

Subject Re: FCOS Newsletter August 2024

From jsp1440@aol.com <jsp1440@aol.com>

To: JSP1440@aol.com <jsp1440@aol.com>

Date Today at 11:21 AM



Jewel Orchids: A World of Beauty

Step into the dazzling realm of Jewel Orchids, where the leaves steal the spotlight. Unlike their showy floral cousins, Jewel orchids are cherished for their exquisite foliage, boasting intricate patterns and a metallic sheen that would make any fashionista jealous. Perfect for plant collectors and indoor gardeners, these leafy wonders are more than just a pretty face—they're a blend of botanical beauty and intriguing biology.

Genus and Species: A Gallery of Green Gems

Jewel orchids span several genera, each with its own unique charm:

Ludisia

Species: *Ludisia discolor*

Origin: Southeast Asia, particularly Malaysia, Indonesia, and the Philippines.

Description: Known for its velvety dark leaves with striking red veins, *Ludisia discolor* is a true showstopper in any collection.

Anaechochilus

Species: *Anaechochilus roxburghii*

Origin: Tropical Asia, including India, Sri Lanka, China, and Southeast Asia.

Description: Often called the "King of Jewel Orchids,"

Anaechochilus roxburghii boasts golden, net-like veins against a lush green backdrop.

Macodes

Species: *Macodes petala*

Origin: Malaysia, Indonesia, New Guinea, and the Philippines.

Description: Famous for its iridescent, lightning-like leaf patterns, *Macodes petala* is like holding a piece of the night sky in your hand.

Dossinia

Species: *Dossinia marmorata*

Origin: Borneo.

Description: With its marbled leaves and subtle hues, *Dossinia marmorata* adds a touch of elegance and sophistication.

Research and Medicinal Uses: Nature's Little Pharmacists

Among jewel orchids, *Anaechochilus roxburghii* stands out not just for its beauty but for its medicinal prowess. In traditional Chinese medicine, it's known as "Jin Xian Lian," revered for its purported health benefits. This jewel orchid is packed with compounds that boast antioxidant, anti-inflammatory, and hepatoprotective properties. From treating hepatitis to managing hypertension and diabetes, *Anaechochilus roxburghii* is a botanical treasure trove of wellness.

How to Keep Your Jewels Shining!

Cultural Information:

Caring for jewel orchids can be a breeze if you know the tricks. Here's a handy guide to help your green gems thrive:

Light: Bright, indirect light is your orchid's best friend. Direct sunlight? Not so much—it can scorch those beautiful leaves. (Most jewel orchids prefer to grow in very low indirect light, making them perfect for low-light spots like offices or bathrooms.)

Temperature: Aim for a cozy 60-80°F (16-27°C). Jewel orchids like to stay warm and toasty.

Humidity: These orchids adore high humidity levels (60-80%). A humidifier or humidity trays work wonders. (Actually, other than *Ludisia*, most need consistent humidity and will benefit from being in a terrarium.)

Watering: Keep the soil consistently moist, but avoid waterlogging. Water when the top inch of soil feels dry. (These orchids definitely can't handle dryness for long—terrariums help maintain an evenly

moist environment.

Media: Opt for a well-draining peatling mix. This orchid mix or a mixture of perlite, sphagnum and sphagnum.

Lighting: Discolor likes bright light but not direct sunlight. If you have a window located in full sunlight, every two weeks, move the growing medium with the plant. (Don't need hardly any light at all.) And there are some varieties that are a little more tolerant of light. Even if it's just a few minutes per day, it's better than nothing, ensuring long-term growth and vitality.

So there you have it: the orchid world is growing, and there are many colors, patterns, and many leaf textures. You can find your favorite orchid in the garden? You can find your favorite orchid in the garden?



Ludisia discolor

This is a very rare and expensive orchid with a dark, almost black, color and a very dark, almost black, color.

It is a very rare and expensive orchid with a dark, almost black, color and a very dark, almost black, color. It is a very rare and expensive orchid with a dark, almost black, color and a very dark, almost black, color.



Ludisia discolor

This is a very rare and expensive orchid with a dark, almost black, color and a very dark, almost black, color.

It is a very rare and expensive orchid with a dark, almost black, color and a very dark, almost black, color. It is a very rare and expensive orchid with a dark, almost black, color and a very dark, almost black, color.



***Meconopsis petersii*:** Leaves: Green with golden veins that resemble lightning bolts. Flowers: Small, white, and borne on a spike.

Growth Habit: Terrestrial, prefers damp, shaded environments. *Meconopsis petersii* has many different varieties. The differentiation is based mainly on the colors and patterns of the veins on the leaf surface. Popular varieties/synonyms are mentioned below:

var. *albivittata* (only longitudinal veins)
var. *janicola* (white transverse and longitudinal veins)

Other synonyms of *Meconopsis petersii* include: *Amplexicaulis*, *Cupress*, *latifolia*, *foliolosa*, *Amplexicaulis* *petraea*, *Meconopsis*, *latifolia*, and *Amplexicaulis*.



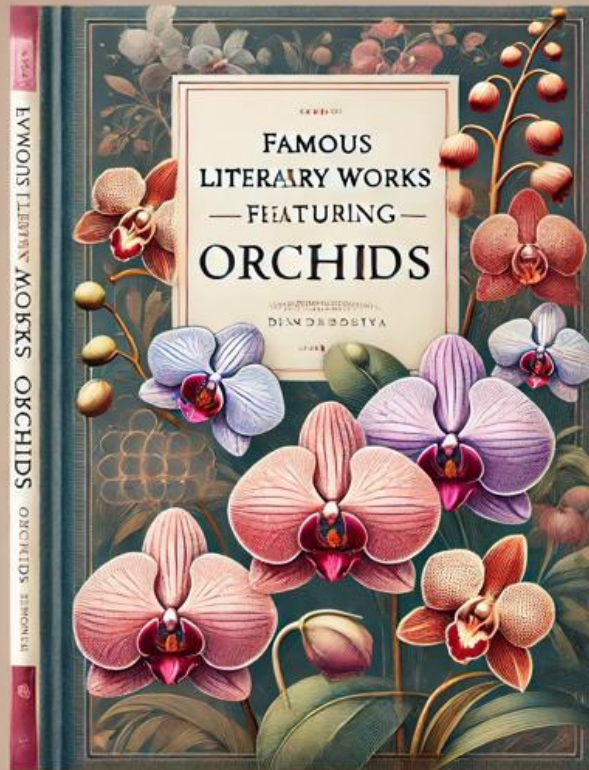
***Conopsea pulcherrima*:** Leaves: Dark green with a network of white veins. Flowers: Small, white, and arranged in a spike.

Growth Habit: Terrestrial, found in forested areas. *Conopsea pulcherrima*, the downy yellowish orchid, is one of the most common orchids native to eastern North America.

***Conopsea vernalis*:** Leaves: Velvety green with silver veins and a marked appearance. Flowers: Small, white to pale yellow. **Growth Habit:** Terrestrial, growing in moist, shaded areas. One of the most beautiful of the thick-leaved green orchids from Sarawak, Borneo, this variety is not often available. Typically, flowering in the summer, this species produces spikes that reach up to 12" tall. Grow in shade with warm temperatures for best results.



***Conopsea pulcherrima*:** *Conopsea pulcherrima* is an evergreen, herbaceous perennial in the genus Conopsea. It is the common woodlands white orchid, also known as the downy yellowish orchid, but it is also referred to as white orchid, and the leaves make one think of the white, downy yellowish orchid.



Orchids in Literature

"The Orchid Tree" by Susan Sontag is a short story that explores the world of orchids and the relationship between the author and the story of John Laporte and his obsession with the rare orchid, which brings meaning into the broader world.

"In the Time of the Butterflies" by Julia Alvarez is a novel that plays a symbolic role in the lives of the characters, who are the Mirabal sisters and their resistance against the Dominican Republic's regime.

"The Black Orchid" by Ian McEwan is a novel that features the character Black Orchid, who is a woman who is a symbol of the story's themes of power and control.



Low Humidity: If you live in a dry climate, consider using a humidity tray or a humidifier to maintain optimal humidity levels for your orchids.

Watering Frequency

Water your orchids early in the day to allow the foliage and roots to dry before nightfall. This practice helps prevent fungal infections. Ensure the potting medium is well-drained and avoid letting the orchid sit in standing water.

2. Adjust Light Exposure

Light Intensity

Orchids generally need bright, indirect light. During August, the sun can be intense, so it's crucial to protect your orchids from direct sunlight, which can cause leaf burn. Use sheer curtains or move your orchids to a location where they receive filtered light.

Monitor Leaf Color

Leaf color can indicate whether your orchid is receiving the right amount of light. Healthy orchid leaves are typically light to medium green. Dark green leaves may indicate insufficient light, while yellowish leaves can suggest too much light.

3. Temperature Management

Day and Night Temperatures

Orchids prefer a day temperature range of 70-85°F (21-29°C) and a night temperature range of 60-72°F (16-21°C).

Avoid placing orchids in areas with drastic temperature fluctuations or near air conditioning vents, as sudden changes can stress the plants.

Increase Air Circulation

Use fans to increase air circulation around your orchids. Good airflow helps reduce the risk of fungal and bacterial infections and keeps the temperature stable.

4. Feeding and Fertilization

Balanced Fertilizer

Use a balanced, water-soluble fertilizer (20-20-20) every two weeks to provide essential nutrients. Dilute the fertilizer to half the recommended strength to avoid overfeeding. During August, orchids are often in their active growth phase, making it an ideal time to fertilize regularly.

5. Pest Management

Regular Inspection

Regularly inspect your orchids for signs of pests such as aphids, spider mites, and scale. Look under leaves and around the base of the plant.

If you notice any pests, isolate the affected plant to prevent the infestation from spreading.

Natural Remedies

Use insecticidal soap or neem oil as a natural remedy to control pest infestations. Ensure you follow the product instructions carefully to avoid harming the plant.

6. Repotting and Root Care

Assess Root Health

August is a good time to check the root health of your orchids. Healthy roots are firm and white, while unhealthy roots may be brown and mushy.

If necessary, repot your orchid using a fresh potting medium suitable for its type (e.g., bark for epiphytes, a mix of soil and perlite for terrestrials).

Repotting Steps

- **Remove the Orchid:** Gently remove the orchid from its current pot and shake off the old potting medium.
- **Trim Dead Roots:** Trim any dead or rotting roots with sterilized scissors.
- **Choose the Right Pot:** Select a pot that is slightly larger than the root system and has good drainage.
- **Add Potting Medium:** Place the orchid in the pot and fill it with fresh potting medium, ensuring the roots are well-covered but not packed too tightly.

7. Preparing for Blooming Season

Light Induction

Some orchids, such as Phalaenopais, may start preparing for blooming as the days get shorter in late summer and early fall.

To induce blooming, ensure your orchids receive adequate light and maintain consistent feeding and watering practices.

Stake Flower Spikes

As flower spikes emerge, provide support by staking them gently. This prevents breakage and allows the flowers to display beautifully.

Conclusion

August is a pivotal month for orchid care, with specific practices needed to ensure your plants remain healthy and vibrant. By adjusting watering routines, managing light and temperature, and providing proper nutrition, you can help your orchids thrive and prepare for the upcoming blooming season.

Remember, each orchid species may have unique needs, so it's essential to understand the specific requirements of your orchids. Happy growing!

Orchids on Mars

A story called *Orchids on Mars* by Michael Crichton, published in 1992, describes a mission to Mars to grow orchids.



Here is an artistic representation of a genetically engineered orchid designed to thrive on Mars.

Orchids on Mars! Just Imagine!

Picture this: delicate orchids blooming under the Martian sky, playing a starring role in transforming the Red Planet into a lush, habitable oasis. Sounds like science fiction? Maybe, but here's why it could be a reality sooner than you think!

Bioremediation: Martian Soil Makeover

Orchids aren't just pretty faces; they come with a fantastic fungi sidekick. Together, they could work wonders on Mars' inhospitable regolith, breaking it down and making it more welcoming for other plants. Think of them as the ultimate soil whisperers, prepping the ground for a thriving Martian garden.

Biodiversity: Building a Robust Ecosystem

Every good party needs variety, and the same goes for ecosystems. Genetically engineered orchids could introduce much-needed biodiversity to Mars. This diversity wouldn't just look nice; it would create a stable environment, supporting a wide range of life forms. Imagine a mini jungle in space, each plant doing its part to keep things in balance.

Oxygen Production: Breathing Life into Mars

Orchids, like their plant pals, are photosynthesis powerhouses. By turning carbon dioxide into oxygen, they could help make Mars' atmosphere breathable for future human settlers. So, while you're admiring their beauty, these orchids are hard at work, contributing to the planet's terraforming.

Aesthetic and Psychological Benefits: Beauty Beyond Earth

Let's face it, Mars isn't exactly the most visually stimulating place. Orchids could change that, adding a splash of color and beauty to the Martian landscape. Plus, for the humans living there, these flowers could offer a much-needed mental health boost. A little piece of Earthly beauty in an alien world could do wonders for the soul.

Pollination and Ecosystem Services: The Buzz of Life

Orchids often have complex relationships with their pollinators. Introducing them to Mars could kickstart a network of pollinators, essential for the reproduction of many plants. It's like setting up a VIP ecosystem party, with orchids inviting all the key players to the dance floor.

Genetic Engineering Advantages: Orchids with Superpowers

Why stop at ordinary orchids when you can have orchids with superpowers? Genetic engineering could give these plants traits to survive Mars' harsh conditions—think extreme temperatures, high radiation, and poor soil. These aren't your average garden flowers; they're bioengineered heroes ready to take on the Red Planet.

Research and Development: Learning from Martian Orchids

Studying how these orchids adapt to Martian conditions could provide valuable insights into plant biology and genetic engineering. It's not just about making Mars green; it's about advancing our understanding of life itself. These orchids could be

the key to unlocking new scientific frontiers.



Bioengineered orchids designed to survive on Mars could utilize several strategies to obtain and manage water in the harsh Martian environment:



1. **Water Harvesting:** Bioengineered orchids could be designed to utilize specialized root systems capable of reaching and absorbing water from the soil, even in the harsh, dry conditions of Mars. These roots could be equipped with sensors to detect water levels and adjust their growth patterns accordingly.

2. **Water Storage:** The orchids could store water in specialized structures, such as thickened roots or specialized leaves, to ensure a steady supply of water during periods of low humidity or when the soil is dry.

3. **Water Recycling:** The orchids could be designed to recycle water within their system, using specialized enzymes to break down organic matter and release water for reuse.

4. **Water Management:** The orchids could be equipped with specialized enzymes and proteins that help them manage water stress, such as by producing protective compounds that prevent water loss or by regulating the opening and closing of stomata.



5. **Water Transport:** The orchids could be designed to utilize specialized root systems that allow them to transport water from the soil to the leaves, even in the harsh, dry conditions of Mars. This could be achieved by using specialized enzymes and proteins that help the plant maintain a steady flow of water.

6. **Water Conservation:** The orchids could be designed to conserve water by using specialized structures, such as thickened roots or specialized leaves, to store water and prevent it from being lost to the environment.

7. **Water Recycling:** The orchids could be designed to recycle water within their system, using specialized enzymes to break down organic matter and release water for reuse.

8. **Water Management:** The orchids could be equipped with specialized enzymes and proteins that help them manage water stress, such as by producing protective compounds that prevent water loss or by regulating the opening and closing of stomata.



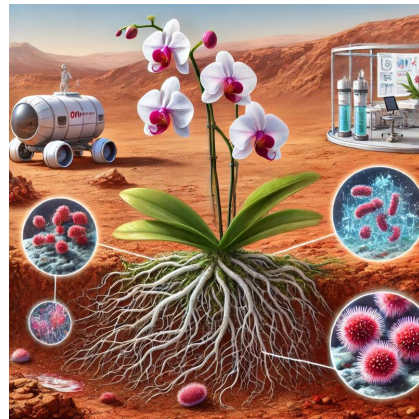
Scientists are working to develop a sustainable life support system for Mars. One of the key challenges is growing food. Scientists are exploring the possibility of growing crops in hydroponic systems, which use water and nutrients instead of soil. This could allow for the production of fresh food on Mars, reducing the need for resupply from Earth.



Another challenge is the lack of a breathable atmosphere. Scientists are working on developing a life support system that can provide oxygen and carbon dioxide for the crew. One approach is to use plants, which can produce oxygen through photosynthesis. By growing a variety of plants, scientists hope to create a sustainable life support system that can support human life on Mars.



Scientists are also exploring the possibility of using local resources to create a sustainable life support system. For example, they are working on developing a way to extract water from the Martian soil. This could allow for the production of drinking water and the growth of crops, reducing the need for resupply from Earth.



Scientists are also exploring the possibility of using local resources to create a sustainable life support system. For example, they are working on developing a way to extract water from the Martian soil. This could allow for the production of drinking water and the growth of crops, reducing the need for resupply from Earth.

For CAM plants, the stomata of the leaves remain closed during the day and open during the night. This allows the plants to conserve water and avoid wilting during the day. The plants are also able to store water in their leaves, which allows them to survive in arid environments.

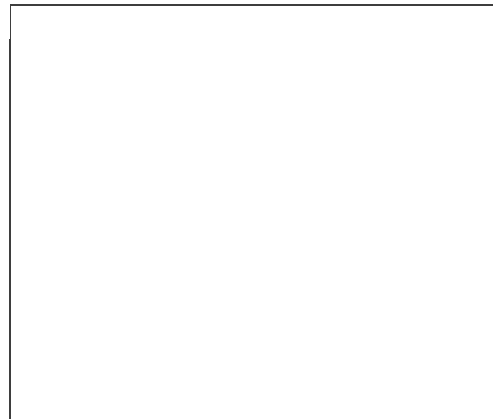


Environmental Engineering
Environmental Engineers could design a system that would allow the orchids to grow in a controlled environment that would protect them from the harsh conditions of the planet. This could be done by creating a greenhouse or a similar structure that would provide the orchids with the necessary light, water, and nutrients. The system could also be designed to monitor the orchids' growth and health, allowing the engineers to make adjustments as needed.

Hydroponics and Aquaponics
In the Martian soil and water, the orchids could be grown using hydroponics or aquaponics. These methods would allow the plants to grow without soil, which would be a significant advantage in a Martian environment. Hydroponics involves growing plants in a nutrient-rich solution, while aquaponics combines hydroponics with a system of raising fish, which would provide the plants with natural nutrients.

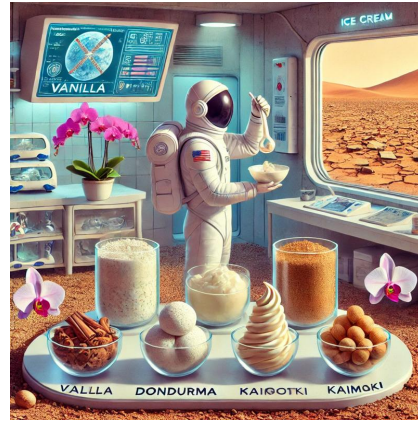


Genetic Modifications and Traits: The following gene cartridges can be inserted into orchid for phenotypic expression.









So, there you have it—orchids on Mars, not just for their beauty, but as pioneers in terraforming, ecosystem building, and maybe even a little dessert innovation. Who knew that the humble orchid could play such a cosmic



Showy lady's slipper (*Cypripedium reginae*), by David McAdoo

Join our friends at the Smithsonian Environmental Research Center for a talk about orchids with

Dennis Whigham: The Botany of Desire (And How I Got Hooked on Native Orchids)

Tuesday, Aug 20, 2024 – 7:00pm

How do plants make a living? That question has propelled botanist Dennis Whigham for his nearly 47-year career with the Smithsonian. Orchids were especially bewitching. On Aug. 20, join Dennis for a journey of discovery through the orchid world. He'll take you from their unlikely beginnings as "dust seeds," to the microscopic fungi they depend on to thrive, to their guiley or downright sneaky strategies to get pollinated. He'll also reveal some of the most shocking discoveries, including the realization that more than half our continent's native orchids are in trouble.



Discover how stewards across the continent are rallying to save native orchids through the North American Orchid Conservation Center, and what you can do to help ensure their survival.

This webinar will be recorded! Closed captions will be available during the live event and on the recording. By signing up on Zoom, you'll be able to join live and receive a link to the recording approximately 1 week after the live webinar.

<https://serc.si.edu/events/botany-desire-and-how-i-got-hooked-native-orchids>