



Research Brief for Resource Managers

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Manzanita Mania: From Carolus Linnaeus to the Present

Keeley, J.E., V.T. Parker, and M.C. Vasey. 2017. Characters in *Arctostaphylos* taxonomy. *Madroño* 64:138-153.
(**Photo 3**)

Our human past influences how we interpret the present. Even in science, where the focus is on empirical findings, the eccentric people behind the findings often have much to teach us, sometimes through infamous competitions, but more often through innovative collaboration. For a wonderful change of perspective, this history focuses on the people who were the leading force behind our current understanding of the systematic relationships of *Arctostaphylos*.

As in every profession, plant taxonomists are human first, prone to jealousy and misunderstandings, but striving for connection, shared discovery, and true progress. The drama surrounding plant taxonomy was partly cast by Carolus Linnaeus' titular observation that plant parts are analogous to human genitalia; "Linnean botany is enough to shock female modesty". Setting the stage for skulduggery and romance, punctuated by murder, an earthquake and WWII over the next three centuries, Linnaeus (1707-1778) was the first taxonomist to identify a manzanita (*Arctostaphylos*), although at the time he classified it as genus *Arbutus*.

Management Implications

- Through three centuries of collaboration and competition, almost 50 Ericaceae experts have documented over 300 *Arctostaphylos* taxa, but only about 60 species are currently recognized.
- The lessons, insights and humor of this history point toward collaboration as a better, quicker route to scientific insight than competition!
- The relatively quick, peer-review process for journals is insignificant next to the thorough vetting that publication garners with the perspective of time.
- The overlapping stories of Alice Eastwood (1859-1953; an adventurous, self-taught taxonomist; **Photo 1**), Willis Linn Jepson (1867-1946; a student of anti-Darwinian Rev. Greene), Jim Roof (1910-1983; the "cantankerous curmudgeon of Tilden Park"; **Photo 2**), and Phillip Wells (1928-2004; a rebellious molecular systematist) are especially illustrative of the Shakespearean drama that seems to drive *Arctostaphylos* taxonomic discovery.

Even to the experts who study them, the manzanitas are a tricky group of shrubs to sort. Unlike other plants in the heath family (Ericaceae), their floral traits are very similar, so vegetative characteristics must be used to

distinguish them instead, using details like leaf shape, inflorescence bracts, the distribution of the stomata, the number of chromosomes, and the postfire life history strategies (i.e., resprouting or obligate seeding). This unique difficulty in classifying Manzanitas has caused many rivalries among the whole hodgepodge of unconventional taxonomy experts, all in the interest of science. Some of these people have emerged

as lumpers (e.g., Jepson), while others are better known as splitters (e.g., Eastwood & Wells). Through various competitions and truces, roughly 300 taxa have been whittled down to only 60 enduring *Arctostaphylos* species over time, the true peer-review process.



Photo 1 Alice Eastwood and John Tomas Howell, Washington state, 1936 (with permission from the Anne T. Kent California Room).

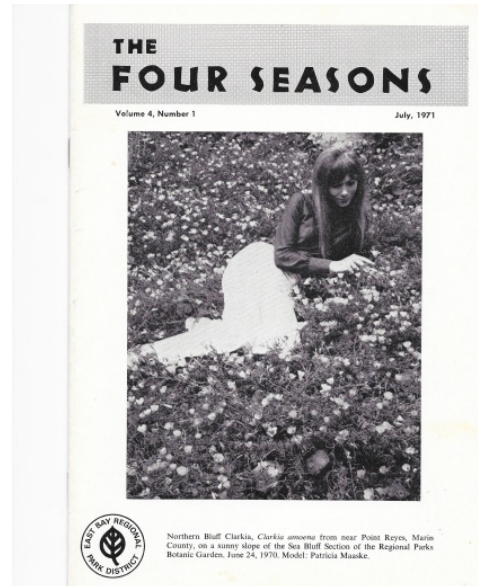


Photo 2 An example of James Roof's **Four Seasons** (with permission of the East Bay Parks)



Photo 3 Three eccentric taxonomic characters of the present: Tom Parker, Mike Vasey, and Jon Keeley at type locality (Gabilan Range, San Benito Co.) for *A. gabilanensis* circa 2005 (photo by Jon Keeley).