



Hothouse FLOWERS



TOP LEFT:

Uncarina grandideri, a tree from the dry forests of Madagascar, blooming in the Desert Room.

TOP RIGHT:

Alsobia dianthiflora (lace flower), a succulent perennial from Mexico.

LEFT:

Angraecum sesquipedale (Darwin's orchid), an epiphytic species from Madagascar.

The New UW
Biology Greenhouse
is a Destination
for Students and
Lovers of Plants

BY NIALL DUNNE



Want to escape to the warm tropics or dry desert to see beautiful plants, but all you can afford is local bus fare? At the new 20,000-square-foot, state-of-the-art UW Biology Greenhouse—which opened at the new Life Sciences Building in the fall of 2021—you can immerse yourself in a majestic collection of exotic plants from around the globe, and learn about their evolution and ecology, all while saving your pennies for that big trip to Hawaii. (I'll get there some day, Limahuli Garden and Preserve!)

The Greenhouse's four collection rooms are open free to the public for casual walk-in browsing on non-holiday Thursdays, from noon to 4 p.m., and on the second and fourth Saturdays of each month, from 10 a.m. to 2 p.m. (The address

is 3747 West Stevens Way NE, and the entrance is easily accessible from the Burke Gilman Trail, which runs along the south side of the facility.)

I recently visited with Walt Bubelis—retired Edmonds College professor of horticulture and “Arboretum Bulletin” editorial board member—and a couple of his colleagues from the Edmonds College greenhouse. Walt started out his career at the original UW Botany Greenhouse back in the late 1960s, so some of the collection plants were old friends. But there also were many, many new specimens he'd never met before.

I can't imagine a more learned and enthusiastic tour guide than Walt. He led us through the desert, cool tropical, and warm tropical rooms of the greenhouse, sharing his encyclopedic knowledge of the world's flora. (The



TOP LEFT TO RIGHT:

Neobenthamia gracilis, a terrestrial orchid from Tanzania.
Nepenthes alata, a pitcher plant from the Philippines.
Oxalis gigantea, a thorny shrub from Chile.
Parodia warasii, a cactus from Brazil.

BOTTOM LEFT TO RIGHT:

Seemannia (Gloxinia) sylvatica, a dense groundcover from Bolivia and Peru.
Sinningia eumorpha, a tuberous perennial from Brazil.

greenhouse's wonderful staff also provide tours—at no charge—for groups of eight and more. You can sign up on their webpage: www.biology.washington.edu/facilities/greenhouse.)

The greenhouse was abuzz with activity when we arrived, and the visitors were not all casual plant admirers like us. There were many UW students there, too, working on class projects. The greenhouse is an education hub at the university—and not just for scholars of biology.

"The students you see here right now are actually from the astronomy department," said greenhouse manager Katie Sadler, who gave our small visiting group a very warm welcome. "They are looking for plant species in the greenhouse that exhibit Fibonacci number patterns, such as spirals. Art students come to sketch our plants, too, and find inspiration for sculpture, drawing, painting and digital art works."

"We host several biology lab sections here," continued Katie, "most recently one studying pollination syndromes between flowering plant species and different organisms, such as bird-of-paradise plant and sunbirds; *Amorphophallus* and beetles; and certain cacti and bats. A regular mutualism lab looks at evolutionary adaptations and mutually beneficial relationships between different species, such as ants and plants, ants and aphids, and nitrogen-fixing root nodules and bacteria."

As it has since the original facility was built in 1949, the greenhouse features several non-public rooms dedicated to pure research.

"Currently," said Katie, "we are housing an experiment that is studying a plant's defensive chemical signaling response to insect herbivory. There's also a project trialing a unique biofertilizer developed by a UW researcher for use on field crops, examining its efficacy under different conditions."

Probably my favorite public room was the "tree of life" room, which uses stacked rows of specimens to illustrate plant evolution over geological time (echoing the taxonomic collection at the Arboretum)—from slimy algae to cultivated flowering fruit trees. The greenhouse is home to an impressive 5000 individual specimens, representing about 3000 different plant species.

The high-tech facility has many automated features such as temperature- and light-controlled fans and vents. However, Katie and her crew of two full-time staff—plus a few enthusiastic undergraduates—rely on assistance from volunteers to keep the greenhouse running. If you're interested in helping out, email Katie at sadlergh@uw.edu. 🌱

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My Greenhouse Memories

BY WALT BUBELIS

Walt Bubelis with a specimen of *Welwitschia mirabilis* at the new UW Biology Greenhouse.

While pursuing my Masters in Botany at the University of Washington in the late 1960s, I supplemented my income by working part-time in the Botany Greenhouse under the direction of Jim Nishitani (see the Fall 2022 “Arboretum Bulletin”). The greenhouse was similar in size to the new structure but had more internal partitions. A couple of bays were for display purposes, but the others were for research projects conducted by individual professors.

I remember, for instance, Dr. Bastiaan Meeuse’s bay had a number of ground-level beds bordered by concrete walls in which he grew heat-loving plants such as *Sauromatum* and *Strapelia*. At the end of a project, he gave away extra strapelias to anyone who either had a wry sense of humor, like himself, or was foolish enough not to realize that these carrion flowers emitted very foul odors (attractive to pollinating

flies). The succulent plants and their blossoms are indeed striking but not at all suitable for small apartments!

I learned a number of tasks to help run the greenhouse, ranging from the menial (such as scrubbing clay pots clean with scraps of burlap) to more specialized ones (such as steam-sterilizing Dr. Meeuse’s soil beds and setting pollination cages for Dr. Art Kruckeberg’s research on the crucifer *Streptanthus*). A project that got me outside was collecting various species of slugs, bringing them back to the greenhouse, and feeding them until Dr. Gordon Orion of the Zoology Department was ready to start his experiments. Dr. Orion studied how slugs reacted to different levels of nicotine. To contain the slugs inside the greenhouse, we constructed large, circular, metal moats that restricted the slugs to an island in the center.

My work at the UW Botany Greenhouse later helped me set up—from scratch—the greenhouses at Edmonds College, where I taught horticulture for some 41 years. I got that position after Dr. Kruckeberg told me that the then-new college needed someone to teach basic horticulture. Originally, I only taught part-time and at night. As the program grew, I hired various part-timers myself, one of them being Doug Ewing. Eventually, Dr. Kruckeberg notified me that Jim Nishitani was retiring, and the Botany Greenhouse needed a new manager. I suggested Doug, who eventually got the job and stayed on there until his retirement—about the same time as plans were taking place to construct the new Biology Greenhouse facility.

Doug was trained quickly by Jim. Both ran immaculate operations, and both were always open to inquisitive students eager to see some of the botanical wonders growing there, such as the distinctive *Welwitschia mirabilis*—living fossil plants from the deserts of Namibia that can live for more than 1000 years. The new greenhouse facility is continuing this grand tradition.

WALT BUBELIS is a professor emeritus in the Horticulture Department at Edmonds Community College. He is also a member of the “Bulletin” Editorial Board.