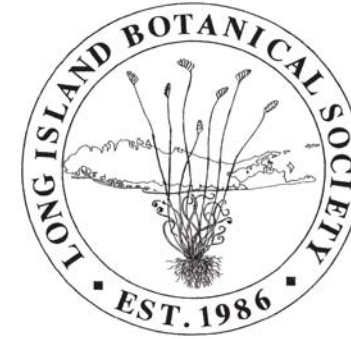


Long Island Botanical Society
Muttontown Preserve
Muttontown Lane
East Norwich, New York 11732



LONG ISLAND BOTANICAL SOCIETY

Vol. 13, No.2
2003

The Quarterly Newsletter

Apr. - May

A Survey of The Bryophytes of Shu Swamp Preserve, Mill Neck, New York

Eric C. Morgan
Jon Sperling

The Shu Swamp Preserve, also known as the Charles T. Church Nature Sanctuary, in Mill Neck NY, is a site well known to local botanical and natural history enthusiasts. Due in part to this popularity, an unpublished list of over 300 vascular plant species has been compiled for the site. The forests on the site consists mainly of *Liriodendron tulipifera* L., *Acer rubrum* L., and *Fagus grandifolia* Ehrh., with an understory layer with *Carpinus caroliniana* Walter. and *Hamamelis virginiana* L. as frequent components (personal observation). In spite of its appeal the authors could find no significant reference to the bryophyte flora of the preserve.

As a whole, the bryophytes are an extraordinary and important group of plants consisting of over 15,000 known species. One genus, Sphagnum, has more carbon stored than any other genus of plants on earth (Clymo & Hayward 1982). Bryophytes are also excellent indicators of environmental change due to pollution, many species being indicators of particular pollutants (Bates 2001). With this in mind it is clear that the bryophytes need to be included more often in our species inventories as a method of providing baseline inventories of species by which future changes in an ecosystem can be measured.

Bryophytes fall into three distinct classes known as Class Anthocerotae, Class Hepaticae, and Class Musci, commonly known as the classes Hornworts, Liverworts, and Mosses, respectively. This survey provides a preliminary listing of the species found

at the preserve. This list will surely grow as overlooked species are added as the result of future surveys. The list is the result of collections made by the authors from January 2001 through April 2002. Voucher specimens were made for all species found and deposited in the Bryophyte collection of the Herbarium of Clark Botanic Garden. In total 10 species of Liverwort and 28 species of Moss were found. These results are listed in the Appendix. Identification was done using the keys provided by Andrus (1980), Crum (1983), Grout (1916), Conard and Redfearn (1979), and Schuster (1953).

(Continued on page 28)

From: The Illustrated Companion
to Gleason and Cronquist's Manual

American Chestnut (*Castanea dentata*)

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

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Society News

Judicial Gesticulations: The New York State Department of Environmental Conservation (NYSDEC) has issued a Notice of Violation to the developer of Randall Woods in Wading River for bringing in bulldozers. The issuance was based upon Article 11, the Endangered Species Protection Act, which means the developer will have to redesign the entire project.

The New York State Supreme Courts's Appellate Division, Second Department has reversed a lower court's decision and ruled in favor of the Stony Brook Coalition to Save Stony Brook's last forest behind the Village Post Office. The decision from the four judges was unanimous. The site has already been cleared, and built upon.

"Decision & Order: On April 23, 1999, Eagle Realty Holdings, Inc. submitted an application to expand the Stony Brook Post Office and construct an Educational and Cultural Center in Forsythe Meadows, Stony Brook, Town of Brookhaven. It called for removal of approximately 60,000 cubic yards of fill from the subject property. The subject property is owned by the Ward Melville Heritage Organization (herein the WMHO), a non-profit organization, and Eagle Realty holds title to the income-producing properties acquired by the WMHO. Forsythe Meadows, the last forest in Stony Brook, is home to oak-tulip trees. The subject property is also located within the Stony Brook Historic District and in close proximity to houses built in the 19th century. The Planning Board of the Town of Brookhaven (hereinafter the Planning Board) was designated as the lead agency."

Botanical Bonanza: The 2003 joint annual meeting of The Northeastern Section of the Botanical Society of America, The Long Island Botanical Society, The Torrey Botanical Society and the The Philadelphia Botanical Club will be held June 22 to June 26, 2003 (Sunday evening - Thursday morning) at the New York Institute of Technology, Central Islip Campus. The campus is located in Suffolk County, Long Island, near all major roads and public transportation. There will be 3 1/2 days of lectures and field trips of botanical interest. The areas to be visited include a unique 300 year old Maritime Holly Forest on a barrier island, the globally rare Dwarf Pine Plains, a northeastern Mixed Hardwood Forest on a terminal moraine and an unusual Pitch Pine-Scrub Oak Barrens. Plant communities to be seen include salt marsh, fresh water bog, kettle holes, swamp, ponds, rivers, ocean, Long Island Sound and forests. Registration fee, of approximately \$350 includes all meals (Sunday dinner through Thursday breakfast), housing, evening programs and transportation (when not car-pooling). Day-trippers will be invited (at a lower fee) if there is space available. Everybody interested in botany, or in rare plant communities, or nature in general, is welcome to attend. Pre-registration is required. To request a registration form or to get additional information, contact Joanne Tow, P.O. Box 7323, Hicksville, New York 11802-7323; telephone: (516) 931-2073, or email: botany2003@hotmail.com

Programs

April 8, 2003* Tuesday, 7:30 PM

Gerry Moore: "Botanical Contributions of Witmer Stone." This talk will touch on Stone's life at the Academy of Natural Sciences, his archives, and a life portrait emphasizing the botanical contributions of this founder of the Philadelphia Botanical Club. Gerry is a Research Taxonomist at the Brooklyn Botanic Garden.

Location: Bill Paterson Nature Center,
Muttontown Preserve, East Norwich

May 13, 2003* Tuesday, 7:30 PM

Wei Fang: "Assessing the Impact of an Exotic Invasive Tree Species, *Acer platanoides*, on the Community and Ecosystem Dynamics of Natural Woodlands." Wei obtained a BS in Environmental Biology and Ecology at Peking University, and recently received her doctorate, at SUNY Stony Brook, on the subject that she will be presenting to us.

Location: Museum of Long Island Natural Sciences,
Earth and Space Science Building, Gil Hanson Room
(Room 123)
SUNY at Stony Brook, Stony Brook

June 10, 2003 Tuesday, 5:30 PM

(please note early start time for barbeque)

Annual Barbeque: The annual barbeque, featuring Chef Eric's made-to-order hot dogs and hamburgers. He'll even toast the bun if you ask nicely. The traditional location - on the green behind the Muttontown Preserve meeting house.

Location: Bill Paterson Nature Center,
Muttontown Preserve, East Norwich

* Refreshments and informal talk begin at 7:30.

Formal meeting starts at 8:00 PM.

Directions to Muttontown: 516-571-8500

Directions to Stony Brook: 516-354-6506



Map to Earth and Space Science Building at the State University of New York at Stony Brook

Trillium

In the April woods at dusk,
amphibian music over the pond,
whip-poor-will music in the trees,
trillium dance
and a child watches.

Like stars she can not see them revolve
but they are in threes
their fans of leaves and sepals
hues of green,
tapering petals: magenta, maroon, white.

The child believes
and in the cool darkness
hears the plants call down motions of stars.

---Maxwell Corydon Wheat, Jr.



Letters to the Editor

It was nice to see and read Lance Biechele's piece, "Powdery Mildews". It brought back the memory of a pleasant day when Lance, Sam Ristich and I searched for mushrooms at Trout Pond in Noyac. They stopped at every leaf fungus. At the same time East Hampton town was decimating the bird's foot violet, it also mowed down a well-staked white mildweed plant growing along the side of a road in Northwest. I had previously photographed the plant's blooms and pollinators. But when I returned to collect seeds for propagation, the plant was mowed and strewn about along with the stakes and ribbon. The plant never grew back. Unfortunately, the plant Jim Ash found did not set seed and, according to Jim, it appeared to be animal browsed. Young pods are quite tasty in nonpoisonous species.

Jean Held,
Editor, South Fork Natural History Society

I just wanted to say how much I enjoyed reading the article on the American Chestnut. It was beautifully written and held my rapt attention throughout. I am impressed your knowledge of the molecular biology of gene transfers and grateful you were able to "head them off at the pass" when they were introducing the anti-fungal gene into the chestnut genome. I feel better with the backcrossing approach. Also, the relatively poor showing of the hypovirulent American blight fungus is cause for disappointment. The lab photos of the fungus added a great deal to the article. It was the most comprehensive and up-to-date treatment of the subject I have ever read. Thanks for all that useful information.

Andrew Greller,
Department of Biology, Queens College

The story of the American Chestnut in the Long Island Botanical Society newsletter was one of the best articles I have read yet!

Herb Darling,
President, American Chestnut Foundation

Plant Sightings

Curly Grass Fern: Eric Lamont annually counts the population of Curly Grass Fern (*Schizaea pusilla*) at Napeague and , while only a handful of specimens had been there the last few years, in 2002 there were hundreds of specimens.

Whorled Milkweed: Skip and Jane Blanchard and Al Lindberg found Whorled Milkweed (*Asclepias verticillata*) on the July 4th butterfly count in Underhill's and Skip Blanchard and Rich Kelly found Bog Aster (*Aster nemoralis*) in the Quogue Refuge on Saturday, August 17, 2002.

Siberian Geranium: Barbara Conolly reported the presence of a number of Siberian Geranium (*Geranium wlassovianum*) plants in Coffin Wood, Locust Valley, after the absence of three or four years. She added that this preserve also contains Fiveleaf Akebia (*Akebia quinata*) growing like Kudzu along one path.

Seabeach Amaranth: Eric relayed that Steve Young of NYFA has decided not to count the Seabeach Amaranth (*Amaranthus pumilus*) annually and more since the count in 2002 was over 250,000.

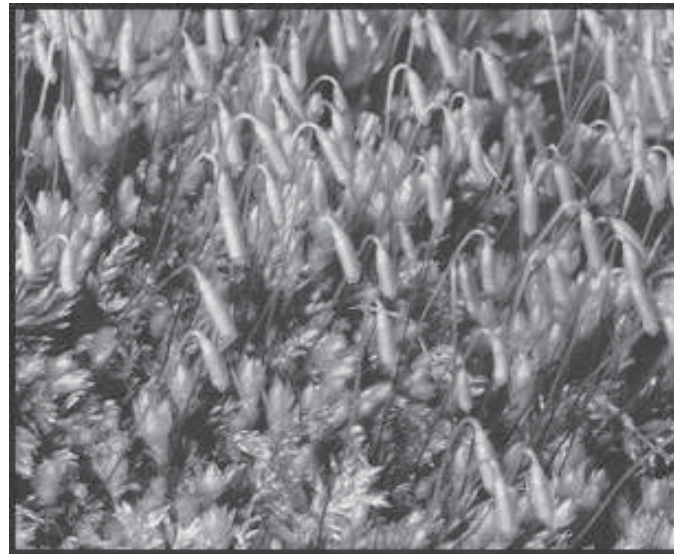
Grape Fern: Skip Blanchard found Grape Fern (*Botrychium dissectum v. obliquum*) by a path at Big Reed Pond.

Puncture Weed: Eric found a new plant for his list on Plum Island recently. It was Puncture Weed (*Tribulus terrestris*), a native of the Mediterranean area, well-established as a roadside weed in western United States.

Wild Petunia: John Potente came across Wild Petunia (*Ruellia humilis*) in his yard in Hauppauge. Barbara Conolly and Betty Lotowycz avowed that a slide photograph of it looked like the plant they found in Coffin Woods in the summer of 2002. The specimen of Coffin Woods has been pressed and will be placed in the Planting Fields herbarium.

Late Flowering Boneset: Dave Kunstler reported a stand of 230 plants of Late-Flowering-Boneset (*Eupatorium serotinum*) at Pelham Bay Park.

In Shu Swamp, the diversity of bryophytes can be attributed to the diversity of habitats. Species recorded include aquatic, terrestrial, and epiphytic plants as well as many occupying specific niches within those categories. Many species are also found in close association with other species and to date, have many not been found outside their apparent association. A good example being the association of *Mnium hornum*, *Tetraphis pellucida*, and *Odontoschisma denudatum*. While *Mnium hornum* is common throughout the preserve, *T. pellucida* and *O. denudatum* have not been collected outside of this association at Shu Swamp. Future work at this site will include more detailed descriptions of the habit of each species to enable the reader to more easily locate the listed species on site.



Alan Hale

New shoot tips and capsules of *Mnium hornum*

Appendix

Class Hepaticae

Cephalozia bicuspidata (L.) Dum.
Cephalozia lunulifolia (Dum.) Dum.
Chilophycus polyanthus (L.) Corda. var. *rivularis* Schrad.
Frullania oakesiana Aust.
Jamesoniella autumnalis (DC.) Steph.
Lophocolea heterophylla (Schrad.) Dum.
Odontoschisma denudatum (Nees ex. Mart.) Dum.
Odontoschisma prostratum (Sw.) Trev.
Pallavicinia lyellii (Hook.) Carruth.
Plagiochila asplenoides (L.) Dum.

Class Musci

Amblystegium varium (Hedw.) Lindb.
Atrichum angustatum (Brid.) B.S.G.
Atrichum crispum (James) Sull.
Aulacomnium palustre (Hedw.) Schwagr.
Bryum argenteum Hedw.
Bryum caespitosum Hedw.
Callicladium haldinianum (Grev.) Crum.
Ceratodon purpureus (Hedw.) Brid.
Dicranella heteromalla (Hedw.) Schimp.
Dicranum flagellare Hedw.
Dicranum scoparium Hedw.
Fissidens osmundoides Hedw.
Fontinalis antipyretica Hedw.
Funaria hygrometrica Hedw. var. *hygrometrica*
Leucobryum albidum (Brid. ex P.-Beauv.) Lindb.
Mnium hornum Hedw.
Physcomitrium pyriforme (Hedw.) Hampe.
Platygerium repens (Brid.) B.S.G.
Polytrichum commune Hedw.
Polytrichum juniperinum Hedw.
Rhodobryum roseum (Hedw.) Limpr.
Sphagnum henryense Warnst.
Sphagnum imbricatum Russow.
Sphagnum magellanicum Brid.
Sphagnum palustre L.
Tetraphis pellucida Hedw.
Thelia hirtella (Hedw.) Sull.
Thuidium delicatulum (Hedw.) B.S.G. var. *delicatulum*

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Eric Morgan, SUNY at Farmingdale, Plant Taxonomy

May: The Month of White

Thomas Allen Stock

White is the transcending of April into June. It is the resurrection of spring into summer. May is the month of white. Nature is full of examples, especially in its flowers.

This brilliancy is due in part to the sun. Its arc has been increasing each day since March 21. It's rays are reflecting off many flowers that have adopted white as their color. Can there be a biological reason why there are so many white flowers? No doubt there is. Perhaps it has something to do with the vision of emerging insects. Perhaps white attracts more insects under these light conditions than any other color.

One of the most unusual sights I saw in May was the "snow" of the Cottonwood () trees in Upstate New York. Along meandering, muddy banked streams, cottonwood trees looking like huge celery stalk produce the cottony seeds that waft into the air. I caught one of these fluff balls and pinched it to find the seed. It is minuscule. I could only feel a tiny bump smaller than a mustard seed.

White flowers are like "points of light" on the green landscape. At roadside, Bladder Champion () sways in the vacuum of passing cars. The seeds of dandelions look like white candy suckers.

One unusual flower I saw was the rare White Lady Slipper Orchid (). The white puffed blossom looked like some sort of Italian pastery. Such beauty is seldom found on the rocky wooded north shore of Long Island. Planting Fields Arboretum has some of these magnificent plants along their nature trails.

Roger Tory Peterson's field guide to wildflowers shows 346 white colored flowers, the largest of any color. One further explanation of why white is so dominant might be speed. White might get the process of pollination done faster. Perhaps many insects are colorblind. White would solve this problem. It would be the most obvious thin around. Another interesting explanation might have to do with physics. White reflects sunlight best. Therefore one could reason that by reflecting solar energy, the petal will be cooler and more likely to last longer, thereby insuring a bigger chance for pollination.

The snows of winter are duplicated in the fallen leaves strewn beneath the Dogwood (*Cornus florida*) trees that still hold some white bracts. There are loads of other examples of white blossoms forming up the landscape in May. Black Locusts' (*Pseudoacacia*) flowers cascade their white puffs high above the ground as if they were tiny clouds. Candelabras of Horse Chestnut () blooms stand erect on the ends of their branches. Wild Cherry () racemes look like bursts of fireworks. Their lacy, white blossoms are much more delicate than those of the locust or chestnut. The apple blossom petals, which started in April, have loosened and look like white puffs of smoke when a gust of wind passes through and blows them off the tree.

Closer to the ground, twinkles of white can be seen. Canada Mayflower (), Garlic Mustard (), and Starflower () in the woods give a glimpse of white. Phlox () touches up roadsides and edges. Residential suburban homes often have their Lily-of-the-Valley, Lilac () and Columbine (). In addition to these, I have a Mayapple () grove and have to reach under the umbrella canopy of leaves to find its exquisite flower. Huge, floppy, tubular blossoms of White Azalea () simply overpower the senses.

At the shore, Beach Plum () blossoms are so dense that they look like the foam on the breakers on the other side of the dune.

The pageantry of the cascade of white flowers across the month of May reminds me of the untanned skin we all have after we emerge from several months spent indoors during winter. White blends all colors. In May, flowering plants are all business. Each blossom is an advertisement, looking for insect customers. We humans are lucky to have the spin-off of May's visual beauty.

September rounded the corner and the Ragged-fringed Orchid was still pushing on. The leaves were badly beaten by the slugs and their vibrant green was now mixed with shades of brown at their edges from slugwork and strains of yellow along their veins told of summer dry spells and trying cooing nights. And now, upon close inspection, I was alarmed by yet another potential perpetrator.

Ants. Lots and lots of ants were investigation the orchid. They were up to something. What? As it turns out, the ants were interested in the developing seed pods. They were monitoring the progress of the orchid seeds. The tiny seeds have an appendage called an eliasome which is rich in fats and proteins that are sought by the ants. The ants carry the seeds by this protrusion down to their tunnels, eat the fleshy eliasomes and then discard the remaining inedible orchid seeds in the trash section of their tunnels.

This underground compost heap is rich in organic remains of invertebrate corpses and plant leftovers. This serves the orchid seeds well. The tunnels are located a distance from the parent orchid aiding in seed dispersal. Few seed predators will trespass the ant nests. The decaying refuse is a source of nutrition and a substrate for symbiotic fungi. The ants, as it turns out, are a critical benefit to orchid colonization.



ant photo



ant line drawing

The newcomer to the Native America Preserve made a full round of seasons. It prepared itself for winter by sending the summer's nutritional stores down to its underground tuberooids. The standing stalk turned autumn brown and half way through winter dropped to the snow covered ground.

Early spring of 2003 had me checking every sunrise for the hopeful advent of the orchid's return. I knew not how the accompanying fungi were faring. While fungi are deemed important for the initial growth of the young orchid protocorms, it was not determined until recently that even orchids that bear green leaves retain their mycorrhizal relationship. New orchids that arise from vegetative reproduction seem to "eat" their way into new territory consuming available fungi. In addition, the fungi associated with orchids do not appear to reproduce within the orchid. So the fungi need to replenish themselves freely in the soil. This underscores the importance of a healthy fungal population in the vicinity of an expanding orchid colony.

Elation abounded when I found, peeking through an early April snow, two tiny individual orchid shoots. The orchid grew with vigor and, this year, again bequeathed a pair of floral racemes that ornamented the mossy woodland corner. Not only that, but I now saw on the ground beside them two additional small orchid leaves making a stage appearance. While the new supplemental shoots remained small, they lent hope that next year might bring even more reward.

I visited Elsa's former property over the summer out of curiosity to observe the birthplace of this Ragged-fringed Orchid. The ground was scrapped bare throughout the yard exposing the soil to the hard sun. Invasive weeds were rampantly overtaking the new disturbance and a small bobcat bulldozer was sitting idle in the middle of it all. I returned home, looked down at the orphaned orchid in my yard and sighed.

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WILSON, E.O. Ants

Tale of a Ragged Fringe

John E. Potente

(Continued from Vol 13, No. 2, page 32)

Chapter 3

I woke up early the next morning and head straight out to check on the orchid. It was the seventh of April, 2002. Two small leaves curled the morning sunlight an inch above the ground. I sat for a while under the Tupelo just looking at it. Green shimmered off its back and the mystery of its very needs and desires elevated its prestige. Wonder and worries were disarmed by merely watching it posing so still and steadfast.

The Ragged-fringed orchid (*Platanthera lacera*) had made it through its first night in its new home seven miles south of Nissequogue. I called Elsa and gave her the good news. One day later and the orchid was still alive. I told her how affixed I was to sitting on the ground just watching it. It was as good as any big screen Hollywood production or any amusement ride at Great Adventures. Elsa agreed telling me how she, herself, would go out morning after morning and sit by the orchid. It seemed to possess a lure and impart a contentment that permeated the air right through your soul.

Just how long could I expect the orchid to tolerate the transplantation and its new environs? I, myself was confident it would last the year. Jim Ash, ___ of the South Fork Natural History Society told me two or three years was not necessarily insurance. It could take that long for it to exhaust its nutritional stores before succumbing. Eric Lamont added that, in the meantime, I might be fortunate enough to see more appear from seed dispersal. I would wait and see.

Three weeks into April, the two orchid leaves had grown to four and five inches high. I checked on them every day, sometimes a few times a day. Frosty nights were fewer and morning rays came earlier. The twin plants were looking more like orchids as time went on. Long, fleshy leaves arched alternately atop one another. And by late May, at nine inches tall, developing stalks emerged bearing tiny unlit flower buds. The orchid was meting out a suspenseful anticipation of its ephemeral show.

Summer heat came to Long Island and Elsa signed the closing papers on her home in Nissequogue. We said goodbye and she head off to the Sierra Nevada Mountains of California. Our conversations turned to letter writing as we related our lives back and forth.

By the end of June, the orchid grew to twenty inches. Its twin stood beside it at eighteen inches. The flower buds began breaking open to reveal a most beautiful creation: a vertical string of orchid flowers. Lined up and down the stalk they would begin bloom at the lower end of the raceme and finale at the waiting tip.

A cream-biased green beamed from each tiny flower from the inner corolla chambers to the feather-like fringes of the luring lower lip. The flowers proclaimed rejoice in every direction around the supporting stalk. Beauty burst forth across the moss of its new home and out to the open skies above Long Island.

All was going well. The orchid grew, flowered and held a healthy green color. The leaves were thick and strong looking and held a pronounced lanceolate shape, save one. The end of a lower leaf was missing. It was blunted and appeared shreaded. And then more.

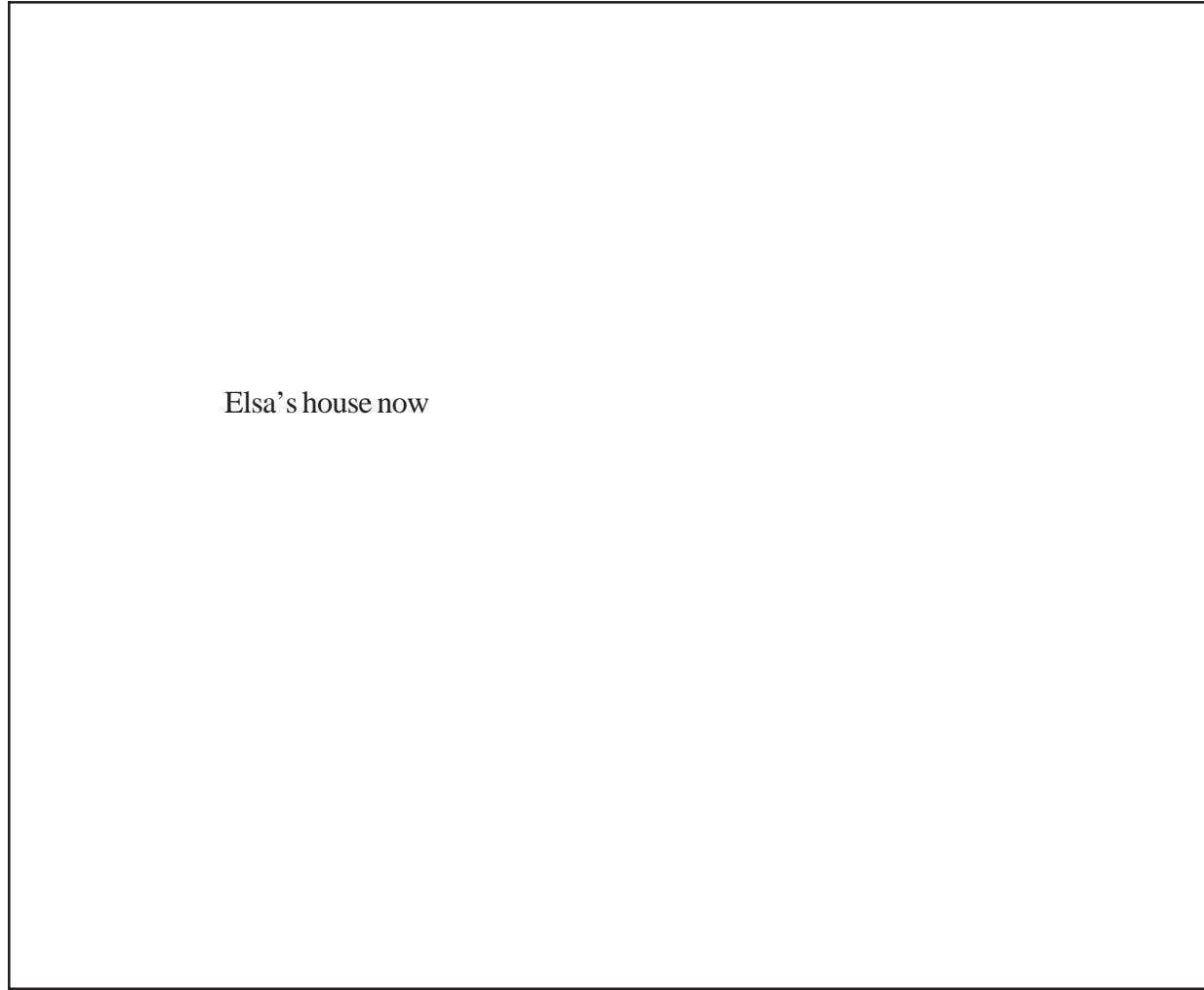
Happily munching and digesting the leaves were the primordial solitary ground crawlers. Now what? After all this. My efforts were being undermined by pill-sized slugs. Their takings were modest, however. And I soon sought consolation in the realization that the lowly slugs were a dietary staple of the beloved Long Island box turtle. The eyes of box turtles gleam with delight as they relish them like a fine Italian Tiramisu.



A slug making breakfast, lunch and dinner out of the orchid.

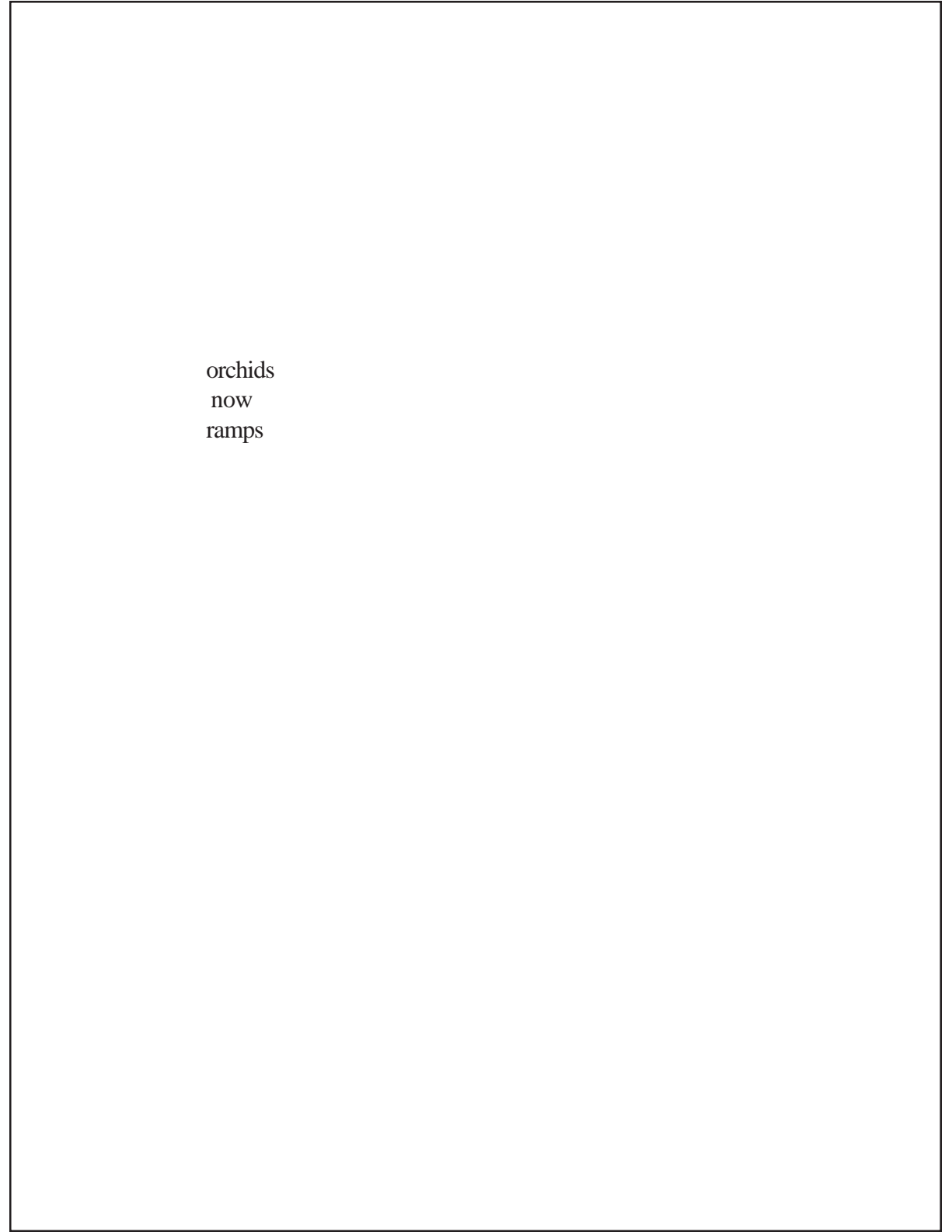


Turtle saving the day by eating the slug that was eating the orchid.



Elsa's house now

John E. Potente



orchids
now
ramps

William MacDonald/ West Virginia
University

John E. Potente