




Correct authorship of *Corydalis yanhusuo* (Papaveraceae)

KUO-FANG CHUNG^{1,2,3*} & PEI-YI CHEN^{2,4}

¹Biodiversity Research Museum and Herbarium (HAST), Biodiversity Research Center, Academia Sinica, Taipei 115201, Taiwan

²School of Forestry and Resource Conservation, National Taiwan University, Taipei, 106319, Taiwan

³ bochung@as.edu.tw;  <https://orcid.org/0000-0003-3628-2567>

⁴ hephaestus0219@gmail.com

*Author for correspondence

Yanhusuo (延胡索), also known as *Corydalis Rhizoma*, is a traditional Chinese medicine derived from the dried tuber of *Corydalis yanhusuo*. Yanhusuo is widely valued for its analgesic, qi-regulating, and blood-invigorating properties (Su & Wu 1985, Wu 1999, Taiwan Herbal Pharmacopeia 4th Edition Committee 2022). Culturally, Yanhusuo holds special significance as one of the traditional “Zhebawei (浙八味),” a set of eight dao-di (regionally authentic) medicinal materials long cultivated in Zhejiang Province and frequently cited in classical prescriptions (Han *et al.* 2024). Its longstanding cultural and medicinal importance underscores the importance of stable and accurate scientific nomenclature.

While verifying names used in the Taiwan Herbal Pharmacopeia 4th Edition English Version (THP IV; Taiwan Herbal Pharmacopeia 4th Edition Committee 2022)—Taiwan’s official standard for the quality control of traditional Chinese medicinal materials—against Flora Reipublicae Popularis Sinicae (Wu 1999; FRPS), Flora of China (Zhang *et al.* 2008; FOC), and major plant databases such as Plant Plus of China (iPlant 2025), International Plant Names Index (IPNI 2025), Medicinal Plant Names Services Portal (MPNS 2025), Plants of the World Online (POWO 2025), Tropicos (2025), The World Flora Online (WFO 2025), and Global Biodiversity Information Facility (GBIF 2025), we noticed inconsistencies in the authorship of *Corydalis yanhusuo*. The authorship appears variously as ‘W.T.Wang ex Z.Y.Su & C.Y.Wu’ (FRPS, Tropicos 2025), ‘(Y.H.Chou & C.C.Hsu) W.T.Wang ex Z.Y.Su & C.Y.Wu’ (FOC, iPlant 2025), ‘(Y.H.Chou & Chun C.Hsu) W.T.Wang ex Z.Y.Su & C.Y.Wu’ (MPNS 2025, POWO 2025, WFO 2025), and ‘W.T.Wang’ (IPNI 2025, THP IV). In GBIF (2025), a search of *Corydalis yanhusuo* resulted in two authorships: ‘W.T.Wang ex Z.Y.Su & C.Y.Wu’ and ‘(Y.H.Chou & Chun C.Hsu) W.T.Wang ex Z.Y.Su & C.Y.Wu,’ with the latter tagged in “Issues” with “Conflicting basionym combination.” Given that *Corydalis yanhusuo* is the source of an important traditional Chinese medicine, we conducted a detailed examination of the original protologues and consulted International Code of Nomenclature for algae, fungi, and plants (Turland *et al.* 2025) to clarify the correct authorship.

1. *Corydalis yanhusuo* W.T.Wang, Iconogr. Cormphyt. Sin. 2: 12, pl. 1754. 1972

Although Yanhusuo has been used for more than 1,200 years (Xi *et al.* 1995), its botanical identity remained unsettled well into the twentieth century. The epithet *yanhusuo* was first introduced to *Corydalis* by Wen-Tsai Wang in Iconographia Cormophytorum Sinicorum (Beijing Institute of Botany Chinese Academy of Sciences 1972) with an illustration and description in Chinese. However, this 1972 usage “*Corydalis yanhusuo* W. T. Wang” lacks a Latin diagnosis, a type designation, and an explicit statement of taxonomic intent. It therefore has no nomenclatural standing according to Arts 38–40 of the Code (Turland *et al.* 2025).

2. *Corydalis turtschaninovii* f. *yanhusuo* Y.H.Chou & Chun C.Hsu, Acta Phytotax. Sin. 15(2): 82. 1977

Based on morphology and thin-layer chromatographic profiles of total alkaloids, Chou & Hsü (1977) treated Yanhusuo as a forma of *Corydalis turtschaninovii* Besser (1834: 6). Chou & Hsü (1977) cited *C. yanhusuo* W.T.Wang as a “*nom. seminud.*” and provided a Latin diagnosis, a type designation from cultivated material in Zhejiang, and the indication of “f. nov.,” thereby fulfilling the requirements for valid publication at infraspecific rank under the Code (Turland *et al.* 2025). “*Corydalis turtschaninovii* Bess. f. *yanhusuo* Y. H. Chou et C. C. Hsü” (Chou & Hsü 1977: 82) is therefore the first validly published name associated with Yanhusuo, albeit at infraspecific rank.

The co-author Hsü in Chou & Hsü (1977), whose full spelling is Chun-Chuan Hsü (许春泉), has been abbreviated inconsistently in the literature, appearing as “C.C.Hsü” (Chou & Hsü 1977: 82, Zhu 1989: 442, Wu 1999: 475) or as variant forms such as “C.Q.Hsu” (Su & Wu 1985: 270) and “C.C.Hsu” (Zhang *et al.* 2008: 319). However, C.C.Hsu is the standard abbreviation for Chien-Chang Hsu (許建昌) in both IPNI (2025) and Tropicos (2025), and therefore cannot be unambiguously applied to Chun-Chuan Hsü. To avoid confusion between these two authors, we follow Tropicos (2025)

in using the disambiguated abbreviation “Chun C.Hsu” for Chun-Chuan Hsü; this usage has also been adopted by MPNS (2025), POWO (2025), and WFO (2025), although formal standardization of this abbreviation remains unresolved.

3. *Corydalis yanhusuo* W.T.Wang ex Z.Y.Su & C.Y.Wu, *Acta Bot. Yunnan.* 7(3): 269, pl. 6. 1985

In their treatment, Su & Wu (1985) cited ‘*Corydalis yanhusuo* W.T.Wang, *Iconogr. Cormphyt. Sin.* 2: 12, pl. 1754. 1972’ as *nom. nud.* and validly published ‘*Corydalis yanhusuo* W.T.Wang’ as *sp. nov.*, designating material from Chu Xian (滁縣), Anhui Province as the type and providing a Latin diagnosis. Although the 1972 usage of the name *Corydalis yanhusuo* W.T.Wang was accompanied by an illustration and a description in Chinese, Su & Wu (1985) did not indicate that Wang provided the Latin diagnosis or that such a contribution was unequivocally associated with him in the act of valid publication. According to Arts. 46.2 and 46.5 of the *Code* (Turland *et al.* 2025), the authorship is to be cited as *Corydalis yanhusuo* W.T.Wang ex Z.Y.Su & C.Y.Wu (e.g. Wu 1999: 475, Tropicos 2025), or alternatively as Z.Y.Su & C.Y.Wu.

4. *Corydalis ternata* f. *yanhusuo* (Y.H.Chou & Chun C.Hsu) Y.C.Chu, *Pl. Medic. Chinae Bor.-orient.* (ed. Zhu You Chang) 442. 1989

Zhu (1989) treated that *Yanhusuo* represents a cultivar derived historically from *Corydalis ternata* (Nakai 1912: e94) Nakai (1914: 29) and consequently made the combination *Corydalis ternata* “f. *yanhusuo* (Y. H. Chou et C. C. Hsü) Y. C. Chu *comb. nov.*” in Zhu (1989: 442). Although Zhu (1989) treated the 1972 name as a *nom. nud.*, he did not cite Su & Wu (1985)’s name.

5. *Corydalis yanhusuo* (Y.H.Chou & Chun C.Hsu) W.T.Wang ex Z.Y.Su & C.Y.Wu, a bibliographic error in Zhang *et al.* (2008: 319)

In *Flora of China*, Zhang *et al.* (2008: 319) accepted *Yanhusuo* at species rank but cited the authorship as *Corydalis yanhusuo* “(Y.H.Chou & C.C.Hsu) W.T.Wang ex Z.Y.Su & C.Y.Wu”, treating “*C. turtschaninovii* f. *yanhusuo* Y.H.Chou & Chun C.Hsu (1977)” as a basionym and listing “*C. ternata* (Nakai) Nakai f. *yanhusuo* (Y. H. Chou & C. C. Hsu) Y. C. Zhu” as a synonym. This interpretation is incorrect. Although the forma and species share the epithet *yanhusuo*, they are not homotypic, having been described from different types, and priority does not operate across ranks (Art. 11.2; Turland *et al.* 2025). Crucially, Su & Wu (1985: 269–270) explicitly published *Corydalis yanhusuo* as *sp. nov.* with a newly designated Anhui type, and placed *C. turtschaninovii* f. *yanhusuo* Y.H.Chou & Chun C.Hsu, a forma based on a Zhejiang material, in synonymy, not as a basionym. The parenthetical authorship adopted in *Flora of China* and subsequently followed by iPlant (2025), POWO (2025), WFO (2025), and MPNS (2025) therefore represents a bibliographic inconsistency, as also flagged in GBIF (2025), arising likely from conflation of the forma and species due to their identical epithet. In accordance with Arts. 7, 11.2, 46.2, and 46.5 of the *Code* (Turland *et al.* 2025), we recommend the name *Corydalis yanhusuo* W.T.Wang ex Z.Y.Su & C.Y.Wu when this taxon is treated as the species rank.

Taxonomy

Corydalis yanhusuo W.T.Wang ex Su & Wu (1985: 269). Type:—China. Anhui, Chu Xian, 14 April 1951, *JSBI 1514* [holotype NAS-00323329 (image!), isotypes PE-01901326 (image!), PE-01040936 (image!), PE-01040937 (image!), PE-01040938 (image!), PE-00934677 (image!), SHM-0017096 (image!)]].

Corydalis turtschaninovii f. *yanhusuo* Chou & Hsü (1977: 82). Type:—China. Zhejiang, Hongzhou (杭州), Longjuwu Clinical Trial Center (龙驹坞药物试验场), cultivated plant, *sine numero* (holotype SYPC, n.v.). ≡ *Corydalis ternata* f. *yanhusuo* (Chou & Hsü 1977: 82) Y.C.Chu in Zhu (1989: 442).

It should be noted that when this taxon is treated as a form, Y.H.Chou & Chun C.Hsu is the sole or part of the authority depending on under which species it is treated. The form was published by different authors and has a different type.

Acknowledgements

We thank Yu-Lan Huang for assistance in locating key historical references. This study was supported by Academia Sinica Center for Digital Culture (AS-ASDCD-114-106) and Forestry and Nature Conservation Agency, Minister of Agriculture, Executive Yuan, Taiwan (114-08.3-SF-23) to K.-F. Chung.

References

Beijing Institute of Botany Chinese Academy of Sciences (Ed.) (1972) *Iconographia cormophytorum sinicorum, Tomus II*. Science Press, Beijing, 1312 pp.

- Besser, W. (1834) Ueber die Flora des Baikals. *Beiblätter zur Flora oder allgemeinen botanischen Zeitung* 17: 1–30.
- Chou, Y.-H. & Hsü, C.-C. (1977) The nomenclature of Chinese drug Yanhusuo. *Acta Phytotaxonomica Sinica* 15: 81–83.
- GBIF (2025) *Global Biodiversity Information Facility*. GBIF Secretariat. Available from: <https://www.gbif.org/> (accessed 14 December 2025)
- Han, Y.-X., Xiao-Meng, L., Wang, J.-H., Chen, Y.-F., Zhou, K. & Peng, X. (2024) Systematic textual research of the application of the “Zhebawei” in classic famous prescriptions. *Chinese Journal of Modern Applied Pharmacy* 41: 1989–2001. <https://doi.org/10.13748/j.cnki.issn1007-7693.20241566>
- iPlant (2025) *Plant Plus of China*. Chinese Academy of Science. Available from: <https://www.iplant.cn/> (accessed 14 December 2025)
- IPNI (2025) *International Plant Names Index*. The Royal Botanic Gardens, Kew, Harvard University Herbaria & Libraries and Australian National Herbarium. Available from: <http://www.ipni.org> (accessed 14 December 2025)
- MPNS (2025) *Medicinal Plant Names Services Portal*. Royal Botanic Gardens, Kew. Available from: <https://mpns.science.kew.org/> (accessed 14 December 2025)
- Nakai, T. (1912) Notulæ ad Plantas Japoniæ et Koreæ. IV. *The Botanical Magazine* 26: en91–en105. https://doi.org/10.15281/jplantres1887.26.304_91
- Nakai, T. (1914) A new species of Yanhusuo. *The Botanical Magazine* 28: 28–29. https://doi.org/10.15281/jplantres1887.28.325_23
- POWO (2025) *Plants of the World Online*. Facilitated by the Royal Botanic Gardens, Kew. Available from: <http://www.plantsoftheworldonline.org/> (accessed 14 December 2025)
- Su, Z.-Y. & Wu, C.-Y. (1985) A study on the classification, distribution, evolutionary trends and uses of Chinese *Corydalis* subgen. *Capnites* DC. *Acta Botanica Yunnanica* 7: 253–276.
- Taiwan Herbal Pharmacopeia 4th Edition Committee (ed.) (2022) *Taiwan Herbal Pharmacopeia 4th Edition English Version*. Ministry Health and Welfare, Taiwan, R.O.C., Taipei, 484 pp. [<https://www.mohw.gov.tw/lp-3690-2.html>]
- Tropicos (2025) *Tropicos database*. Missouri Botanical Garden. Available from: <https://www.tropicos.org/home> (accessed 14 December 2025).
- Turland, N.J., Wiersema, J.H., Barrie, F.R., Gandhi, K.N., Gravendyck, J., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Klopfer, R.R., Knapp, S., Kusber, W.-H., Li, D.-Z., May, T.W., Monro, A.M., Prado, J., Price, M.J., Smith, G.F. & Zamora Señoret, J.C. (2025) *International Code of Nomenclature for algae, fungi, and plants (Madrid Code)*. University of Chicago Press, Chicago, 288 pp. <https://doi.org/10.7208/chicago/9780226839479.001.0001>
- WFO (2025) *The World Flora Online*. Available from: <https://www.worldfloraonline.org/> (accessed 14 December 2025)
- Wu, C.-Y. (1999) Papaveraceae. In: Wu, C.-Y. (ed.) *Flora Reipublicae Popularis Sinicae, Vol. 32*. Science Press, Beijing, pp. 1–483.
- Xi, J.-Q., Jing, L.-C., Xin, N.-X. & Bei, X.-F. (1995) Investigation of medicinal kinds and textual research on the traditional Chinese crude drug Yanhusuo (Rhizoma Corydalis). *Chinese Journal of Modern Applied Pharmacy* 12: 12–15.
- Zhang, M.-L., Su, Z.-Y. & Lidén, M. (2008) *Corydalis*. In: Wu, Z.-Y., Raven, P.H. & Hong, D.Y. (Eds.) *Flora of China, Vol. 7*. Science Press and Missouri Botanical Garden, Beijing and St. Louis, pp. 295–428.
- Zhu, Y.-C. (1989) *Plantae medicinales chinae boreali-orientalis*. Heilongjiang Science and Technology Publishing House, Harbin, 1300 pp.