The Bulletin of the NATIVE PLANT SOCIETY OF OREGON

1981

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Chapter Calendars

PORTLAND CHAPTER

Meeting: Mon. Jan. 12, 7 p.m., Central Library, 801 SW 10th Ave., Portland. An Evening With Plants of the Siskiyous, Robert Mansfield of Grants Pass, speaker. Mr. Mansfield, retired Staff Officer of Lands from the U.S. Forest Service, spent many years working in the Siskiyou National Forest. His map of the Kalmiopsis Wilderness Area is well known to many NPSO members. This will be an exciting program, so do come and bring a friend.

Workshops: All meet 10:00 a.m. in Central Library. We have room E during Jan. All the Feb. sessions convene in the big meeting room.

Sat. Jan. 10 -- Oregon's Rare Plants with Dr. Janet Hohn, Regional Botanist with the Endangered Species Office of U.S. Fish and Wildlife Service, Portland. Dr. Hohn will show slides and discuss why the species are so important.

Sat. Jan. 17 -- Gov't Programs under the Endangered Species Act with Bonnie Heidel of the Endangered Species Office of U.S.F.& W. Service, Portland.

Sat. Jan. 24 -- Rare Plants of the Wallowas with Bonnie Heidel. Ms. Heidel will include pictures of Silene spaldingii and Mirabilis macfarlanei which have been featured in previous Bulletin articles.

Sat. Jan. 31 -- Rare Plants of the Klamath Mountains with Dr. Janet Hohn. Dr. Hohn will show us plants as Calochortus greenei and Lewisia cotyledon and others from the botanically diverse S.W. corner of the state.

Sat. Feb. 7 -- Member's slides. Bring in a few of your unidentified subjects for diagnosis by a panel of plant pundits. Or test the panelists with some of your known favorites.

Sat. Feb. 14 -- Ferns of Oregon with Roger Yerke. Our knowledgeable fern master will present a lively and instructive program on getting to know our pteridophytes.

SISKIYOU CHAPTER

Meetings: Thurs. Jan. 8, 7:30, Room 171, Science Building, SOSC, Ashland -- The Pines seedsman Frank Sesock, speaker

Thurs. Feb. 5, 7:30, Room 171, Science Bldg, SOSC, Ashland -- The Physiology of Flowering, Dr. Ronald Nitsos, Assoc.Professor of Biology, Southern Oregon State College, speaker.

WELCOME TO NEW MEMBERS

Willamette Valley Chapter
- Stan and Marie Townsend, Salem
- J. Morris Johnson, Monmouth

High Desert Chapter
- Ann Wyant, Bend
- Harvey Waldron, Jr., Bend
- Teresa Jones, Bend
- Helen H. Ballard, Sunriver
- Stuart G. Garrett, Bend
- Barbara J. Robinson, Bend
- Christy Steck, Prineville

Emerald Chapter
- Steve L. Timme, Springfield

Siskiyou Chapter
- Robert Jochums, Jr., Jacksonville
- Paula S. Vincetn, Klamath Falls
- D. David Montgomery, Ashland
- Robert E. Wille, Eagle Point

Portland Chapter
- Debbie A. Lopez, Portland
- Loris Joline Shroyer, Canby
- Judith Thompson Schneider, Milwaukie
- Marnie McPhee, Portland

PROTECTION FOR PENSTEMON PECKII

A wildflower, Penstemon Peckii, that apparently grows only in the Sisters area will be protected through the joint efforts of Hudspeth Sawmill Company and Deschutes National Forest personnel. The plant has a very limited range and distribution, between Bend and Mt. Hood.

Penstemon Peckii is propsoed for "threatened status on the Threatened and Endangered Species List. This plant was found on the Lake Creek Timber Sale after it was sold but before it was logged. The timber sale purchaser, Hudspeth Sawmill Company of Prineville, agreed to modify the contract to include protection of the plant. This agreement was a result of

a study being done by Chinook Research Labs of Corvallis, Oregon in cooperation with the Hudspeth Sawmill Compnay, the Deschutes National Forest, Oregon Rare and Endangered Plants Species Task Force, and the U.S. Fish and Wildlife Service. The multi-year study will analyze such things as plant numbers and locations, and survival requirements. Logging activity on dry ground will be analyzed to determine plant reaction to various levels of disturbance and possible management alternatives. Upon completion of this initial phase of the study, management plans for further research and protection of the plant will be developed.

The Threatened and Endangered Species List is an outgrowth of a 1976 Act of Congress to protect rare and endangered plants and animals in the U.S. It is administered by the U.S. Department of Interior in cooperation with other federal and state agencies and interested organizations. Examples of threatened and endangered animals include the bald eagle, peregrine falcon, Columbia white tail deer, brown pelican, and the gray wolf.

The Forest Service is directed, by the above-mentioned Act, to evaluate all ground disturbing activities for the presence of threatened and endangered species. This is done in the early planning phases of projects. If a species is found and the activity impacts the habitat adversely, alternatives activities are proposed. This is done to minimize impact on the habitat.

Past known sites of unusual plants are presently being search on the Deschutes to determine if the plants are still present and to extablish their numbers. Approximately 67 different trees, shrubs, and wildflowers comprise the working list on the Deschutes National Forest.

PROTECTION FOR TWO RARE PLANTS IN THE BLACK HILLS

As briefly reproted in last month's Bulletin, the Black Hills in northern Lake County was permanently closed to off-road vehicles (ORV) in October of 1980 by the Bureau of Land Management (BLM). The purpose of the 1,740-acre closure is to protect a candidate threatened plant species, Eriogonum cusickii (Cusick's buchwheat).

The Black Hills, located just south of the town of Christmas Valley, rises to about 5,200 feet, 700-900 feet above the valley floor. The Black Hills are late Pliocene in age (about 4-7 million years) and are composed chiefly of volcanic tuffs. The Hills are covered in a juniper woodland with Artemisia tridentata, Agropyron spicatum, and Festuca idahoensis.

Eriogonum cusickii, a member of the Buckwheat Family (Polygonaceae) was named for William C. Cusick (1842-1922), a pioneer botanist of Eastern Oregon. This species is a low growing cushion-like perennial plant with pale yellow flowers in loose corymbose-umbels. In an immature stage Eriogonum cusickii can be confused with E. procidumm another candidate threatened plant species. E. procidumm differs in having flowers arranged in compact heads and a range further to the south and east of the Black Hills. Eriogonum cusickii is known from only three locations in the world all within a 120 miles of Burns in the northern part of southeastern Oregon. At the Black Hills site, this species grows in very shallow rocky soils which are nearly devoid of shrubs and trees. Other perennial and annual herbs that occupy this site are: Hymenopappus filifolius, Balsamorhiza serrata, Gilia congesta, Dimeresia howellii, and Allium parvum. This site is covered with football-size and smaller rocks which gives the area a "moonscape"appearance. It is these larger rocks which have protected this site from heavy four-wheel drive use.

Another rare plant species found scattered in the Black Hills is Cymopterus bipinnatus (Hayden's cymopterus). This species is identified in "Rare, Threatened, and Endangered Vascualr Plants in Oregon-an interim report" as threatened. Cymopterus bipinnatus, a member of the Parsley Family (Apiaceae), is a tufted perennial herb with highly divided basal leaves and white flowers arising on long stems (peduncles) in compact umbels. This species is known mainly from Steens Mountain in Oregon where it inhabits high, rocky ridge tops. The species is more common in states to the east of Oregon.

Some past vehicle use has caused damage to the fragile soils and the rare plants in the Black Hills. The intent of the closure is to act early enough in protecting a species to prevent its having to be listed. Protection of these rare plants is not guaranteed by the closure. Education and public support and cooperation are also necessary for the closure to be effective in preserving the rare plants and their habitats. Two roads have been left open into the area to provide access for non-vehicular recreation. We encourage you to visit the area and welcome comments on the effectiveness and future management of the closure.

Anyone interested in receiving a copy of the Black Hills Management Plan please contact me. Your opinion is very important in making good multiple-use management decisions.

Ginny Crosby
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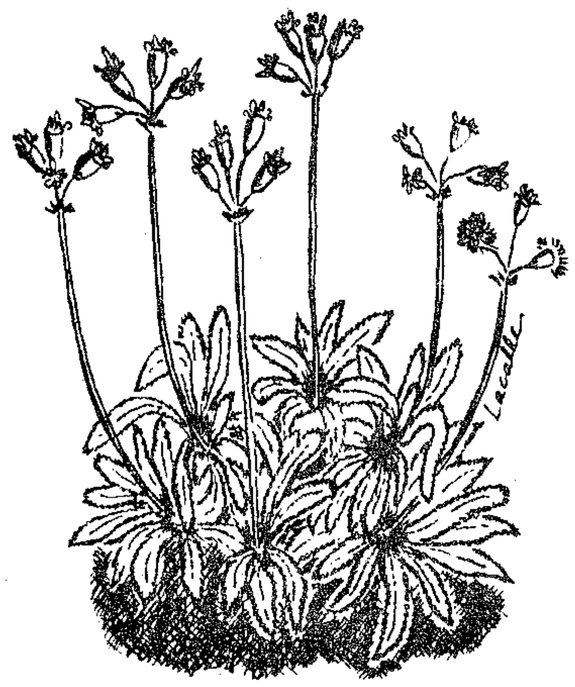


Eriogonum cusickii

THUMB-INDEXING YOUR FLORA

Here it is, January. This is the time of the year when plant watchers organize their slides and go to family reunions instead of out to the woods. If you are such a person, already anticipating the coming of spring so you can get out and work on some particular plant you have photographed but not yet identified, you are ready for a project which will hone your plant skills and be a great aid in field identification. All you need is a scalpel with a #11blade or an X-acto knife with a #11 blade, obtainable from artist and crafts supply outlets.

Take a look at a quality dictionary or bible and notice the round notches, the thumb-indeses, which allow you to go right to a particular page. Now, put the same things on the important families in your flora. I use Hitchcock's Flora of the Pacific Northwest, and have prepared illustrations of my field copy as an example. The critical thing is to index those families which are important to you; the ones treated here represent my first effort at selecting the most commonly encountered families. There are too many families to index all; the theory is that if you understand the traditional system of plant families, it should be possible to figure out approximately where an un-indexed family is. (Frank Lang reminds me that this theory will not work with Munz's A Flora of California.) One of the families I would index in a second effort, but skipped in the first, is the Gentianaceae. Note also that in Compositae four important genera are indexed in addition to the page where the family begins. Space has been left for a simialr treatment of the grasses, but I have not yet decided which genera to index.

The simplest procedure might be to use the illustration with this article as a guide, modifying them or not to suit your fancy. With the front cover of the book face-down on a table, aligh the side opposite the binding with the edge of the table. Clamp all of the pages below the one you are starting from with one hand while carving the notch with the other. Make curving half cuts through the pages, first from one side and then the other. The direction of the cuts is indicated on the "Index" notch. Note that to make the second illustration, I bent the pages of the book so they spread apart enough to have the family labels (mostly abbreviated) copy on a copy machine. (The illustrationa are natural size.) The notches are approximately 5 mm deep and cut through 5 mm of pages. It will take a bit of pratice before you can make nice, professional looking notches. It will not be easy unless you have a new, razor-sharp blade. Be careful you don't cut yourself! I recommend a fine-pointed drawing pen and India Ink for writing the labels. In order to figure out where to write the label, turn the book over and use the first page of the notch as a mask.

(see page 5 for illustrations of the thumb index)

Hopefully, these directions will be clear if you do as suggested earlier: study a dictionary or other book which has machine-made thumb-indexes. It took me all afternoon to do what is shown in the illustrations. Although four hours' work might seem like a lot of time to spend improving a book, its utility will amply repay you when keying out some strange little alpine gen on a mountain ridge. When you are sitting in a meadow full of new (to you) flowers, you don't want to spend your time flipping pages to the index in the back, fussing with page numbers, then finally getting to the Rosaceae.

Two final recommendations: 1) If your flora is getting a battering in the field and you don't want to spend money getting it re-bound, try two-inch duct tape. It is ugly but more durable than any other tape I have yet tried, and is easily applied. 2) Put a check-mark in the margin beside each species on the rare list or on the review list. The latter are especially important, since new information is desperately needed to determine the status of these. I will supply the current Natural Heritage Council list to anyone who sends me a stamped, self-addressed envelope.

Dave Wagner

NEW BOOKS

In case Santa didn't treat you right here are two books you might consider. The Audubon Society Field Guide to North American Trees: Western Region is a part of the photographic series published by A. Knopf ($9.95). The author, Elbert Little, has written many books and articles on trees. This book covers the native, naturalized, and commonly cultivated species west of the Rocky Mountains with excellent color photographs of bark, leaves, flowers, and often, fruits. The book is very good, although the arrangement of the conifer pictures is something of a mystery with unrelated species found side by side. The book would be more useful if one, two, three and five needled pines were placed together, my greatest complaint is use of common names only for picture captions. Minor faults aside, like the use of Libocedrus instead of Calocedrus for the Incense-cedar genus and leaving the Noble Fir-Shasta Red fir mystery in SW Oregon a continuing enigma, the book is a must for western tree lovers.

The second book is for advanced students. Volume II of the Biota of North America series published by the University of North Carolina Press is A synonymized checklist of the Vascular Flora of the United States, Canada and Greenland. It is a list of 56,941 names of vascular plants and synonyms as complied by the authors John and Rosemarie Kartesz and a host of reviewers and cooperating specialists. This is the place to look to see what happened to that name you used to know. This is where I discovered that the Diamond Lake Frittilaria, F. adamantiana is now considered to be F. atropurpurea. The book is useful if you are interested in such things and can afford the more than $20.00 price.

F. A. Lang

PLANT FAMILY PROFILES
By Herm Fitz

The Lentibulariaceae - BUTTERWORT or BLADDERWORT FAMILY

The Lentibulariaceae is a small, cosmopolitan family of carnivorous plants, best developed in the Tropics, though extending well into temperate regions. Of the family's four genera, only two are represented in Oregon (a third is entirely Australian; the 4th is restricted to central and south America and Africa): A single circumboreal species of Butterwort (*Pinguicula vulgaris*) may be found on wet rocks, in bogs or wet soil in the mountains south to southern Curry County; three circumboreal species of Bladderwort (*Utricularia*) occur in ponds, bogs, slow streams, lakes and marshes throughout Oregon into California.

All members of this family are herbaceous with irregular flowers. The united corolla is 2-lipped, as in the Mint Family (*NPSO Bulletin*, March, 1980) and Scrophulariaceae (*NPSO Bulletin*, February, 1980), with which the Lentibulariaceae is closely allied. The upper lip is 2-lobed, and the lower lip is 3-lobed and spurred. All have 2 stamens, attached near the base of the corolla throat, each with only a single pollen sac. The pistil consists of a superior ovary of 1 locule with one-to-many ovules attached by free-central placentation. The sessile stigma bears two lobes. A capsule which usually splits into valves is the common fruit. Plants are all of moist habitats.

Notable differences exist, however, between our two genera. Butterwort is a fibrous-rooted terrestrial plant with a basal rosette of simple, entire leaves generously covered with digestive glandular hairs. Flowers are solitary on bractless scapes and bear 5 calyx lobes, also in a bilabiate fashion. The corolla throat is open. Bladderwort, on the other hand, is a rootless, submerged and floating aquatic plant with alternate, apparently dissected (leaf morphology in *Utricularia* is not fully understood) leaves bearing tiny bladders which trap and digest small aquatic insects and crustaceans such as the water flea. Several flowers are arranged on an emergent raceme, each subtended by a small bract, and each bearing only 2 calyx lobes. The corolla throat is closed by a swollen palate (also found in Scrophulariaceae).

The glandular hairs of Butterwort digest insects on contact much as in the Sundew. The tiny traps of the Bladderwort are functionally more involved, and have been described by Mabberly (1978):

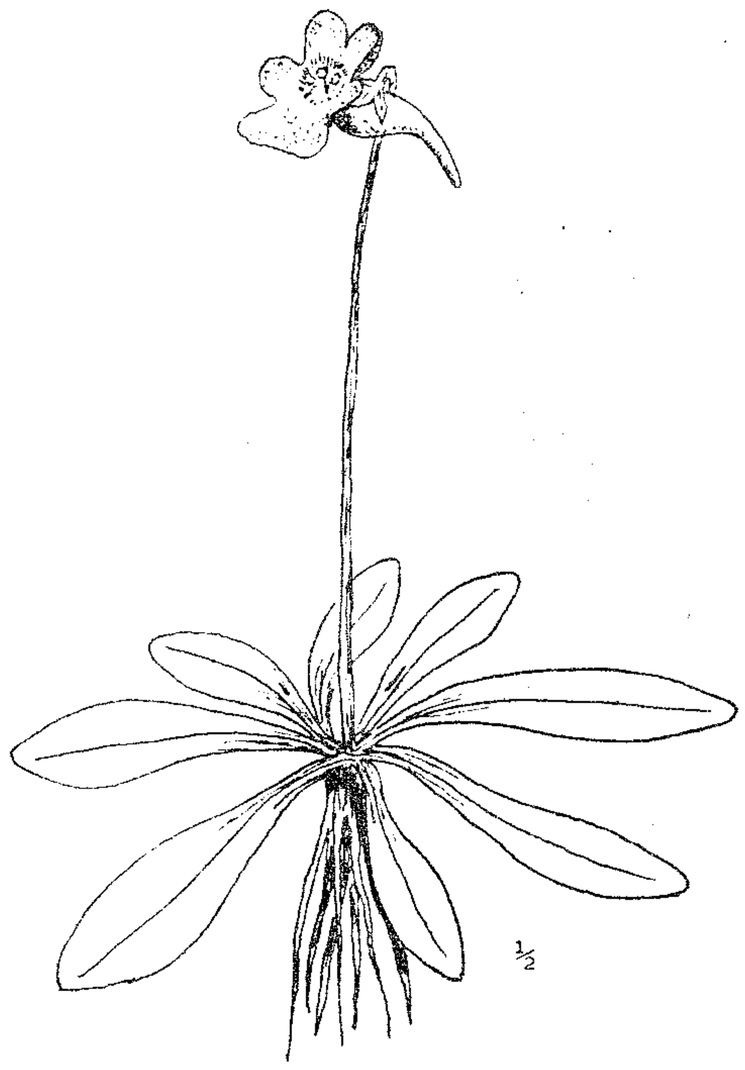
> "The traps consist of a hollow bag borne at the end of a stalk, with a small entrance near to or opposite the stalk. Around the entrance are usually some projecting bristles, so arranged that an insect or crustacean passing the bladder will tend to be guided towards its mouth. The entrance itself is closed by a hermetically sealed semicircular valve which bears four hairs. If these are touched the valve is triggered and the rush of water drags the animal inside."

The generalized Family floral formula is:

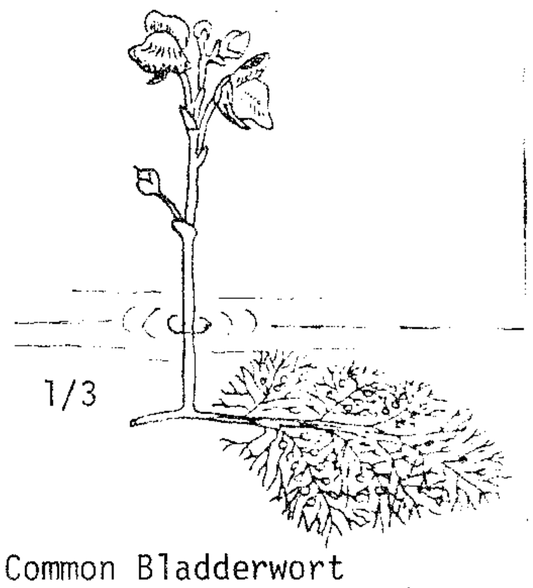
$$Ca^{2 \text{ or } 5} \quad Co_{(5)}^{z} \quad S^{2} \quad P_{(2)}$$

Next time you visit a bog, or a pond or marsh, or other moist or aquatic habitat, look for these interesting carnivorous plants, the members of the Lentibulariaceae - the Butterwort or Bladderwort Family.

Reference: Mabberly, D.J. Lentibulariaceae. In: Heywood, V. H. (Ed.). 1978. Flowering Plants of the World. Mayflower Books, New York.



Butterwort (*Pinguicula vulgaris*). Note the single scapose flower, open-throated, bilabiate and spurred, with 2 stamens. Succulent, glandular-haired (insectivorous) leaves are arranged in a basal rosette. Note also the true roots.



Common Bladderwort (*Utricularia vulgaris*). Plant is rootless, floating aquatic with submerged leaves, apparently dissected, with tiny carnivorous bladders. Flowering raceme is emergent. Note that flower throat is closed by a swollen palate.

THUMB INDEX YOUR FLORA (see page 3)

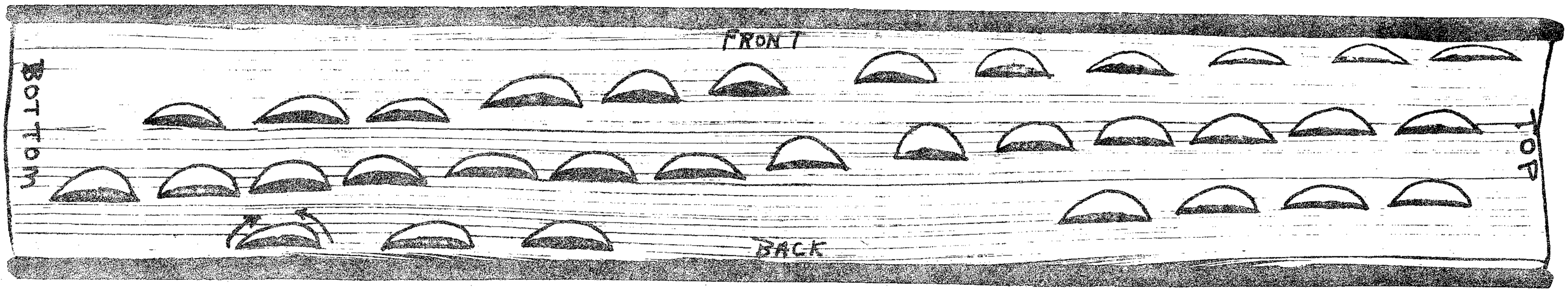


Figure 1

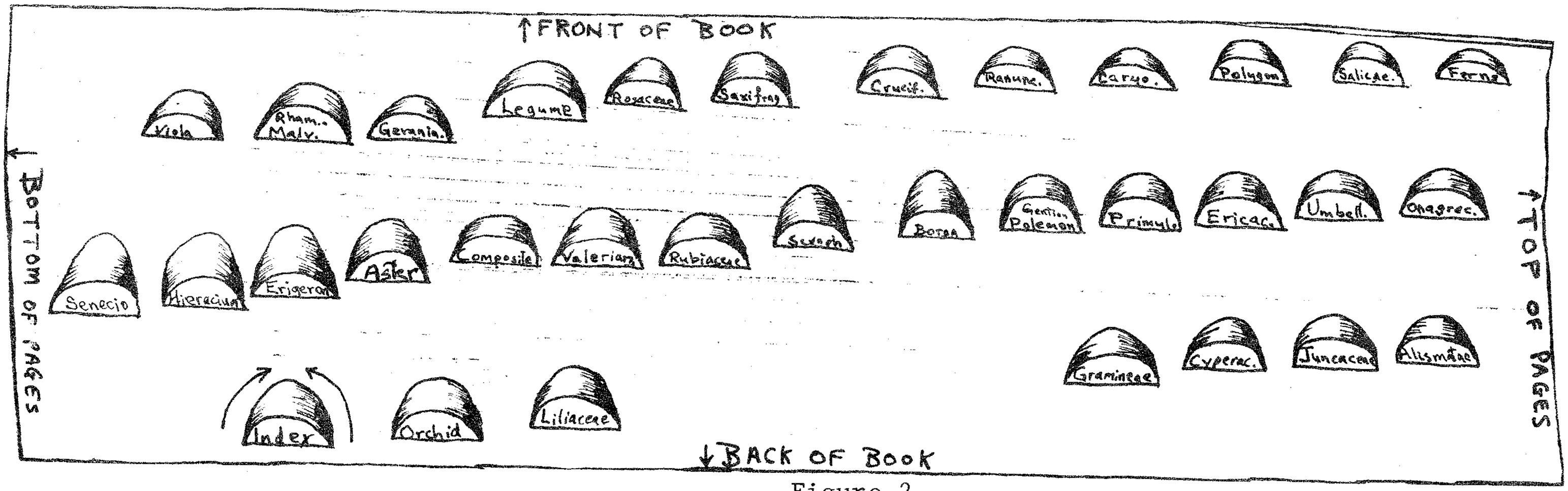


Figure 2

ABOUT THE ILLUSTRATOR

Julian Lacalle is a Science-Math Master's candidate in general studies at Southern Oregon State College. His major is biology with special interest in biological illustration. He holds a BA in zoology from the University of California at Berkeley.

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