Oxytropis nana Nutt., a Wyoming endemic collected by Thomas Nuttall on his journey across Wyoming in 1834

WYOMING NATIVE PLANT SOCIETY

3165 University Station
Laramie, WY 82071
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Treasurer's Report - Balance as of Oct. 15, 1992: $523.74; deposits: dues $127.50, scholarship fund $111.50; disbursements: newsletter printing $28.04, stamps $29.00, checks $10.71, stationery $56.78; new balance as of Feb. 16, 1993: $638.21. **1992-93 Scholarship Fund:** $364.50. THANKS to the WY Nature Conservancy for their $100 contribution to the Scholarship Fund.

Nominations for Officers - Nominations for President, Vice-President, Secretary-Treasurer and Board Member are needed by May.

SCHOLARSHIP NOTICE

Applications are still being accepted for Wyoming Native Plant Society scholarships; **applications are due by March 1, 1993.** One to three scholarships in the amount of $100-$300 will be awarded. Applications should be no more than two pages in length, and should include the following: name and address of student, school, year toward what degree, major professor or advisor, title of project, objectives of project, brief outline of methods, what the money would be used for (e.g. gas, supplies), and any other information the student thinks will help the application. Undergraduates working on special projects and graduate students are both eligible. Projects can be in taxonomy, ecology, physiology, mycology, range management or any other area dealing with the native flora. Direct all correspondence to Hollis Marriott, Secretary/Treasurer, at the WYNPS address (above).

FRUIT OR VEGETABLE?

Is the tomato a fruit or a vegetable? The answer depends on who you ask.

According to the U. S. Supreme Court, tomatoes are vegetables. In 1893, this august body decided the matter after hearing the case of an importer who refused to pay levies on tomatoes because he considered them fruits, and therefore duty-free. The court, citing the popular use of tomatoes as a dinner food, ruled that the tomato was legally a vegetable.

Ask any botanist, however, and he or she will will tell you enequivocally that the tomato is a fruit! By botanical definition, a fruit is a mature, seed-bearing ovary of a plant. The ripe red tomato is thus a fruit because it is derived from the mature pistil of the tomato flower. Using this same logic, a number of other familiar vegetables should also be called fruits. The bell pepper, eggplant, cucumber, pumpkin, squash, and string bean, although popularly considered vegetables, are all fruits in the botanical sense.

The root of all this confusion is our popular notion of what constitutes a vegetable or fruit. In general usage, the word vegetable applies to any edible plant structure. Vegetables may be stems (asparagus), tubers (Irish potato), roots (carrot), immature flower heads (broccoli), seeds (lima beans), leaf blades (spinach), petioles (celery), or buds (head lettuce). Hard-rinded, dry or non-fleshy fruits, such as squash, cucumber, beans, and corn, are also considered vegetables due to their means of preparation and use in "vegetable" dishes.

The term fruit, in common language, refers to sweet flavored, fleshy, edible organs. In everyday use the word is reserved for grapes, citrus, apples, pears, peaches, cherries, various berries, and other "fruits" traditionally used for snack foods, preserves, or desserts, rather than as main course dishes.

Botanists have expanded on the popular category of fruit by including the edible fruit-vegetables and a variety of dry, hard or otherwise inedible plant structures all derived from one or more ovaries of a flower. By this definition, acorns, cereal grains, maple keys, milkweed pods, sunflower "seeds", and okra are all considered fruits. The recognition of these non-traditional fruits is good science, but does little to reduce public confusion over the matter of fruit versus vegetable.

Popular custom appears to be the final arbiter in determining whether a plant structure is called a fruit or a vegetable. By all counts, the tomato ought to be called a fruit. It fulfills the popular criteria of a fruit in being fleshy and sweet, and of course, it satisfies the botanical requirements. Yet strong tradition dictates that tomatoes be called vegetables.

Webster's New World Dictionary sums up the tomato dilemma best. It defines a tomato as a red or yellowish fruit...used as a vegetable! **WF**

****BOTANICAL BONERS**** Botanical Boners, graciously donated by John Baxter, come from a collection of gems culled from Botany exams and quizzes during 30 years of teaching at three Midwestern universities and the University of Arizona. Each boner is reproduced exactly as originally written (and intended?) by the student. The Botany Boner topic for this issue is:

PLANT REPRODUCTION In the lab we studied flowers of geranimim, pointsettas and marygoes. The state flower of Colorado is the wild concubine. The pistol of the lily has three cartels. Chromozomes carry units called protozoa that determine herridedy. A zygote is produced by the fussing of gametes. The surface of the been seed shows a scar called the helium and a very small mychrosopic tube. A seed may fail to germinate because of the psychology of the embryo.

Family 14: Onagraceae, Evening Primrose Family

This is the fourteenth largest family of flowering plants in Wyoming with 45 species. Most are in two genera, **Epilobium** (willow herb) and **Oenothera** (evening primrose). The family is easily recognized by the regular flowers with 2 or 4 separate petals above the inferior ovary, sepals also 2 or 4, stamens 2, 4, or 8, and the fruit a capsule or nutlet. Many of the species bloom for an extended period because of the indeterminate inflorescence. Sometimes a flower lasts only for a day but is usually replaced by a new flower the next day. As the common name implies, for some species the flowers open up in the evening and then wither before noon of the next day. There are a number of common species of evening primrose, most with showy white, yellow, or pink flowers. Fireweed is perhaps the most conspicuous and well-known member of the genus **Epilobium**. Find some examples of the family and compare the flower parts to those labeled in the figure. RD

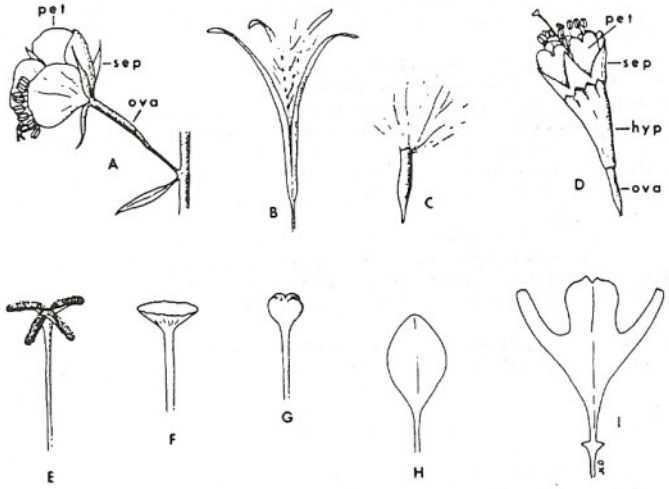

Figure. Onagraceae. A. Flower of **Epilobium angustifolium** (x 0.7): ova = ovary, sep = sepal, pet = petal. B. Fruit of **Epilobium** (x 1). C. Seed of **Epilobium** (x 8). D. Flower of **Zauschneria** (x 0.7): hyp = hypanthium, ova =ovary, pet = petal, sep = sepal. E-G. Stigmas: E. **Oenothera** (x 1.4); F. **Calylophus** (x 7); G. **Camissonia** (x 6). H. Petal of **Gaura coccinea** (x 3). I. **Clarkia** petal (x 1.4).

Family 15: Salicaceae, Willow Family

This is the fifteenth largest family of flowering plants in Wyoming with 42 species. There are two genera: **Salix** (willows) with 36 species, and **Populus** (cottonwoods and aspen) with 6 species. The family is easily recognized by the woody habit, simple and alternate leaves, unisexual flowers in unisexual catkins, an absence of sepals and petals, and seeds with long hairs for wind dispersal. The two genera are easily distinguished by observing the number of bud scales, one for **Salix** and more than one for **Populus**. Most of the species grow in moist or wet places from the lowest elevations to the highest mountain peaks. The high mountain willows above timberline may be only an inch high while some plains cottonwoods may reach 100 feet in height. Using the figure as a guide, examine some staminate (male) and pistillate (female) catkins and the individual flowers which make them up. Look at both cottonwoods (or aspen) and willows. The catkins usually appear in the spring. Also examine the bud scales. RD

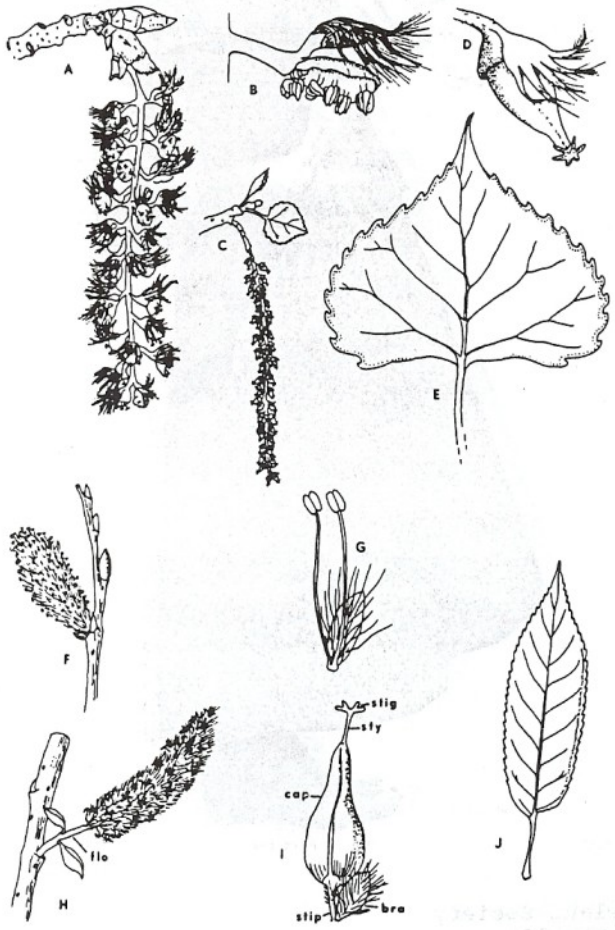

Figure. Salicaceae. A. Staminate catkin of **Populus tremuloides** (x 1.6). B. Staminate flower of **Populus** (x 4). C. Pistillate catkin of **Populus** (x 0.7). D. Pistillate flower of **Populus** (x 4). E. Leaf of **Populus deltoides** var. **occidentalis** (x 0.7). F-I. **Salix**: F. Staminate catkin (x 0.7); G. Staminate flower (x 4); H. Pistillate catkin (x 0.7), flo = floriferous branchlet; I. Pistillate flower (x 4), cap = capsule, stip = stipe, sty = style, stig = stigma, bra = bract. J. Leaf of **Salix lutea** (x 0.7).

Contributors to this issue: John Baxter (JB), Robert Dorn (RD), Walt Fertig (WF), Hollis Marriott (editor).

THE STEREOTYPE -- This "masterpiece" was perpetrated by Maxfield Parrish in 1904. The stereotype persists to this day, as you know if you've seen how botanists are protrayed on TV and in the movies.--**JB**

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