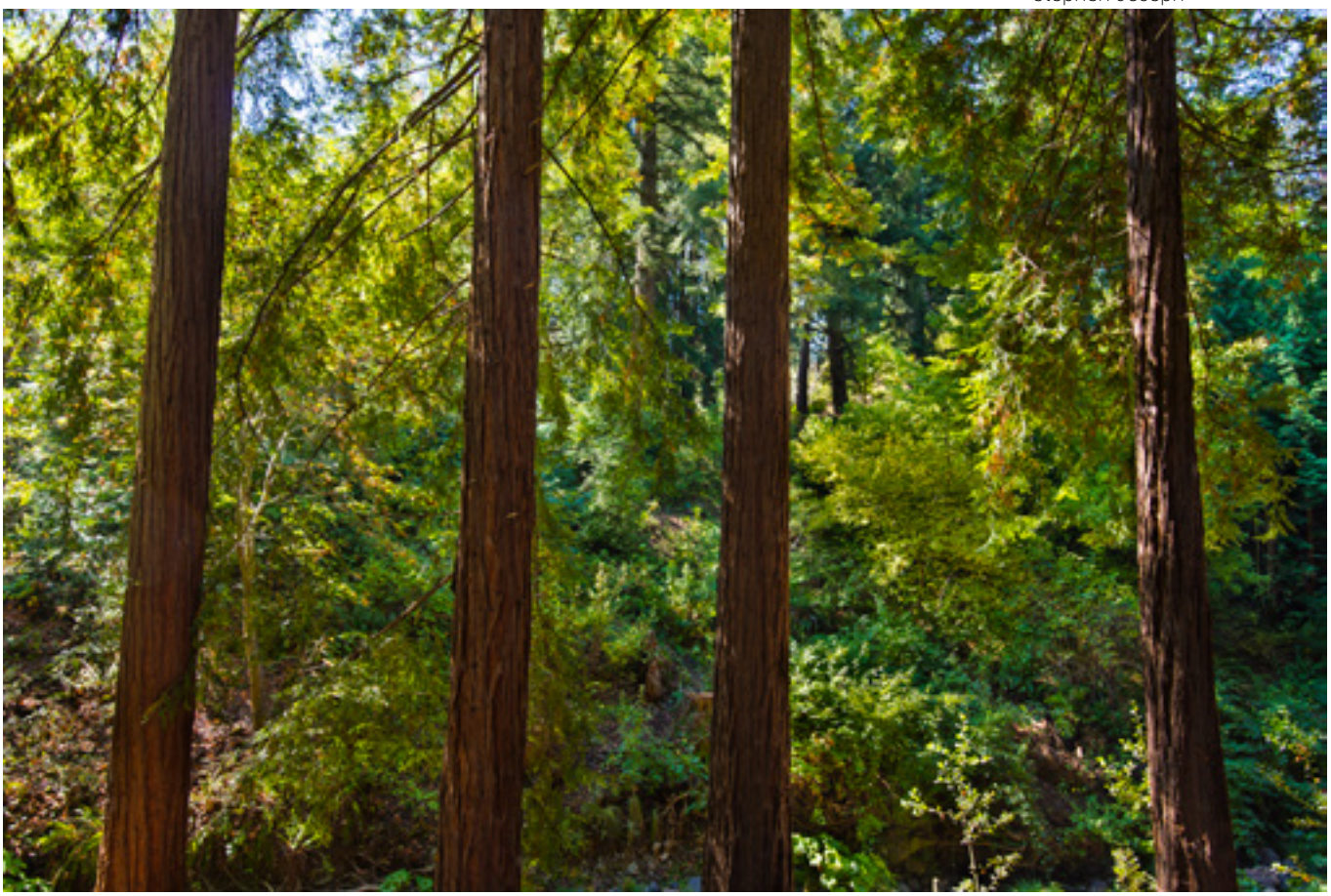
The Californian Redwood Genera: *Sequoia* and *Americus*!

by Bart O'Brien

Our redwoods have a complicated nomenclatural history. The scientific name for the coast redwood has been stable for over 150 years. However, that of the Sierran redwood, while it has been accepted for the past 77 years, should be replaced by its first validly published name: *Americus giganteus*.

COAST REDWOOD

Stephen Joseph



Sequoia sempervirens in the Botanic Garden

The first scientific name applied to coast redwoods was *Taxodium sempervirens* by David Don in 1824 in the second volume of Aylmer Bourke Lambert's book, *A Description of the Genus* Pinus. The specimen illustrated on "Tab. 4" was obtained by Archibald Menzies of the Vancouver expedition from Santa Cruz in the early 1790s. When Don described this conifer, he stated, "It is not without some hesitation, therefore, that I have referred it to *Taxodium*. I have thought the plant too interesting, however, to omit in the present work, leaving it to future observations to determine, whether or not the place which I have assigned to it be its true place. This plant, I propose to call *sempervirens*, from its evergreen leaves. . ." (page 24).

Don's name for coast redwood stood unchallenged for 23 years, until Stephan Friedrich Ladislaus Endlicher published an entirely new genus name for the tree: *Sequoia sempervirens* (D. Don) Endl. on page 198 of his book, *Synopsis Coniferarum*. This 1847 publication correctly states the currently accepted scientific name for coast redwood. In the same publication, Endlicher published a second name for coast redwood: *Sequoia gigantea* that would later confuse the taxonomic status of the Sierran redwood for decades.

Endlicher, then director of the Vienna Botanical Garden, did not give any explanation for his choice of the new genus name *Sequoia* (or for the new names he gave to other genera in the same 1847 publication). He died two years after this publication in 1849, apparently well before anyone had asked him for an explanation.

There have long been competing arguments for this genus name, with many concluding that Endlicher, who was also a noted linguist, had used the name *Sequoia* to honor Sequoyah (also known as George Guess) of the Cherokee nation, creator of the 86-character alphabet that codified the Cherokee language. However, as early as 1879, American botanist John Gill Lemmon wrote of the new genus name, ". . . said to be derived from Sequoya, the celebrated Cherokee Indian; but this is no doubt an afterthought and unworthy to be kept up." He and others at that time thought that *Sequoia* indicated sequence, though they did not explain to what sequence Endlicher might have been referring. There is now compelling evidence (Lowe 2012) that the explanation is quite simple: *Sequoia* is the next genus in Endlicher's long forgotten and largely unknown conifer classification sequence (Latin: *sequi* or *sequor*) that was based on the average number of seeds-per-cone scale!

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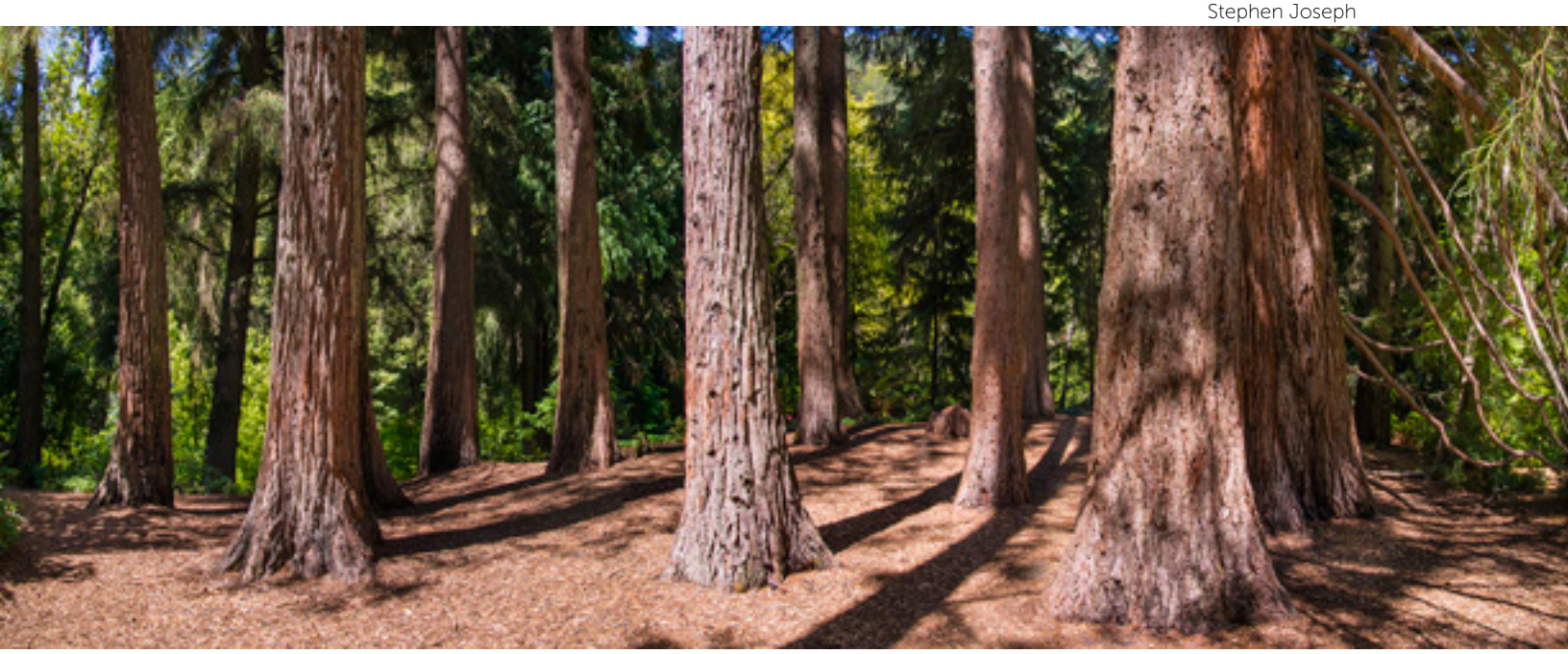
It is odd that Endlicher published both names, *Sequoia sempervirens* and *Sequoia gigantea*, for the coast redwood in the same publication in 1847, though the second name was for a cultivated form of the tree. This was five years before the botanical discovery of Sierran redwoods in 1852, when California botanist Albert Kellogg (one of the founders of the California Academy of Sciences in San Francisco) obtained what are believed to be the first known herbarium specimens. The fact that this incorrect name for coast redwood was properly published is the reason that the Sierran redwoods could never be correctly named *Sequoia gigantea*.

SIERRAN REDWOOD

It took a surprisingly long time for this magnificent Californian tree to receive a widely accepted scientific name— though after researching this article I have considerable doubts about the legitimacy of its current name.

The first illegitimate name for this plant was coined by John Lindley in *The Gardeners' Chronicle & Agricultural Gazette* in 1853: *Wellingtonia gigantea*. This name could not be used, as the genus name *Wellingtonia* had already been used by botanist Carl Daniel Friedrich Meissner for another plant in 1840: *Wellingtonia arnottiana* in the Sabiaceae. (That plant is now thought to be *Meliosma arnottiana*, though there is still some confusion about that.) Americans were in an uproar that their stupendous tree had been named after Britain's Duke of Wellington. Ironically, the common name for this tree in the United Kingdom is still wellingtonia.
A year later, in 1854, three more names were published, but none of them were accepted. The name *Sequoia gigantea* (Lindl.) Decne. was published in June by Joseph Decaisne in *Bulletin de la Société Botanique de France*, but this exact same name had previously (and erroneously) been published by Endlicher (*Sequoia gigantea* Endl.) in 1847 for the coast redwood, *Sequoia sempervirens*, so it could not be used for Sierran redwoods.

Stephen Joseph



Americus giganteus in the Botanic Garden

The next name, *Americus giganteus*, is best understood with a background story: Captain William H. Hanford was a pioneer logger who had built a steam sawmill in 1855 on Hunter Creek in Calaveras County. He had apparently come to California during the Gold Rush from the northeastern U.S. He settled in Murphys, where he was chief engineer of the Union Water Company—15 miles from the Calaveras County Sierran redwoods—when the grove was "discovered." He immediately took full advantage of the situation and, in keeping with a gold-rush mentality, sought to gain financially from these gigantic trees.

To quote Carol Kramer (2010), "In May of 1853, Hanford's crew stripped 50 feet of bark from the Discovery Tree, and then felled the giant. It took five men 22 days to bring the colossus down . . .on June 27, 1853. . . ." The New York Times reported on August 10, 1853, "The mammoth tree in Calaveras County, the greatest and most wonderful production of the vegetable kingdom ever known, has been sacrilegiously cut down for speculative purposes." It was first exhibited in San Francisco on Bush Street between Sansome and Montgomery, where one could pay fifty cents to see the reconstructed bark of the tree's trunk. Advertising for this exhibit mentioned that it would be heading to New York, Boston, London, and Paris.

The bark did travel and the name *Americus giganteus* was published by Hanford in his 14-page leaflet that accompanied his exhibit of The Discovery Tree in New York. The leaflet was titled, "Description of the Great Tree, recently felled upon the Sierra Nevada, California, now placed for Public Exhibition, in the spacious Racket Court of the Union Club, No. 596 Broadway, adjoining the Metropolitan Hotel, New York." Kramer (2010) writes of Hanford's exhibit in New York, "It was a financial disaster. Before the exhibit could go on to Paris, it was destroyed by fire."

However, on June 21, 1854, while in New York, Hanford wrote to the famous British botanist, Sir William Jackson Hooker. Hanford's letter was sent with a letter of introduction written by the eminent New York botanist, Dr. John Torrey. Hanford's letter itself was about the possibility of exhibiting bark from the trunk of a Sierran redwood that started 8 feet from the

ground and upward to a height of about 45 feet in five pieces. It was noted that when set up, the bark was 28 feet in diameter and about 40 feet high. It was first exhibited in San Francisco. Hanford notes that the plant collector Mr. William Lobb (of the English nursery, James Veitch and Son), had seen the tree in the wild and had later seen the bark set up in San Francisco. (It was Lobb's herbarium specimens that were the basis for Lindley naming the tree in 1853. Earlier that year, William Lobb went to see the living trees and to collect seeds and herbarium specimens from Calaveras County after Albert Kellogg had shown him [Lobb] herbarium specimens that had been in Kellogg's possession since 1852.)

It is curious that this name, *Americus giganteus*, was not accepted—as at that time, there were no accepted standards for publishing new botanical names. (The first international botanical congress was held in Paris in 1867, but widespread adoption of the first International Code of Botanical Nomenclature [ICBN] took place at Cambridge, England in 1930.) Early botanic nomenclatural authorities had numerous complaints about this scientific name as, until relatively recently, Hanford was unknown, and therefore his qualifications to be publishing a new botanic name was highly suspect (see Rousseau 1955 in particular). As a result, this name was rejected as "nom. utique rej. prop." (*nomen utique rejiciendum propositum*), meaning that the name was proposed for rejection to the ICBN (Art. 56.1), because otherwise it would cause a disadvantageous nomenclatural change. That seems like a very weak argument, especially now that the identity of the author is known, as is his standing with at least the likes of highly regarded botanist John Torrey (as evidenced in Hanford's letter to Sir John Hooker.) It is extremely rare in botanical nomenclature that the earliest validly published name is not given priority. Additionally, since the plant in question is the only member of its genus, it would not cause any other nomenclatural changes. The genus name *Americus* has never been proposed or used as a genus name for any other plant.

The third proposed name from 1854 was *Washingtonia californica*. This name was published by Charles Frederick Winslow in the August 24, 1854 edition of *The California Farmer and Journal of Useful Sciences*. The name was rejected as the genus name because *Washingtonia* had later been accepted as a conserved name for the palm genus published by Hermann A. Wendland in Botanische Zeitung (Berlin) in 1879, with the type species none other than our California fan palm: *Washingtonia filifera* (Liden ex André) H. Wendl. ex de Bary. Conserved botanic names are the only major exceptions to the rule of priority. (It is interesting to note that apparently Kellogg had intended to name our Sierran redwood *Washingtonia*, but others took action well before he did.) Further research into the details of the proceedings and actions of past sessions of the International Botanical Congresses is needed before this author can fully explain why neither *Washingtonia* nor *Americus* is the accepted genus name for Sierran redwood.

An additional four names were proposed, and almost immediately rejected, during the remaining portion of the 1800s.

In 1855 (and with additional information again in 1858), Berthold Carl Seemann, editor of the journal *Bonplandia*, published the name *Sequoia wellingtonia* Seem. This name was technically flawed as most botanists were already in agreement that the Sierran redwood should be in a different genus than the coast redwood. It was doubly unpalatable to nearly all American botanists, as the name still honored the Duke of Wellington.

In 1866, the name *Gigantabies wellingtoniana* was proposed by the Englishman John Nelson, though under the pseudonym Johannes Senilis, in his book, *Pinaceae: being a handbook of the firs and pines*. At the time of publication, the book was savagely reviewed, and none of his proposed new names survive and are rarely ever acknowledged today.

In 1873, prominent Californian botanists Albert Kellogg and Hans Hermann Behr published the name *Taxodium giganteum* (Lindl.) Kell. & Behr in *Proceedings of the California Academy of Sciences*, Series 2, 1:51. This name was used in a number of publications for a time, but it too was deemed insufficient as Sierran redwoods differed substantially from the rest of the genus *Taxodium*.

In 1897, George Bishop Sudworth chose to quasi-resurrect Winslow's genus name, but as a species epithet: *Sequoia washingtonianum* (C.F. Winslow) Sudw. Although this proposed name was accepted and used by some North American botanists, it was subsequently decided that this name would have to be a synonym of Seemann's *Sequoia wellingtonianum*—a name that had already been discarded as most botanists agreed that there were enough differences between the Sierran redwoods and coast redwoods such that each should be in its own genus.

It had long been known that there were fossil plant specimens that appeared to be very similar to our Sierran redwoods. The paleobotanist Carl Bořivoj Presl described and named the first of these fossils in 1838: *Steinhauera globosa*. This led botanist Carl Ernst Otto Kuntze to propose a new name for Sierran redwoods: *Steinhauera gigantea* (Lindl.) Kuntze ex Voss in 1907 in the book *Mitteilungen der Deutschen Dendrologischen Gesellschaft* by Andreas Voss. It soon became clear that most botanists did not feel that this was acceptable, as the living specimens differed significantly from the fossil specimens. At one point, it was also decided that fossil plants should not share the same genus name as living plants—though this does not seem to be the case at this time.

Finally, 86 years after the first attempt to name the Sierran redwood, botanist John Theodore Buchholz published the currently widely accepted name for the Sierran redwood in 1939: *Sequoiadendron giganteum* (Lindl.) J. Buchholz. The name was published in the *American Journal of Botany* 26(7): 536.

And this is where our story has stalled for 77 years. It remains to be seen whether or not Hanford's valid publication will ever be accepted. Given that the scientific community accepts outright plagiarism of plant names,[1] plant names published in breach of international laws and treaties,[2] and plant names published with minimal descriptions and minimal distribution of the publication,[3] there is absolutely no valid excuse for not accepting *Americus giganteus* as the legitimate name for the plant that we currently know as *Sequoiadendron giganteum*.

(Endnotes)

1. For example, Jepson's theft of multiple manzanita names from Wieslander and Schreiber—see *Erythea* 8(13). 1938. and *Madrono* 5(1). 1939.

2. For example, *Phragmipedium kovachii*—read the book: *The Scent of Scandal* by Craig Pittman.

3. For example, multiple *Grevillea* taxa "published" by Donald J. McGillivray in 1986 in *New Names in* Grevillea (*Proteaceae*).

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