

**INDEX TO UNPUBLISHED "HERBARIUM NAMES" FOR *CASTILLEJA*
AND SYNONYMOUS NAMES FROM RELATED GENERA
(OROBANCHACEAE)**

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ABSTRACT

A listing is provided of unpublished, informal herbarium names associated with the genus *Castilleja* and synonymous names from the genera *Bartsia*, *Euchroma*, and *Orthocarpus*. This list may prove useful to herbarium personnel and botanical specialists, especially in the determination of the validity of herbarium specimens originally annotated as nomenclatural types.

This paper is intended to provide a reasonably comprehensive list of unpublished, informal, and invalid names associated with the genus *Castilleja* Mutis found as original labels or annotations on specimen sheets in a wide variety of herbaria. Many of these names are found on sheets in multiple herbaria, while others are rarely encountered or found only in a single herbarium. Also included are names originally assigned to other genera, including *Bartsia* L., *Euchroma* Nutt., and *Orthocarpus* Nutt., but whose validly published and ultimately accepted names were subsequently moved to *Castilleja*. This list is intended to assist in the proper identification and disposition of these sheets by herbarium personnel and others wishing to properly identify or sort for storage the large number of accepted species in *Castilleja*. The list should also prove useful in the verification of potential type specimens, as many of the names listed below were originally intended as new species but were never published by their authors or were eventually published under different names. Also included are some names only published as *nomina subnuda* and which are occasionally seen on herbarium sheets, especially those collected by T. Nuttall and listed in synonymy by A. Gray (1862). Most of Nuttall's applicable herbarium names were annotated for inclusion in his genus *Euchroma*. At the time of its publication, Nuttall (1818) included only two species in *Euchroma*. The subsequent herbarium names were evidently intended for inclusion therein but were never validly published. Synonymy for these names should prove useful in the annotation of sheets collected by Nuttall and in clarifying their status as potential type collections.

The publication of any name provided in the present list is in no way intended to result in its effective publication as a nomenclatural or taxonomic entity. The synonymies listed here are based only on herbarium specimens observed by the author for this study. It is possible that a small number of these names were applied to specimens of more than one validly published and accepted species, though I have not seen any cases of this to date, except as noted in the list below. It is also crucial to note that this paper makes no attempt to provide a full synonymy of validly published names in *Castilleja*. Such a synonymy is in preparation and will be presented in a future paper.

This list was compiled during my review and annotation of over 30,000 herbarium sheets of *Castilleja* and related genera, including over 2,000 type sheets of nomenclatural significance, from the following herbaria and a number of additional smaller, agency-related and private collections: ALA, ARIZ, ASC, ASU, BKL, BM, BR, BRIT, CM, CAN, CAS, CGE, CIIDIR, COLO, CPUN, DES, DS, DUKE, E, ENCB, F, G, GH, HAL, HAO, HU, HUT, IA, IA-ISC, ID, IEB, ILL, K, KANU, LIV, LY-BON, LY-GAN, LINN, MICH, MIN, MO, MEXU, MONT, MSC, MT, MW, NA, ND,

NDG, NMC, NO, NY, OKLA, OSC, OSC-ORE, OSC-WILLU, P, PH, RENO, RM, RSA, RSA-POM, S, SD, SJNM, TEX/LL, TUR, UC/JEPS, U, UBC, UCR, UNM, US, USF, UT, UTC, UVSC, V, UVIC, VT, WIS, WS, WTU, YU, Z, and ZEA.

In the following list, the unpublished, synonymous name is given first, along with the name of the person providing that annotated identification, using standard abbreviations where appropriate. The equivalent, validly published, synonymous name follows, along with the author's name. The list is arranged in alphabetical order by unpublished species name. In a few cases, I could not determine the precise identity of the specimen, and this is noted in the listing. The accepted names are determined in accordance with my continuing studies in *Castilleja* and match those found in my publications, including the forthcoming treatment of *Castilleja* in the Flora of North America, Vol. 17. Any corrections and/or emendation to this list would be appreciated by the author.

- Castilleja affinis* Hook. & Arn. var. *californica* (Abrams) Bacig. = *Castilleja affinis* Hook. & Arn.
var. *affinis*
- Castilleja alba* Pennell = *Castilleja mexicana* (Hemsl.) A. Gray
- Castilleja alvarensis* Pennell = *Castilleja glandulosa* Greenm.
- Castilleja arctica* Kryl. & Serg. subsp. *ussensis* Rebr. = *Castilleja arctica* Kryl. & Serg.
- Castilleja arvensis* Schltld. & Cham. var. *minor* Conzatti = *Castilleja arvensis* Schltld. & Cham.
- Castilleja atrolabiata* Pennell = *Castilleja occidentalis* Torr.
- Castilleja attenuata* Pennell = *Castilleja integrifolia* L.f. var. *chiapensis* (Brandege) J.M. Egger
- Castilleja bajacalifornica* Moran = *Castilleja lanata* A. Gray
- Castilleja bipinnata* DC. = *Castilleja gracilis* Benth.
- Castilleja bipinnata* M. Ownbey = *Castilleja chromosa* A. Nelson
- Castilleja brachyloba* Piper = *Castilleja brevilibata* Piper
- Castilleja breedlovei* Chuang & Heckard = *Castilleja filiflora* Nesom
- Castilleja brevicalyx* C.H. Harvey = *Castilleja tenuiflora* Benth. var. *tenuiflora*
- Castilleja bryantii* Brandege subsp. *insularis* Moran = *Castilleja socorrensis* Moran
- Castilleja caustrina* Pennell = *Castilleja nervata* Eastw.
- Castilleja chlorantha* Pennell = *Castilleja mexicana* (Hemsl.) A. Gray
- Castilleja chromosa* A. Nelson f. *dubia* (A. Nelson) M. Ownbey = *Castilleja angustifolia* Nutt. var.
dubia A. Nelson
- Castilleja chromosa* A. Nelson var. *dubia* (A. Nelson) Pennell = *Castilleja angustifolia* Nutt. var.
dubia A. Nelson
- Castilleja cinerula* Pennell = *Castilleja peckiana* Pennell
- Castilleja cinerula macrodonta* Pennell = *Castilleja peckiana* Pennell
- Castilleja citrescens* Pennell = *Castilleja angustata* (B.L. Rob. & Seaton) Eastw.
- Castilleja confusa* Greene var. *pubens* A. Nelson & Macbr. = *Castilleja miniata* Douglas ex Hook.
var. *miniata*
- Castilleja cuneatus* Nutt. = *Castilleja affinis* Hook. & Arn. var. *affinis*
- Castilleja davisiana* Pennell = *Castilleja rigida* Eastw.
- Castilleja digitalis* DC. = *Castilleja scorzonerifolia* Kunth
- Castilleja diversicolor* Pennell = *Castilleja miniata* Douglas ex Hook. var. *miniata*
- Castilleja elatior* Piper = *Castilleja elata* Piper
- Castilleja exerta* (or) *exserta* Eastw. = *Castilleja subinclusa* Greene var. *jepsonii* (Bacig. & Heckard)
J.M. Egger
- Castilleja exsertiflora* Pennell = *Castilleja sessiliflora* Pursh, color form found in Arizona and New
Mexico
- Castilleja fallax* Pennell = *Castilleja elata* Piper
- Castilleja fernaldiana* Pennell = *Castilleja hispida* Benth. var. *acuta* (Pennell) M. Ownbey
- Castilleja flammea* Pennell = *Castilleja glandulosa* Eastw., undescribed variety

- Castilleja floccosa* A. Heller = *Castilleja ambigua* Hook. & Arn. var. *ambigua*
Castilleja folidora Hook. & Arn. = *Castilleja foliolosa* Hook. & Arn.
Castilleja fissifolia L.f. subsp. *fruticosa* ([incor.] Wedd.) Melch. f. *pygmaea* Cuatrec. = *Castilleja nubigena* Kunth
Castilleja fissifolia L.f. var. *junculosa* G. Mandon = *Castilleja nubigena* Kunth
Castilleja flavifasciatus G.L. Nesom = *Castilleja jiquilpana* Nesom
Castilleja fulgens Nutt. = *C. linariifolia* Benth.
Castilleja fulva Pennell, not Pennell 1934 = *Castilleja tenuiflora* Benth. var. *xylorrhiza* (Eastw.) Nesom
Castilleja gibba Pennell = *Castilleja pallescens* (A. Gray) Greenm. var. *pallescens*, alpine form
Castilleja glandulosa Brandegees = *Castilleja martinii* Abrams var. *clokeyi* (Pennell) N.H. Holmgren
Castilleja glutinosa Pennell = *Castilleja glandulifera* Pennell
Castilleja grenadina Pennell = *Castilleja tenuiflora* Benth. var. *tenuiflora*
Castilleja guadalupensis Pennell, not Brandegees 1903 = *Castilleja tenuiflora* Benth. var. *xylorrhiza* (Eastw.) Nesom
Castilleja holobracteata Pennell = *Castilleja nervata* Eastw. (or) *Castilleja rigida* Eastw.
Castilleja incana Pennell = *Castilleja galehintoniae* Nesom
Castilleja integra A. Gray f. *flavescens* Pennell = *Castilleja integra* A. Gray (or) *Castilleja kaibabensis* N.H. Holmgren
Castilleja juniperina Pennell = *Castilleja galehintoniae* Nesom
Castilleja kearneyi Pennell = *Castilleja mogollonica* Pennell
Castilleja lanatoides Pennell = *Castilleja lanata* A. Gray
Castilleja lanceolata Dombey = *Castilleja arvensis* Schlttdl. & Cham.
Castilleja linearis Pennell (not Rydb. 1901) = *Castilleja virgata* (Wedd.) Edwin
Castilleja lithospermoides Kunth var. *lutea* (S. Wats.) Pringle = *Castilleja nervata* Eastw.
Castilleja livermorensis M.W. Lockwood, (published in thesis form only, M.S. Thesis, Sul Ross St. Univ., 1991.) = *Castilleja integra* A. Gray, "elongata" form
Castilleja macrodonta Pennell = *Castilleja peckiana* Pennell
Castilleja microphylla Benth. = *Castilleja tenuiflora* Benth. var. *tenuiflora*
Castilleja miniata Douglas ex Hook. f. *trifida* Pennell = *Castilleja miniata* Douglas ex Hook. var. *miniata*
Castilleja miniata Douglas ex Hook. f. *pubescens* Pennell = *Castilleja miniata* Douglas ex Hook. var. *miniata*
Castilleja mulickii Pennell = *Castilleja nivea* Pennell & M. Ownbey
Castilleja ochocoensis N.H. Holmgren = *Castilleja rhexiifolia* Rydb.
Castilleja occidentalis Torr. [subsp.?] *intermedia* Pennell = *Castilleja occidentalis* Torr.
Castilleja ortegae Standl. subsp. *pteroaulon* (N.H. Holmgren) Chuang = *Castilleja pterocaulon* N.H. Holmgren
Castilleja pallescens (Nutt.) Greenm. (sic) var. *oresbia* (Greenm.) Ownbey = *Castilleja oresbia* Greenm.
Castilleja paludicola A. Heller = *Castilleja minor* (A. Gray) A. Gray var. *spiralis* (Jeps.) J.M. Egger
Castilleja palustris Pennell = *Castilleja saltensis* Eastw.
Castilleja parryi Pennell = *Castilleja pallescens* (A. Gray) Greenm. var. *pallescens*
Castilleja pilosa (S. Watson) Rydb. var. *jussellii* (Eastw.) Bacig. = *Castilleja pilosa* (S. Wats.) Rydb. var. *pilosa*
Castilleja pinnatifida DC. = *Castilleja gracilis* Benth.
Castilleja pinnatifida Humboldt = *Castilleja fissifolia* L.f.
Castilleja pinnatifida Pennell = *Castilleja patriotica* Fern.
Castilleja pinnatiflora Pennell = *Castilleja patriotica* Fern.
Castilleja practica Pennell = *C. nelsonii* Eastw.
Castilleja prostrata Dombey = *Castilleja pumila* (Benth.) Wedd. ex F.L. Herrera

- Castilleja retroflexifolia* Pennell = *Castilleja tenuiflora* Benth. var. *tenuiflora*
Castilleja richardsonii Torr. (?) = *Castilleja foliolosa* Hook. & Arn.
Castilleja rubra Pennell = (identity of specimen impossible to determine, but the name is unpublished)
Castilleja salina Pennell = *Castilleja sphaerostigma* Eastw.
Castilleja sanguinea Pennell = *Castilleja perelegans* Nesom
Castilleja saxicola Piper = *Castilleja rupicola* Piper
Castilleja schaffneri Hemsley var. *cinerea* Eastw. = *Castilleja moranensis* Kunth var. *cinerascens* (Eastw.) J.M. Egger
Castilleja septentrionalis Lindl. var. *rhexiifolia* (Rydb.) J.M.Egger = *Castilleja rhexiifolia* Rydb.
Castilleja shinnersiana V.L. Cory = *Castilleja indivisa* Engelm.
Castilleja subulata Sessé & Moç. = *Castilleja integrifolia* L.f.
Castilleja stokesii (or) *stokesiae* Brandegee = *Castilleja chromosa* A. Nelson
Castilleja tenuifolia M. Martens & Galeotti subsp. *aurea* (B.L. Rob. & Greenm.) Chuang = *Castilleja aurea* B.L. Rob. & Greenm.
Castilleja tricolor Pennell = *Castilleja nervata* Eastw.
Castilleja turneri Nesom = *Castilleja rigida* Eastw.
Castilleja undulata (Pennell?) = *Castilleja arvensis* Schltld. & Cham.
Castilleja undulata Pennell [subsp.?] *glandulosa* Pennell = *Castilleja applegatei* Fern. var. *pinetorum* (Fern.) N.H. Holmgren
Castilleja vanegatis Pennell = *Castilleja galehintoniae* Nesom
Castilleja viscida Rydb. [subsp.?] *galeata* Pennell = *Castilleja miniata* Douglas ex Hook. var. *miniata* (or) *C. applegatei* Fern. var. *viscida* (Rydb.) M. Ownbey
Castilleja vulgaris I. Holmgren = *Castilleja fissifolia* L.f.
Castilleja wascoensis Pennell = *Castilleja xanthotricha* Pennell
- Bartsia pallida* (L.) Spreng. var. *latifolia* Nutt. = *Castilleja unalaschensis* (Cham. & Schltld.) Malte
- Euchroma albida* Nutt. = *Castilleja attenuata* (Benth.) T.I Chuang & Heckard
Euchroma flava Nutt. = *Castilleja cusickii* Greenm.
Euchroma integrifolia Nutt. = *Castilleja miniata* Douglas ex Hook. var. *miniata*
Euchroma lanceolata Nutt. = *Castilleja minor* (A. Gray) A. Gray var. *exilis* (A. Nelson) J.M. Egger
Euchroma laciniata Nutt. = *Castilleja hispida* Benth. var. *hispida*
Euchroma lutescens Nutt. = *Castilleja cusickii* Greenm.
Euchroma macrocalyx Nutt. = *Castilleja angustifolia* (Nutt.) G. Don var. *angustifolia*
Euchroma pallescens Nutt. = *Castilleja pallescens* (A. Gray) Greenm. var. *pallescens*
Euchroma simplex Nutt. = *Castilleja minor* (A. Gray) A. Gray var. *exilis* (A. Nelson) J.M. Egger
Euchroma villosa Nutt. = *Castilleja angustifolia* (Nutt.) G. Don var. *angustifolia*
Euchroma viscosa Nutt. = *Castilleja applegatei* Fernald var. *viscida* (Rydb.) M. Ownbey
- Orthocarpus castillejoides* [subsp.?] *purpureotincta* Pennell = *Castilleja ambigua* Hook. & Arn.
Orthocarpus chachapoyensis Pennell = *Castilleja peruviana* Chuang & Heckard
Orthocarpus chlorotica Piper = *Castilleja chlorotica* Piper
Orthocarpus hispidus Benth. var. *tenuis* (A. Heller) Macbr. & Payson = *Castilleja tenuis* A. Heller
Orthocarpus maculatus A. Heller, not Eastw. 1905 = *Castilleja exserta* (A. Heller) Chuang & Heckard x *Castilleja brevistyla* (Hoover) Chuang & Heckard
Orthocarpus orientalis Pennell = *Castilleja laciniata* Hook. & Arn.
Orthocarpus peruvianus Pennell = *Castilleja profunda* Chuang & Heckard
- Philypan californica* Hartweg = *Castilleja ambigua* Hook. & Arn.

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LITERATURE CITED

- Gray, A. 1862. Revision of the genus *Castilleja*. Amer. J. Sci. Arts, ser. 2, 34: 335–339.
Nuttall, T. 1818. The genera of North American plants, and a catalogue of the species to the year 1817. Philadelphia, D. Heartt.