
Validation of the Name *Veratrum hybridum* (Liliales, Melanthiaceae): The Correct Name for Crisped Bunch-Flower

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ABSTRACT. Daniel B. Ward's recent assessment of species in *Flora Caroliniana* by Thomas Walter included the identification and neotypification of *Melanthium hybridum* Walter, a name that would now have apparent priority over the more commonly used synonyms for the crisped bunch-flower, *M. latifolium* Desr. in Lam. and *Veratrum latifolium* (Desr. in Lam.) Zomlefer (Melanthiaceae). The supported conservation of the name *Veratrum* L. over *Melanthium* L. at the Melbourne International Botanical Congress necessitates the transfer of *M. hybridum* to *Veratrum*. However, another name, *V. hybridum* J. H. Zimmerman, lacked reference to the basionym and was not validly published. Herein, a discussion of these nomenclatural issues includes the validation of the name *V. hybridum* (Walter) Zimmerman ex Zomlefer.

Key words: Liliales, Melanthiaceae, Melanthieae, *Melanthium*, *Veratrum*.

The crisped bunch-flower, commonly known as *Melanthium latifolium* Desr. in Lam. (e.g., Bodkin & Utech, 2002) or *Veratrum latifolium* (Desr. in Lam.) Zomlefer (e.g., Zomlefer, 1997), is a perennial species inhabiting well-drained wooded slopes (300–1700 m) mainly in the eastern United States, from Connecticut to southeastern New York south to South Carolina, Georgia, and eastern Tennessee and is disjunct in north-central Arkansas (Zimmerman, 1958; Bodkin, 1978). Verifying the correct name for this widespread plant has immediate relevance for many contemporary floras of this region (e.g., Weakley, 2011). Diagnostic morphology of the perianth, pertinent to the discussion of the species name (below), includes the clawed base and the expanded orbicular tepal blades with strongly undulate margins (Zomlefer, 1997). The base of each tepal has a prominent pair of yellowish green perigonal glands, a characteristic of many species of tribe Melanthieae (Zomlefer et al., 2003, 2006).

Ward (2008, 2010) presented compelling evidence that this species was first described by Thomas Walter (1788) as *Melanthium hybridum* Walter in *Flora Caroliniana*. Pursh (1813) was the first botanist to recognize the apparent priority of Walter's name for the broad-petaled *Melanthium* of the southern

Appalachians and cited the later names, *M. latifolium* (Lamarck, 1797) and *M. racemosum* Michx. (Michaux, 1803), as synonyms. Although several other prominent botanists (e.g., Elliott, 1817; Nuttall, 1818; Chapman, 1860; Gleason, 1952; Radford et al., 1968; Strausbaugh & Core, 1970) also adopted Walter's name, certain issues concerning the taxonomy of this name require clarification before wider contemporary acceptance is justified: Walter did not have a herbarium, and the name *M. hybridum* has often been considered misapplied, due to presumed ambiguities in his brief Latin diagnosis, as detailed by the monographer Bodkin (Bodkin, 1978, 1979; Bodkin & Utech, 2002). Recently, Ward (2008) resolved the typification of many of the names assigned to American plants by Walter, including the neotypification of *M. hybridum*. Further, Walter's diagnosis of *M. hybridum*, which included a description of orbicular petals with undulate margins ("plicato-undulatis," Walter, 1788: 125), clearly referred to the unique tepals of the crisped bunch-flower (Fernald & Schubert, 1948; Ward, 2010).

However, Ward (2008, 2010) did not address Bodkin's (1978) main obstacle to matching Walter's diagnosis to this particular species: the adjective *immaculatis* (unspotted) for the glandular condition of the tepals (i.e., lacking glands), which does not accurately portray the prominent perigonal nectaries of the crisped bunch-flower. Bodkin's interpretation is evidently based on the handwritten annotations of several botanists (e.g., James MacBride and Charles Sprague Sargent; see Ward, 2010) in a reprint edition of *Flora Caroliniana* (Walter, 1946). However, the term used in the original published diagnosis (Walter, 1788: 125) is actually "*mmaculatis*" [sic], a typographical error for either [*i*]mmaculatis (unspotted) or maculatis (spotted). In the facsimile edition (Walter, 1946: 125), the printed word "*mmaculatis*" has been overwritten with one "*m*" crossed out and an "*i*" added to the beginning of the word (cf. Fig. 1). Fernald and Schubert (1948: 193) noted "*mmaculatis*" parenthetically as an "evident misprint," without further explanation. Considering his accurate description of the unique tepal shape, Walter's original intent was likely spotted (maculatis,

157. MELANTHIUM. Cor. 6-petala persis-
tentia, colorem mutantia, Capsula
apice divaricatae.

• **Petalis unguiculatis imprimis albis demum ob-**
scuro-rubris feminibus semi-ovatis.

virginicum petalis planis maculis duabus flavis

1. notatis, floribus plerumque herma-
phroditis. *Art. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000*

hybridum 2. petalis plicato-undulatis immaculatis,
floribus masculis et foemineis mixtis.

monoicum 3. petalis planis, maculis 2 luteis ; flo-
ribus inferioribus masculis majo-
ribus, paniculis lateralibus ; supe-
rioribus foemineis racemo terminali.

Figure 1. Description of *Melanthium hybridum* in the facsimile edition of *Flora Caroliniana* (Walter, 1946: 125), showing handwritten annotations by various owners of the original edition of the book (Walter, 1788: 125). Under the entry for this species, the misprinted term “mmaculatis” has been overwritten with one “m” crossed out and an “i” added.

with glands) and not the adjective modified by owner(s) of an original copy of *Flora Caroliniana*.

The establishment of *Melanthium hybridum* as the correct name for the crisped bunch-flower generates an unresolved nomenclatural issue, relative to the circumscription of *Melanthium* L. (two to four species) versus *Veratrum* L. (17 to 45 species). The two genera have a complex taxonomic and nomenclatural history, and *Veratrum* has been variously defined with *Melanthium* submerged totally or in part (cf. summaries in Zimmerman, 1958; Bodkin, 1978; Zomlefer et al., 2003). Recent molecular analyses show that recognition of the traditional *Melanthium* makes *Veratrum* paraphyletic, supporting a recommendation to submerge *Melanthium* within *Veratrum* s.l. (Zomlefer et al., 2003). However, although these two Linnaean generic names have equal priority (Linnaeus, 1753), Thunberg (1797) first cited *Veratrum* as the synonym of *Melanthium*, thereby establishing the priority of *Melanthium* over *Veratrum* (Art. 11.5; McNeill et al., 2012). Therefore, combinations within *Veratrum* based on *Melanthium* are valid and legitimate, but are incorrect.

A proposal (Zomlefer et al., 2010) to continue the widespread usage of *Veratrum*, which would best serve

stability of nomenclature (Art. 14.2, McNeill et al., 2012), was approved by the Nomenclature Committee for Vascular Plants (Barrie, 2011; Brummitt, 2011; McNeill et al., 2011). The voted acceptance of this proposal at the Melbourne International Botanical Congress establishes the name *Veratrum* as now conserved over *Melanthium* (Barrie, 2011; Brummitt, 2011; McNeill et al., 2012). This necessitates the transfer of the name *Melanthium hybridum* to *Veratrum*, as previously attempted by the monographer Zimmerman (1958), who accepted Walter's name and circumscribed a broadly defined, monophyletic *Veratrum*. However, his recombination (Kupchan et al., 1961: 11) was not validly published (Gandhi, 2007, online), because the reference to the basionym is incomplete, lacking a citation of publication, page, and date (Art. 33.4, McNeill et al., 2012). The complete reference for this new combination is provided below, giving James Hall Zimmerman (1924–1992) credit for his studies on *Veratrum* and including recognition of the priority of Walter's name for the crisped bunch-flower (Zimmerman, 1958; Kupchan et al., 1961).

Veratrum hybridum (Walter) J. H. Zimmerman ex Zomlefer, comb. nov. Basionym: *Melanthium hybridum* Walter, Fl. Carol. 125. 1788. *Lei-*

- manthium hybridum* (Walter) Sweet, Hort. Brit. 429. 1826. *Zigadenus hybridus* (Walter) Endl. ex Kunth, Enum. Pl. 4: 196. 1843. TYPE: U.S.A. South Carolina: Greenville Co., W of Marietta, 12 Sep. 1989, J. B. Nelson 8431 (neotype, designated by Ward [2008: 1281], USCH 49759 [st.], USCH 49760 [fl./fr.]).
- Melanthium latifolium* Desr. in Lam., Encycl. 4: 25. 1797, syn. nov. *Veratrum latifolium* (Desr. in Lam.) Zomlefer, Harvard Pap. Bot. 2(2): 161. 1997. TYPE: U.S.A. s.d., Anonymous [presumed J. Frasier] s.n. (holotype, P [barcode] P00562958 not seen, P-00562598 image, P [microfiche] 654/18 at GA).
- Melanthium racemosum* Michx., Fl. Bor.-Amer. 2: 251. 1803. TYPE: U.S.A. Carolina [North Carolina]: Yellow Mtn. [Mt. Mitchell], 23 June 1789, A. Michaux s.n. (holotype, P not seen, P [microfiche] 126/19 at GA; isotype, P [barcode] P00730362 not seen, P-00730362 image).
- Acknowledgments.** I thank Daniel B. Ward (FLAS) for correspondence and lively conversations concerning his Thomas Walter Typification Project. I am very grateful also to Kanchi N. Gandhi (GH), who generously provided nomenclatural expertise and thorough constructive criticism of this manuscript. Alan Weakley (NCU) prodded me to validate this *Veratrum* transfer; John Nelson (USCH) sent digital images of the *Melanthium hybridum* neotype; Kent D. Perkins and Walter S. Judd (FLAS) assisted with some references; and Victoria Hollowell (MO) carefully edited the text.
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Zomlefer, Wendy B. 2012. "Validation of the Name *Veratrum hybridum* (Liliales, Melanthiaceae): The Correct Name for Crisped Bunch-Flower." *Novon a journal of botanical nomenclature from the Missouri Botanical Garden* 22(1), 125–127. <https://doi.org/10.3417/2011061>.

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