PLANT GEEK SERIES

VARIEGATION ORIENTATION

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Welcome to this four-part Plant Geek series, which will focus on some niche horticultural topics that I think are fascinating. I hope you do to! Over the next several newsletters we will cover: 1) Variegation, 2) Plant Viruses, 3) Latin Nomenclature, and 4) Fasciation and Reversion. Buckle up. We're about to get really geeky!

Variegated plants have areas of green tissue as well as areas of white, silver, or yellow tissue. Sometimes there are additional colors such as pink in "tricolor" varieties. Variegated plants are one of the hottest houseplant trends during the last few years. Some variegated plants can be quite rare, which naturally increases demand for these plants, as well as their price-tags.

Interestingly, variegation often leads to slower growth. Variegated plants often have less photosynthetic capacity compared to solid green versions of the same plant. The white areas of tissue lack chlorophyll, and less chlorophyll results in less photosynthesis. For this reason, pure white plants do not exist. I have encountered pure white seedlings many times, but they never survive to maturity because they cannot photosynthesize. Even a pure white leaf on a variegated plant has a low chance of long-term survival.

Growing variegated plants is often a balancing act. They can be more susceptible to sunburn. However, they also need high light levels to compensate for their lower photosynthetic capacity. When grown at lower light levels, variegated plants may start producing solid green new growth (called reversion, which we'll discuss in a future newsletter) in order to capture more light energy. Although it sounds like variegated plants have an automatic biological disadvantage, they do occur naturally in the wild.

There are four main types of variegation in plants. They vary in how they are produced by the plant, how stable they are, and how they are passed on from one generation to the next.

Natural/Pattern Variegation is genetically programmed, much like our eye color or hair color. The pattern can be consistent or random (but "consistently random"). The pattern is the same on all leaves on a plant and the same from one plant to another. Natural/Pattern variegation is passed on when propagated, so the offspring look exactly like the parents. Calathea and variegated Chlorophytum (spider plant, Photo 1) are examples of natural variegation. By the way, most of my examples are going to be houseplants, but variegation happens in garden plants too.

Blister/Reflective Variegation is caused by tiny air pockets between layers of leaf tissue. Light hitting these air pockets is reflected, creating a silvery appearance. Like natural variegation, blister variegation may be a consistent or random (but "consistently random) and is passed on when propagated. Scindapsis, Peperomia argyreia (Watermelon Peperomia, Photo 2), Tradescantia zebrina (Wandering Dude), and some Anthurium all exhibit blister variegation.

Photo 1

Photo 2

Chimeral Variegation is caused by genetic mutation. Chimera is a term typically used to describe mythological creatures that are made up of body parts from various animals. However, chimeras are real! While incredibly rare, human chimeras exist, usually resulting from a twin embryo absorbing their sibling's cells while in the womb. And in the plant world, chimeras are very common! Chimeral plants are produced by genetic mutation, where one plant has areas of different genetic make-up. Some areas of tissue can produce chlorophyll, while others cannot. Chimeral patterns are random and can be quite unstable. Leaves on the same plant can have completely different patterns. Or, even a complete lack of pattern, as chimeral plants often produce solid white and/or solid green leaves. Chimeral variegation can be passed on to offspring, but only if the correct part of the parent plant is used for propagation. For example, snake plants (Sansevieria) can be propagated from leaf cuttings or stem cuttings (the stem of a snake plant is actually an underground rhizome, a type of modified stem). However, variegated snake plants are chimeras and their variegation can only be passed on through stem cuttings. A leaf cutting of a variegated snake plant (Photo 3) will produce new growth that is solid green. Variegated Epipremnum (Pothos, Photo 4), variegated Monstera, variegated Alocasia and Colocasia, and variegated Sansevieria are all chimeras.

Viral Variegation occurs when a virus infects the plant, causing chlorotic patches of tissue (areas lacking chlorophyll). Viral variegation can be detrimental causing necrotic tissue, but it can also create unique ornamental characteristics. Plant viruses are so interesting that we will discuss it separately in the next issue of our newsletter. **Stay tuned!**

Photo 3

Photo 4