NEOTYPIFICATION AND NOTES ON THE STATUS OF CASTILLEJA TAPEINOCLADA (OROBANCHACEAE)

J. MARK EGGER
Herbarium, Burke Museum of Natural History and Culture
University of Washington
Seattle, Washington 98195-5325
m.egger@comcast.net

ABSTRACT
A neotype is designated for Castilleja tapeinoclada Loes., due to the destruction of original material in Berlin during World War II and the ambiguous nature of the original typification. Synonymy and a discussion of the status of this Guatemalan endemic species are also provided.

In 1903, Theodor Loesener of the Botanic Garden and Botanical Museum Berlin-Dahlem (B) described in his serial, Plantae Selerianae, several closely related taxa in the genus Castilleja, based on specimens obtained by one of the museum’s field botanists, Eduard Georg Seler, in the mountainous regions of Guatemala in Central America. Loesener described C. tapeinoclada Loes. with two named varieties, C. tapeinoclada var. subglabra Loes. and C. tapeinoclada var. hirta Loes., as well as another closely similar species, C. katakyptusa Loes. Each of these entities was distinguished by minor differences in herbage pubescence, presence of leaf lobes, and/or relative measurements of the flowers and bracts. Oddly, Loesener designated type collections for the two varietal names, var. subglaber (Seler 2357) and var. hirta, (Seler 2933), but made no such designation for C. tapeinoclada itself. Presumably, Loesener intended the first-mentioned form, var. subglaber, to serve as the equivalent of the species’ nominate form, but this is conjectural and the typification of the species names remains ambiguous. Castilleja katakyptusa was described as monospecific, and a type collection was designated (Seler 2750).

A few years later, Alice Eastwood (1909) published her comprehensive revision of Castilleja in Mexico and Central America, based largely on her studies at the Gray Herbarium (GH). Evidently, Eastwood saw none of the material from Seler’s collections, and in her treatments of C. tapeinoclada and C. katakyptusa, she simply quoted directly from Loesener’s paper, without further comment or any citation of specimens seen by her. She accepted all of Loesener’s names and made no further comments on their typifications. I have confirmed that no type material from Seler’s collections is present at GH or at any of the other herbaria now housed at Harvard University (Walter Kittridge, pers. comm. 2005).

In their treatment of Scrophulariaceae in the Flora of Guatemala, Standley and Williams (1973), reduced var. subglabra and var. hirta, as well as the closely related Castilleja katakyptusa, to synonymy under C. tapeinoclada, but they made no further comment on its typification, simply repeating Loesener’s typification of his two named varieties in the synonymy. Standley and Williams’ interpretation of the Loesener’s taxa stands today, and my herbarium studies of specimens from throughout the range of C. tapeinoclada confirm that the variants distinguished by Loesener are not geographically or ecologically consistent and likely represent random morphological variations commonly found in many Castilleja species.
Figure 1. *Castilleja tapeinoclada*, flowers and bracts. Photo by Fred Muller, Sierra de los Cuchumatanes, Depto. Huehuetenango, Guatemala, 15 May 2011.
In addition to the ambiguous nature of the typification of *Castilleja tapeinoclada* addressed above, it also appears that there are no extant specimens of any of the relevant Seler collections cited by Loesener, as Seler’s primary collections were destroyed in the allied bombing of Berlin in World War II (C. Oberprieler at B, pers. comm., 2003; Harvard University Herbaria Botanist Database). Although some duplicates of Seler’s collections are extant, my extensive efforts to locate any of the specimens designated by Loesener in all herbaria known to house at least some Seler collections (A, CAS, DS, F, GH, K, MEXU, MO, NY, US) have been completely unsuccessful. Internet searches of collection databases and type registries have proved equally fruitless. Finally, the three Seler type collections associated with *C. tapeinoclada* do not appear to be among the historical type images obtained by J.F. Macbride from European herbaria and now housed at F.

In order to provide an unambiguous type collection for *Castilleja tapeinoclada* for the *Castilleja* treatment in a forthcoming volume of the Flora Mesoamericana, the following neotypification is proposed, based on a gathering that is typical of individuals of this species, originates from the general region of the original type collections, contains ample plant material, and is distributed to several major herbaria.

**CASTILLEJA TAPEINOCLADA** Loes., Bull. Herb. Boiss., ser. 2, 3: 285. 1903. **Neotype** (here designated): **Guatemala, Dept. Huehuetenango.** Sierra de los Cuchumatanes, at Chemal at km 318 on Ruta Nac. 9N, frequent in grassy meadow in black loam soil, ca. 3380 m, 4 Aug 1959, J.H. Beaman 3073 (TEX!; isoneotypes: UC!, US!). Figure 3.
Figure 3. Neotype of *Castilleja tapeinoclada* Loes., *Beam* 3073 (TEX).


*Castilleja tapeinoclada* is an uncommon to locally abundant endemic of high elevation meadows and often heavily grazed pastures in the highlands of western Guatemala from 2,700-4,000 meters elevation. In the Flora of Guatemala (op. cit.), Standley and Williams described it as “occasional,” but recent observers (e.g. Fred Muller, pers. comm. 2014) indicate that it is quite common, forming large, conspicuously colorful displays in at least some portions of the Sierra de los Cuchumatanes (Figs. 1 and 2). It is unknown if this discrepancy indicates actual population increases in recent decades, but this species seems to do well on heavily grazed lands, perhaps benefiting from the reduction in competition from more palatable plants. This abundance on grazed pastures is noted on several herbarium collection labels and by local observers. *Castilleja tapeinoclada* has been collected in flower during all months from mid-May to early January in the Departments of Chimaltenango, Huehuetenango, San Marcos, Quetzaltenango, Solala, and Totonicapan.

**ACKNOWLEDGEMENTS**

I thank James L. Reveal for comments on an earlier draft of the manuscript and Tom Wendt and others at TEX for preparation of the digital image of the neotype. I also thank Fred Muller for providing his high quality images of live plants in the field, as well as for sharing his field knowledge of the local populations. Finally, I thank the following herbaria for timely assistance with correspondence and/or loans of specimens and for hospitality during my visits to their institutions: B, CAS, F, G, GH, K, MEXU, MO, NY, P, TEX, UC, US, and WTU.

**LITERATURE CITED**

