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In This Issue —

The Fall of Giants

Paul Alan Cox

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Within the last year and a half or so PLANT TALK has chronicled the passing of several giants in plant science and plant conservation. I have regarded as a personal loss the deaths of Richard Evan Schultes, Ledyard Stebbins, and most, recently, Herbert Baker, who all loomed large in my graduate education. Each of these three scientists played key roles in founding disciplines now considered crucial to plane conservation. Schultes was arguably the father of modern ethnobotany, Stebbins was architect of the new evolutionary synthesis, and Herbert Baker and his wife Irene Baker led the 'renaissance' in pollination biology and plant reproductive biology.

After receiving my PhD I was fortunate to spend two years as a Miller Fellow assigned to Herbert and Irene Baker's laboratory at the University of California, Berkeley. Irene's command of laboratory technique was as authoritative as Herbert's encyclopaedic grasp of the literature. In the Baker lab, there was little mechanization — we used wet lab techniques rather than expensive machinery for studies ranging from nectar chemistry to electrophoresis — and I and the graduate students there learned that science is an endeavour facilitated not by expensive equipment, but instead by inquiring minds. Irene led the laboratory work, and Herbert took the lead in writing the papers. He suffered from Parkinson's disease, but refused to be handicapped by it, and walked several miles a day to his office for exercise. Despite physical difficulties, Herbert remained intellectually playful. Our shared lunches became something of a ritual: as he nibbled his cheese sandwich (always quietly pushing half of his chocolate bar to my side of the lab bench), I would ask him about the reproductive biology of some obscure plant species I had pulled out of Mabberley or Kerner or Marilaun. Herbert would then present a lucid account of the plant's seed dispersal, pollination biology, colonization strategies, conservation status, and economic potential, based on his reading the domestic and foreign literature as well as his own observations. I cannot recall ever stumping him.

Ledyard Stebbins and Richard Schultes displayed a similar breadth of knowledge, and each had a sound understanding of the natural history of plants. As a graduate student, I attended Professor Schultes' noon-time seminars where I was instructed in the finer arts of using a blow gun, the proper way to approach a native tribe for the first time, and the importance of understanding indigenous religions and rituals. Later at Berkeley, I came to know Ledyard Stebbins, who was a frequent visitor to the Baker lab, and spent some time with him in Davis. Up until the very end, Ledyard was pursuing field work on the breeding systems of *Antennaria*, the subject of his Harvard dissertation three quarters of a century before.

I relate these stories not to claim some modicum of reflected glory through association with these famous scientists, but merely to say that as a fly on the wall — a very fortunate fly on the wall — I was able to see for myself the depth of thought and preparation that characterized Baker, Schultes and Stebbins. Where are their equals among the younger generation of botanists?

There is only a handful of botanists who have the broad field experience of the previous generation, and fewer still, such as Spencer Barrett or Jim White, who have anything approach-

(Continued on page 2, Giants)

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.
— Linnaeus

(Giants, Continued from page 1)

ing the comprehensive grasp of the literature commanded by these three giants. Furthermore, I am deeply concerned that current training programmes in what is now called 'integrative biology', or 'ecology, evolution, population, and ecosystem sciences', are unlikely to produce botanists with such a deep understanding of the life of plants.

To conserve plant species, we need to understand them. While fluency in plant molecular techniques and agility in manoeuvring within an increasingly bureaucratized conservation landscape seem to be requirements for younger plant biologists, a broad appreciation of natural history no longer seems to be necessary.

Plant conservation today suffers from a lack of practitioners — the 'foot-soldiers' of botany, who can identify plants accurately and assess sites for plant richness. Sweden still has many biologists imbued with a love of natural history but in some countries, notably Britain, France and my own United States, field botany has moved from the academic to the amateur sphere. Botany departments in universities have been disbanded, replaced by academic units focused primarily on molecular approaches. And old-fashioned searches through library stacks and the wondrous serendipity of coming upon key papers, often written in German, French or Italian decades ago, has been replaced by computerized search engines, which reveal only recent, English work on plants, many of an ephemeral nature.

Today politicians have accepted the case that plant species are declining and need urgent conservation efforts. However, there still seems to be too little support for the training of field botanists in subjects like practical taxonomy, plant identification, plant ecology and ethnobotany, fields vital if we are to succeed in biodiversity conservation. In addition, support for basic botanical infrastructure, including herbaria, botanical libraries and gardens, seems harder to find in an increasingly competitive philanthropic environment.

Three giants have fallen. Who remains to replace them? 🕮

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 (*).

— G.L. Nesom [see Nesom 2001, Botanical Literature of Interest]

Pseudognaphalium jaliscense (Greenman) A. Anderberg (Asteraceae): Grant, Lincoln, Mora, and San Miguel counties.

Pseudognaphalium luteoalbum (Linnaeus) Hilliard & Burtt (Asteraceae): Hidalgo Co.

— William J. Hess [The Morton Arboretum, Lisle, IL 60532]

Adolphia infesta (Kunth) Meissn. (Rhamnaceae): Hidalgo Co., Guadalupe Canyon, 28 mi. E of Douglas, AZ, on W side of Peloncillo Mts., desert thornland near creek bottom, 4500 ft, 2 April 1969, W.J. Hess 2432 (MOR).

— D. Wilken [see Wilken 2001, Bot. Lit. of Interest]

Ipomopsis longiflora (Torrey) V.E. Grant subsp. ***neomexicana*** Wilken (Polemoniaceae): type from Sierra Co., 18 other counties cited.

— Kelly Allred [MSC Box 3-I, New Mexico State University, Las Cruces, NM 88003] and David Lee Anderson [Environmental Services Division (DES-E), Bld T-150, White Sands Missile Range, NM 88002]

****Conyza bonariensis*** (Linnaeus) Cronquist (Asteraceae): Doña Ana Co.: Las Cruces, adventive in lawn at corner of Solano & Wyoming streets and growing with *Conyza ramosissima*, 24 Oct 2001, K.W. Allred 8193 (NMCR); White Sands Missile Range, flower beds on main post, 28 June 1999, David Lee Anderson 7520 (WSMR). [This validates an earlier report for which the specimen cannot be found.]

— Kelly Allred [MSC Box 3-I, New Mexico State University, Las Cruces, NM 88003]

****Myriophyllum aquaticum*** (Vellozo) Verdcourt (Haloragaceae, including *M. brasiliense*): Socorro Co., Bosque del Apache National Wildlife Refuge, forming thick mats in the irrigation canals, 4500 ft, 30 Mar 2001, K.W. Allred 8211 (NMCR). [This is the second record and a second county for this exotic escape from aquaria.]

— Susannah Johnson [1705 Brown Road, Las Cruces, NM 88005]

Muhlenbergia eludens C.G. Reeder (Poaceae): Catron Co., Apache National Forest, Saddle Mountain, along road to Saddle Mt. Lookout about 1.5 miles below the summit and 0.5 miles above Hinkle Park, in a saddle between two small hills, ponderosa pine forest with juniper, piñon, and oak, 7800 ft, 29 Sep 2001, S.B. Johnson 747 (NMCR). [This is the second record of this little grass in New Mexico, the first being in 1925 from a site 39 miles to the east.] 🕮

Botanical Literature of Interest

Taxonomy and Floristics

Ashworth, V.E.T.M., B.C. O'Brien, & E.A. Friar. 2001. **Survey of *Juniperus communis* L. (Cupressaceae) varieties from the western United States using RAPD fingerprints.** Madroño 48(3):172-176. [Calls into question the recognition of varieties in this species.]

Brodo, I.M., S.D. Sharnoff, & S. Sharnoff. 2001. **Lichens of North America.** Yale University Press, New Haven, CT. 795 pp. [This is an extraordinary book, and at $48.96 (amazon.com, 12 Feb 2002) it's a modern-day miracle!]

Costea, M., A. Sanders, & G. Waines. 2001. **Preliminary results toward a revision of the *Amaranthus hybridus* species complex (Amaranthaceae).** Sida 19(4):931-974.

Costea, M., A. Sanders, & G. Waines. 2001. **Notes on some little known *Amaranthus* taxa (Amaranthaceae) in the United States.** Sida 19(4):975-992.

Duvall, M.R., J.D. Noll, & A.H. Minn. 2001. **Phylogenetics of Paniceae (Poaceae).** Amer. J. Bot. 88(11):1988-1992.

Forbes, A.C. & K.W. Allred. 2001. **An inventory of the flora of the New Mexico State University Range and Livestock Research center (Corona Ranch).** New Mexico Naturalist's Notes 3(1):1-32.

Harms, R.T. 2001. **Radiate and eradiate individuals in *Grindelia nuda* (Asteraceae).** Sida 19(3):715-717.

Hubbard, J.P. 2001. **An update of the *Penstemon* treatment in Wooton and Standley's (1915) Flora of New Mexico.** Bull. Amer. Penstemon Soc. 60(2):4-24.

Ickert-Bond, S.M. & D.J. Pinkava. 2001. **Vascular plant types in the Arizona State University herbarium.** Sida 19(4):1039-1059.

Kiger, R.W. 2001. **New combinations in *Phemeranthus* Rafinesque (Portulacaceae).** Novon 11:319-321.

Nesom, G.L. 2001. **New records in *Pseudognaphalium* (Asteraceae: Gnaphalieae) for the United States.** Sida 19(4):1185-1190.

Sanderson, S.C. & H.C. Stutz. 2001. **Chromosome races of fourwing saltbush (*Atriplex canescens*), Chenopodiaceae.** USDA For. Serv. Proc. RMRS-P-21. p. 75-88.

Sivinski, R.C. 2001. **A hanging garden plant community in northwestern New Mexico.** New Mexico Naturalist's Notes 3(1):48-50.

Sivinksi, R.C. & P.J Knight. 2001. **Population characteristics of Mancos Milkvetch (*Astragalus humillimus*: Fabaceae) in San Juan County, New Mexico.** New Mexico Naturalist's Notes 3(1):51-61.

Spellenberg, R. & S. R. Rodríguez-T. 2001. **Geographic variation and taxonomy of North American species of *Mirabilis*, section *Oxybaphoides* (Nyctaginaceae).** Sida 19(3):539-570.

Terrell, E.E. 2001. **Taxonomy of *Stenaria* (Rubiaceae: Hedyotideae), a new genus including *Hedyotis nigricans*.** Sida 19 (3):591-614.

Terrell, E.E. 2001. **Taxonomic review of *Houstonia acerosa* and *H. palmeri*, with notes on *Hedyotis* and *Oldenlandia* (Rubiaceae).** Sida 19(4):913-922.

Turner, B.L. 2001. **Biological status of *Argythamnia laevis* (Euphorbiaceae).** Sida 19(3):621-622.

Walker, J.B. & W.J. Elisens. 2001. **A revision of *Salvia* section *Heterosphace* (Lamiaceae) in western North America.** Sida 19 (3):571-589.

White, H.L. & W.C. Holmes. 2001. **Validation of the name *Orobanche ludoviciana* subsp. *multiflora* (Orobanchaceae).** Sida 19 (3):623-624.

Wilken, D. 2001. **A new *Ipomopsis* (Polemoniaceae) from the southwest USA and adjacent Mexico.** Madroño 48(2):116-122.

Wipff, J.K. 2001. **Nomenclatural changes in *Pennisetum* (Poaceae: Paniceae).** Sida 19(3):523-530.

Wipff, J.K. 2001. **Nomenclatural change in the Digitatia cognata complex (Poaceae: Paniceae).** Sida 19(4):923-924.

Miscellaneous

Barbour, MG., P.A. Castelfranco, M. Rejmanek, & R.W. Pearcy. 2001. **A tribute to the contributions of Professor Jack Major.** Madroño 48(3):215-218.

Lentz, D.L., M.E.D. Pohl, K.O. Pope, & A.R. Wyatt. 2001 **Prehistoric sunflower (*Helianthus annuus* L.) domestication in Mexico.** Econ. Bot. 55(3):370-376.

Nicholson, R. 2001. **The splendid haul of Cyrus Guernsey Pringle.** Arnoldia 61(1):2-9. 🕮

What's In A Name?

We're all familiar with "How do I love thee? Let me count the ways." (Elizabeth Barrett Browning, Sonnett 43). Well, the same holds true for colors and botanical names. Take red, for example. The epithet *ruber* (masculine; *rubra*, feminine, and *rubrum*, neuter) is the common term for any general red. Hence *Festuca rubra* and *Chenopodium rubrum* (we have no masculine *ruber*s in the New Mexico flora). In addition, we have *purpureus* for a dull red, with a tinge of blue (purple), which is registered by *Aristida purpurea* and *Cymopterus purpureus; coccineus* for scarlet, as in *Echinocereus coccineus* and *Stachys coccinea*; *roseus* for a pale red, as in *Pinaropappus roseus* and *Palafoxia rosea*; *sanguineus* and haemat- for blood red, as in *Polygala sanguinea* and *Berberis haematocarpa*; *vinaceus* for wine-red, as in *Cirsium vinaceum*; flesh-colored reds appear in *Tripterocalyx carnea*, *Hieraceum carneum*, and *Allionia incarnata*; *flammulus* for flame-colored, as in *Ranunculus flammulus*; and *miniatus* for vermilion, scarlet with a touch of yellow (and not meaning miniature), as in *Castilleja miniata*. In all, there are at least 25 Latin adjectives (perhaps more) that have been used in botanical literature to refer to some sort of red. So, a red is a red is a red? Perhaps not, but by any other name still looks the same. — K. Ruber-totus. 🕮

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

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