The New Mexico Botanist

Number 22 **May 10, 2002**

A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agriculture and Home Economics, New Mexico State University.

In This Issue —

CLEOME MULTICAULIS ON THE RÍO GRANDE IN SOUTHERN NEW MEXICO?

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[This is a copy of an 9 April 2002 e-mail communication with Dr. Charlie McDonald, regional botanist with the US Forest Service, and chair of the New Mexico Rare Plant Technical Council. At a recent meeting Charlie had asked me to document quotes regarding the presence of *Cleome multicaulis* (Capparaceae) from the Río Grande in New Mexico. My ramblings in attempting to verify the negative may be of general interest to New Mexico botanists, and led me to reverse my original view.]

Here are some thoughts and quotes on the Wright "below Donana" *Cleome multicaulis* collection from 1851. At first I thought that C. Wright did collect *C. multicaulis* along the Río Grande – potentially there was suitable habitat. I think now, however, that this is one of those situations where a printed label from a specimen in one herbarium (US?) got in the literature, without careful assessment, and has been "validated" through recurrent use. There may have also been a record-keeping error prior to Iltis' review of the Capparaceae for New Mexico, for there is some question that there are specimens at US (as cited). I would feel safe to modify the write-up and map on the web site (http://nmrareplants.unm.edu/) to indicate a firm record from approximately Faywood, and to put in the comments section of the write-up that references to the Wright record along the Río Grande "below Donana" most likely result from a mix-up in interpretation of early, incomplete, printed labels. The evolution of my position is outlined below.

From Fort Davis, Wright hit the Río Grande at about Indian Hotsprings, ca. 80 miles below El Paso. Thus, the locality cannot be Donna, near McAllen, on the lower Rio Grande. Wright didn't get close to this village. A few people, for other taxa, have made that error. Wright spelled fonetically, and didn't spell presisely, and Doñana is the proper pronunciation for Doña Ana. So we can remove that remote possibility.

Here are some of quotes regarding the probability of *Cleome multicaulis* coming from New Mexico, along the Río Grande. By the time the passages quoted were written a tremendous amount of history had passed.

Iltis, H. H. 1958. Studies in the Capparidaceae—V. Capparidaceae of New Mexico. Southwestern Naturalist 133-144. Page 142, "Two collections are said to have come from New Mexico. Both were collected on the Mexican Boundary Survey of 1851, with Pary [sic], Bigelow, Wright, and Schott listed as collectors: 'Near the Mibres [sic], N. Mex., *Bigelow*' (evidently the Mimbres Mts., Grant Co.) (NY, US); 'Valley of the Rio Grande below Donana' (US). Whether the second collection actually came from the stated locality is doubtful, for it has not been found since in that well-collected area, and Standley states (Contrib. U. S. Nat. Herb. 13: 146, 1910) that few of the specimens so labeled actually came from there."

Spellenberg's comment: One must keep in mind the human impact that happened between 1851 and 1910, when Standley and Wooton were working over the flora. The Valley between El Paso and Doña Ana was intensively under agriculture. No collectors had been through the area, to speak of, from 1851 to 1890, when Wooton arrived. Wooton was focusing on new taxa, and new records, and collected mostly in the Organs and in the Sacramento and White mountains on a regular basis, with a

(Continued on page 2, Cleome)

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.
— Linnaeus

(Cleome, Continued from page 1)

few far-flung trips throughout the state. There are relatively few Wooton collections from the Rio Grande Valley. Standley added a few collections, but even if present, it would be easy to miss *Cleome multicaulis* if habitat were reduced, or by that time all habitat may have been obliterated.

Also, please note from the next quotes that Standley says nothing about "this well-collected area." It is something that Iltis inserted.

Standley, P. C. 1910. The type localities of plants first described from New Mexico. Contr. U.S. Nat. Herb. 13:143-246 (plus map). Page 146. "Routes of Charles Wright. 1851-1852….The plants obtained on the 1851 trip were mostly collected in New Mexico (about Santa Rita), though all the time from September 2 to October 4 was spent on a trip through southeastern Arizona and northeastern Sonora….A new difficulty arises here, since the specimens of the 1851 and 1852 collections were sent out under the same printed label and it is not possible to tell which specimens were collected each year…The following notes regarding Wright's route in New Mexico were taken from Wright's field notebooks by Professor Wooton: 1851. July 4—5. Rio Grande bottom above Frontera [approximately present day Sunland Park area of El Paso on the east side of the river] and at the cottonwoods. 9, 18, and 19. Valley of the Rio Grande below Dona Ana and at Dona Ana. 29. From Dona Ana to San Diego, the crossing of the river…" [from there the party headed to Santa Rita].

Shaw, E. A. 1987. Charles Wright on the Boundary 1849-1852, or Plantae Wrightianae revisited. Meckler Publishing Corp., Westport. Page 23. "Field numbers 28 – 149: 26 July – 2 August. Graham, with Wright, left Frontera on 26 July to meet Bartlett and the main body of the Commission at the Coppermines, Santa Rita del Cobre. The party headed up the valley of the Rio Grande. The locality mentioned on the first day as "the Cottonwoods" refers to a camping place among the cottonwoods in the river valley; it is station 36 in Graham's listing of places where barometric observations were made and he said that it was eighteen miles above Frontera. Johnston (mss.) placed it near Berino, New Mexico.

"On 28 July they arrived at Dona Ana, then a place of some importance and a U. S. military post; Johnston (mss.) suggests that they camped that evening at the San Diego crossing of the river, where Wright the next morning collected a *Galactia*. This is about ten miles upriver from Fort Selden, below San Diego Mountain. Although shown on Disturnell's map as a town, it was merely a fording place."

Spellenberg's comment: Though Wright collected a number of plants along this stretch, from habitat seemingly suitable, Shaw makes no listing of a *Cleome* or a *Peritoma* collected by Wright from here (or nearby in the list). As transcribed in the list, Wright was good about noting that he was below El Paso, at Frontera, below Doña Ana, at San Diego, and the like. Unfortunately, no literature gives Gray's distribution number for Wright's collection of *Cleome multicaulis*, or Wright's collection number.

Jennings, W. F. 1998. Herbarium survey of specimens of *Cleome multicaulis*. Draft mss., University of Colorado Herbarium. Page 8. "New Mexico. Grant or Luna County. Mexican Boundary Survey, collected under the direction of Major W. H. Emory, commissioner, chiefly in the Valley of the Rio Grande below Dona Ana, by Parry, Bigelow, Wright, Schott [printed]; near the Mimbres, N. Mex., Bigelow [handwritten] (NY) [in fruit; mounted on the same sheet as the Saguache, Colorado, collection by Wolf; annotated by Iltis, 1951, and by Vanderpool, 1988. Iltis (1958) says there are duplicates of this specimen at US, but no such specimens were received in loan. According to Iltis, one of the specimens at US has only "Valley of the Rio Grande below Dona Ana" on the label, while the other has "Near the Mimbres." The NY specimen has both locations on the label, which is partially printed, partially handwritten, as transcribed above. In my opinion, there is only one collection site, and that is probably along the Mimbres River (not the Mimbres Mountains as postulated by Iltis). The printed portion of the label should be used only as an identification of the expedition, and not used literally as the site of collection.]

"[The Mimbres River rises in the Gila National Forest, Grant County, flows southward, and disappears into the sands in the general area of Deming, Luna County. The site of collection is probably at the crossing of the El Paso and Fort Yuma Wagon Road, about on the Grant/Luna County Line, in the general area of Faywood Hot Springs and City of Rocks State Park. Reference to the documents of the expedition makes it clear they followed the wagon road frequently….It is possible that the site of collection is farther downstream, toward what is now Deming, but there is nothing in the record to indicate collecting in that direction. No playa is shown near Deming on the New Mexico state geologic map (T24S, R7W), however, once out of the mountainous area and onto the desert, the gradient was surely so sluggish that the river was more like an extended marsh. Deming is an agricultural area and water diversions or conversion of wetlands (or moistlands) for agricultural purposes may have eliminated the population. On the other hand, I doubt that anyone has bothered to botanize the roadside ditches or wet areas in the vicinity.]"

Ken Heil and Joey Herring write for the review on the NMRPTC website that *Cleome multicaulis* in New Mexico comes from "the mouth of the Mimbres River." In requesting a source of this quote from Ken (e-mail, 8 Apr 2002) he responds, "A few years ago I was working on a T-E book for the BLM-Las Cruces District. While at the BLM office in Las Cruces I xeroxed a lot of information dealing with the rare plants of that area, and of course some of it dealt with *C. multicaulis*. I must have found it in that information; however, all of that material went to Ecosphere Environmental Services, because they took over the project. It would probably be easier for you to check with the BLM in Las Cruces!"

Spellenberg's comment: I suspect that Heil's quote comes from some interpretation of Jennings' work or other literature by a third or fourth party. After reading Jennings' contribution, I checked with Tom Zanoni at the New York Botanical Garden regarding the specimen discussed by Jennings. Here is what he writes:

(*Continued on page 3, Cleome*)

(Cleome, Continued from page 2)

"1. In the general collection, I found the following NM specimen. *Cleome multicaulis* Sesse & Mocino ex DC. [Annotations:] *Cleome multicaulis* det. Staria S. Vanderpool, 1988; *Cleome multicaulis* (=*C. sonorae* A. Gray) det. Hugh H. Iltis, 1951. Two specimens are on this sheet from the Torrey Herbarium [indicated by a rubber stamp in blue ink]. The specimen on the left has this printed header: Mexican Boundary Survey, collected under the direction of Major W. H. Emory, Commissioner, chiefly in the Valley on the Rio Grande, below Doñana---by C. C. Parry, M. D., J. M. Bigelow, M. D., Mr. Charles Wright, and Mr. A. Schott [added in black ink, writing appropriate for the Mexican Boundary Survey labels]: *Cleome sonorae* Gray, Near the Mimbres, N. Mex. Bigelow. ------ The label on the right is on a printed label of the Explorations and Surveys of the 100th Meridian, J. Wolf s.n. from Saguache, Colorado, 1873.

"2. From the Type Collection at NY: A specimen originally in the Torrey Herbarium [indicated by a rubber stamp in blue ink] *Cleome sonorae* A. Gray det. William F. Jennings, 1998; *Cleome multicaulis* DC (=*Cleome sonorae* A. Gray) det. Hugh H. Iltis, 1951. 'Isotype of *Cleome sonorae* A. Gray. Gray in Pl. Wrightianae 2:16. Presumably this is Wright No. 1851, Chiricahui Mts., Sonora, New Mexico. Species syn. with *Cleome multicaulis* DC.'---annotation by H. H. Iltis, 1951. The specimen label itself: No. [blank here] C. Wright, coll. N. Mex. 1851. *Cleome sonorae* n.sp."

So, Wright did collect the species, but with certainty only in or near the Chiricahua Mountains. It is well known that Gray, upon identifying and distributing Wright's collections, assembled specimens from one or more collections of a single taxon and distributed them under a single distribution number which was not the collector's field number. For Wright's 1849 collections he cross-referenced fairly consistently (Shaw 1987, p. 4), either placing Wright's penciled field ticket in a packet with the specimen, or including Wright's field number on the label. This practice rarely continued into 1850 and 1851. General labels were printed, and specifics with regards to locality, date, and sometimes habitat were added by hand, but not consistently. There were also some problems of giving due credit in a timely fashion to collectors other than Wright on the Boundary Commission expedition, Bigelow included (Shaw 1987, p. 14). Also, in the 1850's Torrey and Gray, at Harvard, were inundated with specimens coming in from various government-sponsored surveys of the newly opening West and were having a difficult time keeping up with the influx. Errors might easily occur, particularly errors of omission. In a nutshell, the citation of *Cleome multicaulis* from the "Río Grande below Donana" is most likely incorrect, and the species is known in New Mexico only from the Mimbres River collection of Bigelow in 1851.

A Field Key to the Gymnosperms of New Mexico

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Gymnosperms (from the Greek *gymnós*, meaning naked or exposed, referring to the non-vesseled seeds) comprise one of five great divisions (phyla for the zoologists) of vascular plants in New Mexico. All (of ours) are woody trees and shrubs producing seeds, differing from the flowering plants (angiosperms) in the absence of flowers, the pollen and seeds being produced within cones, rather than in an ovary.

There are currently three families, seven genera, 27 species, and 29 total specific taxa (species+subspecies+varieties) of gymnosperms known in the state (Allred 2002: A Working Index to New Mexico Vascular Plant Names, <http://web.nmsu.edu/~kallred/herbweb/gymno.htm>, q.v. for synonymy.).

The following key is meant to aid in the identification of these conspicuous and often dominant plants. A pocket-sized card is included for field use. I acknowledge fully the precedent works of Wooton & Standley (1915), Martin & Hutchins (1980), and Carter (1997).

1 Shrubs with green photosynthetic stems; leaves reduced to small brownish papery scales and separated by very long (2-10 cm) internodes (*Ephedra*) … **EPHEDRACEAE**

1 Large shrubs or trees without green photosynthetic stems; leaves needle-like, or if scale-like then green and membranous and overlapping on very short (less than 0.5 cm) internodes

2 Cones woody when mature; foliage leaves needle-like, borne singly or in fascicles, falling from the twigs in age … **PINACEAE**

2 Cones berry-like when mature; foliage leaves scale-like or needle-like (one species), borne singly, remaining on the twigs and usually the entire twig falling from the plant in age … **CUPRESSACEAE**

CUPRESSACEAE CYPRESS FAMILY

1 Seed cones becoming woody at maturity, the scales opening and releasing the seeds; plants monoecious … ***Cupressus***

1 Seed cones usually fleshy and somewhat berry-like, occasionally dry and mealy but not at all woody, the scales not opening and the seeds not released; plants monoecious or dioecious … ***Juniperus***

Cupressus … ARIZONA CYPRESS, ***C. arizonica*** Greene

Juniperus

1 Mature leaves needle-like, 6-12 mm long, spreading; cones axillary … DWARF JUNIPER, ***J. communis*** Linnaeus var. ***depressa*** Pursh

1 Mature leaves scale-like, triangular, less than 5 mm long, appressed; cones terminal

2 Margins of leaves entire (at least 10x); bark exfoliating in rectangular plates; branchlets often drooping or somewhat weeping … ROCKY MOUNTAIN JUNIPER, ***J. scopulorum*** Sargent

2 Margins of leaves denticulate (at least 10x); bark exfoliating in rectangular plates or in thin strips; branchlets usually not drooping

3 Seed cones with 3-6 seeds; bark exfoliating in rectangular plates … ALLIGATOR JUNIPER, ***J. deppeana*** Steudel

3 Seed cones with 1-3 seeds; bark exfoliating in thin strips

4 Glands on leaves inconspicuous because they are embedded in the leaf; seed cones somewhat dry and mealy at maturity; plants monoecious … UTAH JUNIPER, ***J. osteosperma*** (Torrey) Little

4 Glands on leaves conspicuous; seed cones usually somewhat fleshy at maturity; plants dioecious

(Continued on page 4, Gymnosperms)

(Gymnosperms, Continued from page 3)

5 Seed cones reddish blue to brownish, with a glaucous coating; fewer than 1/5 of whip-leaf glands with evident white exudate … ONE-SEED JUNIPER, ***J. monosperma*** (Engelmann) Sargent

5 Seed cones rose to pinkish or copper to copper-red, glaucous or not; 1/4 or more of whip-leaf glands with evident white exudate

6 Seed cones rose to pinkish, with a glaucous coating; inner surface of leaves glaucous … ROSEBERRY JUNIPER, ***J. coahuilensis*** (Martinez) Gaussen ex R.P. Adams var. ***arizonica*** R.P. Adams

6 Seed cones copper to copper-red, without a glaucous coating; inner surface of leaves not glaucous … PINCHOT'S JUNIPER, REDBERRY JUNIPER, ***J. pinchotii*** Sudworth

EPHEDRACEAE JOINT-FIR FAMILY

Ephedra

1 Leaves whorled, 3 at a node; cones sessile

2 Leaves 5-15 mm long; twigs ending in sharp points … LONGLEAF EPHEDRA, ***E. trifurca*** Torrey ex S. Watson

2 Leaves 2-5 mm long; twigs blunt-tipped … TORREY'S EPHEDRA, ***E. torreyana*** Torrey ex S. Watson var. ***torreyana***

1 Leaves opposite, 2 at a node; cones sessile or pedunculate

3 Twigs viscid; seeds 2 per cone … CUTLER'S EPHEDRA, ***E. cutleri*** Peebles

3 Twigs not viscid; seeds 1 or 2 per cone

4 Seeds 1 per cone; leaf bases becoming gray with age and shredding, not forming a collar … ROUGH EPHEDRA, ***E. aspera*** Engelmann ex S. Watson

4 Seeds 2 per cone; leaf bases forming a black collar

5 Seed cones obovoid, sessile or on peduncles to 8 mm long; bark gray; northwest … GREEN EPHEDRA, ***E. viridis*** Coville

5 Seed cones globose, on peduncles 10-12 mm long; bark reddish to brown; southeast … CORY'S EPHEDRA, ***E. coryi*** E.L. Reed

PINACEAE PINE FAMILY

1 Leaves in clusters of 2-5, surrounded by a basal sheath (which may be early deciduous) … ***Pinus***

1 Leaves borne singly, not in clusters

2 Leaves more-or-less square in cross-section; twigs roughed by peg-like projections that persist after the leaves fall … ***Picea***

2 Leaves flattened, not squarrish; twigs lacking peg-like projections

3 Leaves sessile, leaving a circular leaf-scar; seed cones erect, the scales falling from the persistent main axis, the subtending bracts not 3-toothed … ***Abies***

3 Leaves petiolate from a short stalk that lies flat against the twig, leaving an elliptic leaf-scar; seed cones drooping, the entire cone falling when mature, the subtending bracts conspicuously 3-toothed … ***Pseudotsuga***

Abies

1 Branchlets pubescent; leaves mostly 2-3 cm long, the tips notched to rounded … CORK-BARK FIR, ***A. arizonica*** Merriam

1 Branchlets glabrous; leaves mostly 3-5 cm or more long, the tips rounded to pointed … WHITE FIR, ***A. concolor*** (Gordon & Glendinning) Lindley ex Hildebrand

Picea

1 Twigs or leaf bases of current year's growth pubescent; leaves flexible, not sharply pointed; female cones 3-6 cm long … ENGELMANN'S SPRUCE, ***P. engelmannii*** Parry ex Engelmann var. ***engelmannii***

1 Twigs and leaf bases of current year's growth glabrous; leaves rigid, sharply pointed; female cones 6-10 cm long … COLORADO BLUE SPRUCE, ***P. pungens*** Engelmann

Pinus

1 Leaves mostly 2-3 in a cluster

2 Leaves mostly 2 per cluster … PIÑON PINE, ***P. edulis*** Engelmann

2 Leaves mostly 3 per cluster

3 Leaf sheaths early deciduous

4 Leaves mostly 6-12 cm long; plants monoecious … CHIHUAHUA PINE, ***P. leiophylla*** Schiede & Deppe var. ***chihuahuana*** (Engelmann) Shaw

4 Leaves mostly 3-6 cm long; plants nearly dioecious … MEXICAN PIÑON PINE, ***P. cembroides*** Zuccarini

5 Leaves bicolored, one surface with white lines, the other surface green … var. ***bicolor*** Little

5 Leaves of one color on both surfaces, or very nearly so … var. ***cembroides***

3 Leaf sheath persistent

6 Leaves mostly 25-40 cm long; sheath 2-3 cm long … APACHE PINE, ***P. engelmannii*** Carrier

6 Leaves mostly 10-22 cm long; sheaths 1-2 cm long … PONDEROSA PINE, ***P. ponderosa*** Lawson var. ***scopulorum*** Engelmann

1 Leaves mostly 5 (occasionally 4) in a cluster

7 Leaves mostly 10-22 cm long … ARIZONA PINE, ***P. ponderosa*** Lawson var. ***arizonica*** (Engelmann) Shaw

7 Leaves mostly 3-8 cm long

8 Leaf sheaths persistent; bark of young branches nearly white; needles strongly curved, sticky from tiny resin droplets … BRISTLECONE PINE, ***P. aristata*** Engelmann

8 Leaf sheaths early deciduous; bark of young branches gray; needles straight or nearly so, lacking resin droplets

9 Needles 3.5-6.5 cm long, yellowish green; cone scales truncate at the apex, neither narrowed nor reflexed; northern New Mexico … LIMBER PINE, ***P. flexilis*** James

9 Needles 6-8 cm long, bluish green; cone scales narrowed and strongly reflexed at the apex; central to southern New Mexico … SOUTHWESTERN WHITE PINE, ***P. strobiformis*** Engelmann

Pseudotsuga … DOUGLAS FIR, ***P. menziesii*** (Mirbel) Franco var. ***glauca*** (Beissner) Franco

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Martin, W.C. & C.R. Hutchins. 1980. A Flora of New Mexico. Vol. 1. Vaduz, Germany, J. Cramer.

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Looking Back in the Month of May —

May 1, 1753: Conventional publication date of *Species Plantarum* by Linnaeus.

May 14, 1804: Lewis & Clark expedition leaves St. Louis.

May 23, 1707: Carl Linnaeus born.

Rye, Wheat, Triticale, and Barley

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I have noticed a confusion among many botanists in distinguishing among the agronomic crops rye (*Secale*), wheat (*Triticum*), their hybrid, triticale (*xTriticosecale*), and barley (*Hordeum*). Ignoring the guffaw we hear from the John Deere at the end of the lane, I present here a tutorial to the identification of these easily confused grain crops so essential to our well-being, and so little known to our urban citizenry.

One finds these waifs of agriculture not only as short-lived escapes from their crop fields, but also as soil stabilizers sown along roadsides, medians, and concrete clover-leafs.

All of these species are characterized by a prominent spike inflorescence, usually with long awns (although there are awnless forms that one encounters from time to time), and rather conspicuous auricles at the summit of the sheath.

1 Glumes broad, ovate to broadly elliptic
  2 Nerves of the lemma converging at the apex; plants commonly glaucous ..... ×*Triticosecale*, triticale
  2 Nerves of the lemma more-or-less parallel, not converging at the apex; plants commonly green and not glaucous ..... *Triticum*, wheat
1 Glumes narrow, subulate to narrowly lanceolate
  3 Spikelets three per node of the spike (6 glumes attached to the rachis); lemma keels smooth ..... *Hordeum*, barley
  3 Spikelets single per node of the spike (2 glumes attached to the rachis); lemma keels strongly pectinate-fringed ..... *Secale*, rye

Hordeum vulgare Linnaeus, BARLEY
Hordeum trifurcatum (Schlectental) Wender
Hordeum vulgare Linnaeus var. *trifurcatum* (Schlectental) Alef.
Hordeum distichum Linnaeus

Plants summer or winter annuals, to 100(150) cm tall. Spikes 5-10 cm long (excluding the awns), 0.8-2 cm wide, with 3 spikelets per node, 1, 2, or 3 of which form seed at maturity (resulting in 2-, 4-, and 6-rowed barley), the rachis usually not disarticulating at maturity. Central spikelets sessile. Glumes 10-30 mm long, flattened. Lemmas 6-12 mm long, glabrous or scabrid, with awns 30-180 mm long. Lateral spikelets usually sessile when fertile, pedicelled when sterile, the pedicels to 3 mm, the lemmas awned when fertile.

This species differs from others in the genus *Hordeum* in that the spike remains intact, the disarticulation occurring above the glumes.

Three phases or races are met with in New Mexico: beardless, six-row and two-row barleys. Of the three, the *vulgare* phase, typical of the species, is most easily confused with the other grains mentioned here and is the one most commonly encountered.

1 Awns suppressed or variously deformed, commonly 3-cleft ..... the *trifurcatum* phase, BEARDLESS BARLEY
1 Awns well developed, not deformed nor 3-cleft
  2 Lateral spikelets sessile, fertile and well-developed ..... the *vulgare* phase, SIX-ROW BARLEY
  2 Lateral spikelets pedicelled, sterile and much smaller in size ..... the *distichum* phase, TWO-ROW BARLEY

Secale cereale Linnaeus, RYE.

Plants annual or biennial, (35)50-120(300) cm tall. Spikes (2)5-12(19) cm long, strictly erect or sometimes nodding when mature, the rachis remaining intact or tardily disarticulating. Spikelets single at the nodes, with 2(3) florets. Glumes linear, 8-20 mm long, terminating in an awn 1-3 mm long. Lemmas linear to narrowly lanceolate, 14-18 mm long, strongly pectinate-ciliate, the awns 7-50 mm long.

×***Triticosecale*** Wittman *ex* A. Camus, TRITICALE.
×*Triticale* Tscherm.-Seys. *ex* Müntzing

Plants annual, to 130 cm tall. Spikes terminal, 8-20 cm long, the spikelets solitary at the nodes with 2-3 florets, the terminatl floret usually reduced. Glumes ovate, 9-12 mm long, asymmetrically keeled and toothed distally, with awns 3-4 mm long. Lemmas ovate, 10-15 mm long, the nerves converging at the apex, with awns 3-50 mm long.

This name ×*Triticosecale* refers to artificial hybrids between wheat (*Triticum*) and rye (*Secale*). There is no valid specific epithet, and the crop generally goes by the common name, triticale. Cultivars may be referred to in the normal way, e.g., ×*Triticosecale* 'Newton' or ×*Triticosecale* 'Bokolo'. The hybrid has been known since the late 1800s, but not until the last 50 years or so has the crop been developed commercially. The genetics of the crop is extremely complex, involving multiple hybridizations, backcrossings, and artificially induced chromosome doubling. The morphological variation is correspondingly diverse, and a plant rarely falls strictly intermediate to the two parents.

Triticum aestivum Linnaeus, WHEAT.

Plants annual, 14-150 cm tall. Spikes (4)6-18 cm long, the rachis persistent. Spikelets single at the nodes, erect or ascending, with 2-5 fertile florets, sometimes with additional sterile florets above. Glumes ovate to broadly elliptic, 6-12 mm long, several-nerved, usually keeled from one of the side nerves, terminating in an awn to 4 cm long, or awnless. Lemmas ovate, 10-15 mm long, with an awn to 12 cm long, or awnless.

This is the common bread wheat of agriculture, a hexaploid derived from goatgrass and emmer wheats, with bearded (awned) and beardless (awnless) forms.

Illustrations on the following page are from USDA Misc. Publ. 200 and Baum & Gupta [Can. J. Bot. 68:1889-1893. 1990.]

Hordeum vulgare, barley

Beardless barley

Triad of spikelets showing the six narrow glumes at the base

Secale cereale, rye

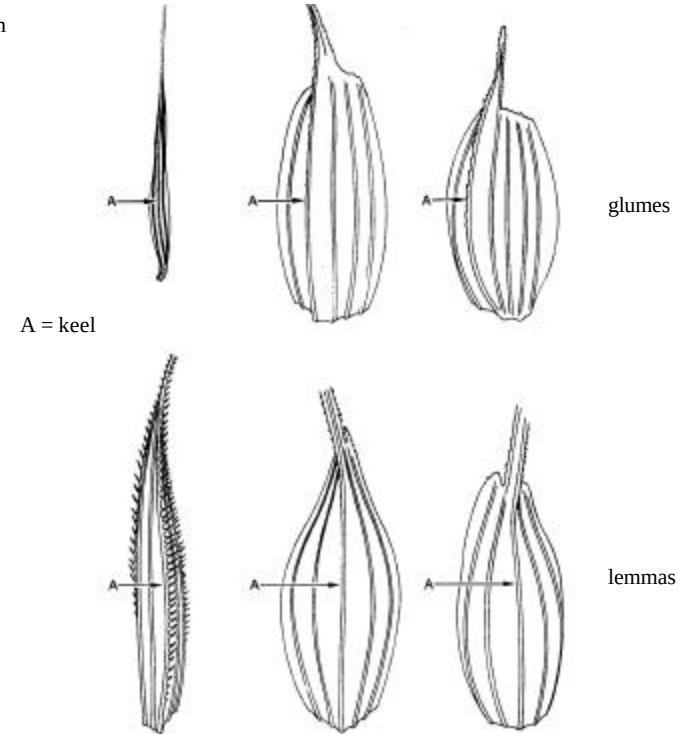
Single spikelet, with two narrow glumes

Triticum aestivum, wheat

Beardless form

Spikelet with two broad glumes.

Comparison of glumes and lemmas of rye, triticale, and wheat.



Botanical Literature of Interest

Taxonomy and Floristics

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Miscellaneous

Mischler, B. 2002. **A radical view of Byophyte biology: mosses are from Mars, vascular plants are from Venus.** BEN 280 (on the web at <http://www.ou.edu/cas/botany-micro/ben/>.

Plant Distribution Reports

New records and significant distribution reports for New Mexico plants should be documented by complete collection information and disposition of a specimen (herbarium). Exotic taxa are indicated by an asterisk (*).

— Richard Worthington [P.O. Box 13331, El Paso, TX 79913]

Carex lativena S. D. Jones and G. D. Jones (Cyperaceae): Otero Co., Guadalupe Mts., Guadalupe Rim (T27S, R20E, Sec. 36, SW tip), 6000 ft., crack in bedrock in canyon bottom, 21 Apr 2001, R. D. Worthington 30420 (UTEP; BRCH).

Simsia lagascaeformis DeCandolle (Asteraceae): Otero Co., Crow Flats, along road to Dog Canyon, edge of graded road in creosote community where water accumulates, growing with *Verbesina encelioides*, 3 Sep 2000, R.D. Worthington 30276 (NMCR, UTEP). [This is the second report of this species for New Mexico.]

— Robert Dorn [P.O. Box 1471, Cheyenne, WY 82003]

Salix bonplandiana Kunth var. ***laevigata*** (Bebb) Dorn (Salicaceae): San Juan Co., Chuska Mts, northwest of Toadlena Trading Post, 6800 ft, 27 May 19989, S. O'Kane 4358 (SJC); Chuska Mts, Upper Palisades Creek, 15 Jul 1998, Roth 225 (SJC).

****Salix fragilis*** Linnaeus (Salicaceae): Mora Co., northwest edge of Cleveland, roadside ditch, 7200 ft, 29 Jul 1997, R. Dorn 7436 (RM); San Juan Co., Aztec, stream bank, 5600 ft, 3 Jul 2001, R. Dorn 8823 (RM).

What's In A Name?

Just who are these guys, anyway? One of the plant names we run into more than any other is *wrightii* or *wrightiana* (there are no *wrightianus*, masculine, in the New Mexico flora) in honor of Charles Wright. Wright (1811-1885), an indefatigable botanical explorer of the 19th century, collected plants mostly for Asa Gray of Harvard (though a graduate of Yale University). He visited the region in 1849 (Texas) and in 1851-52 (mostly New Mexico, environs of Santa Rita, and Arizona) as Surveyor and Botanist for the U.S.-Mexican Boundary Survey (see the lead article in this issue). His southwestern collections were treated in Gray's *Plantae Wrightianae* (1852, 1853). During 1853-1855 he accompanied Ringgold's North Pacific Exploring Expedition, then spent several years collecting in Cuba, the results of which are enumerated in Grisebach's *Plantae Wrightianae*. This is the man of whom Gray said: "Surely no botanist ever earned such scientific remembrance by entire devotion, acute observation, severe exertion, and perseverance under hardship and privation....No name is more largely commemorated in the Botany of Texas, New Mexico, and Arizona than that of Charles Wright." He is remembered in our flora by 51 *wrightii*, 3 *wrightiana*, and the full-name genus *Carlowrightia*.

Botany is the natural science that transmits the knowledge of plants.
— Linnaeus

Publication and Subscription Information

"The New Mexico Botanist" is published irregularly (as information accrues) at no charge. You may be placed on the mailing list by sending your name and complete mailing address to the editor:

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The New Mexico Botanist

COOPERATIVE EXTENSION SERVICE
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Notices

- The latest version (March 5, 2002) of **A Working Index to New Mexico Vascular Plant Names** may be found on the web at <http://web.nmsu.edu/~kallred/herbweb/>.
- **Sedges 2002:** International Conference on Uses, Diversity, and Systematics of Cyperaceae, June 6-8, Deleware State University. Contact Robert Naczi: rnaczi@dsc.edu (e-mail), 302-857-6450 (telephone).
- **Botany 2002:** August 4-7, Madison, Wisconsin. The annual meeting of ASPT as well as of the Botanical Society of America, American Fern Society, Canadian Botanical Association, and the Phycological Society of America. The theme of the meeting will be "Botany in the Curriculum: Integrating Research and Teaching." For information about the meeting, see the web site <http://www.botany2002.org/>.
- **Latin texts online**, including *Species Plantarum, Prodromus, etc.*: <http://eee.uci.edu/~papyri/bibliography/>
- **The 43rd Annual Meeting of the Society for Economic Botany:** The New York Botanical Garden, June 22 - 27, 2002. Symposium (June 23): Origins, Evolution, and Conservation of Crop Plants: A Molecular Approach. Especially for Students (June 25): Workshop: Ethnobotanist's Digital Toolkit. Distinguished Economic Botanist (June 26):Professor Sir Ghillean T. Prance. Visit the SEB website to Register and Submit an Abstract <http://www.econbot.org>.