similar characteristics and structures?

- Hypothesis

If two flowers of a similar species cross-pollinate, then the offspring will have similar traits and characteristics to the flowers because it will have the genetics of both.

- What does hybridization Mean?

I'm assuming the first question that might pop up in the heads of my dear listeners is "what is hybridization". Understandable question. When I was

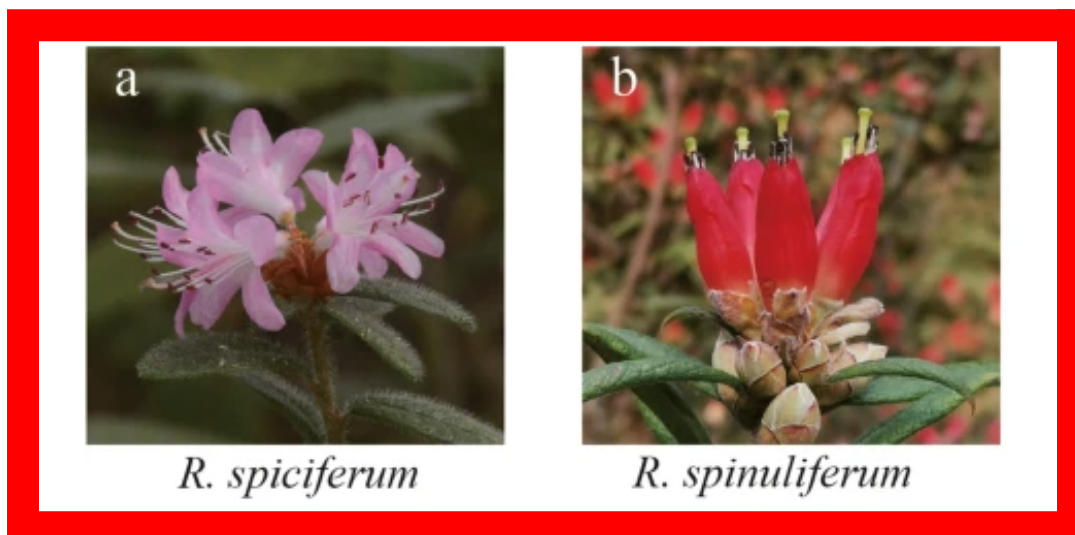
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doing my research, I personally didn't see it being used all that often but it does in fact have the exact definition to what my research is mostly about.

Hybridization is when two different species of a plant or animal are interbred together to produce offspring that have similar characteristics to both parents.

- Types of hybridized flowers Feb 23

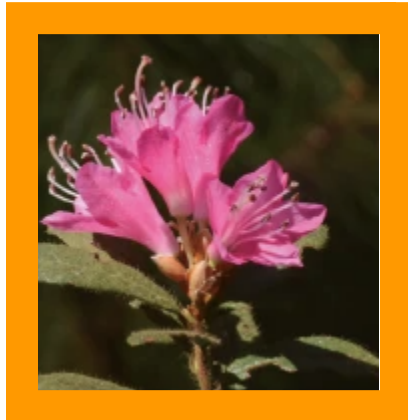
Natural



These two flowers are both rhododendrons. one is more pink and open while the other is a deeper red color and more of a closed look. These are one of the 1200+ species of rhododendrons.

The result of hybridization between these two rhododendrons resulted in a flower like this

I
III



As we can see the structure of this flower is much more similar to the female parent. But we can see a resemblance to the male parent because it has a deeper pink color.

From what we can see from the look of the leaves of the plant it can be confirmed that it did in fact grow on the same type of plant as the female parent. This type of hybridized flower is a natural one but if we look more into hand pollinated flowers we can find many more results.

Hand pollination

Here are many examples of hybridized hibiscus flowers that were hybridized and grown by people. there are over 200 different types of hibiscus species.

- 1

Male parent

Female parent



Tahitian Purple Passion 🍷



Tahitian Lavender Storm 🍷

I
III

Offspring



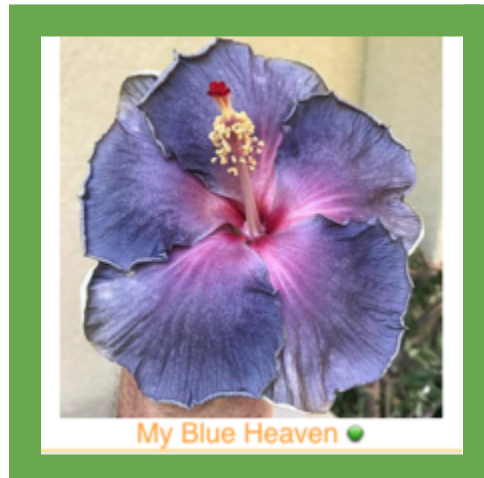
Structure: male parent

Looks: resembles light colors of the female parent but is more similar to the male parent.

- 2

Male parent

Female parent



I
III

Offspring



Structure: female parent
looks/ color: more vibrancy like the male parent
but similar colors to the female parent

- 3

Male parent

Female parent



I
III

Offspring



The structure of the leaves looks more like the male parent along with most of its color but we can see a resemblance of the center parts of the offspring and the female parent.

- Data 24-25

Out of all of the 20 hybridized hibiscus flowers I found (including the one I presented with) 7 of them resembled the female parent and 13 resemble the male parent.

- *Analysis*

When two flower species crossbreed, the resulting offspring can inherit traits from one or both parents. Factors such as gene dominance can impact the resemblance between offspring and parents. Though some of them had more resemblance to one parent than the

I
III

other its true that two different flowers of a similar species can hybridize