

Between extinction and uncertainty: Nomenclature revision of genus *Dalea* L. (Papilionoideae, Fabaceae) in Cajamarca, Peru

Ivan Fernandez-De la Cruz^{1,2}, Javier Javier¹, Joaquina Albán-Castillo^{1,2}, Briggithe Melchor-Castro^{1,3,4}

¹ Department of Ethnobotany and Economic Botany, Museum of Natural History, Lima 15072, Peru

² Faculty of Biological Sciences, National University of San Marcos, Lima 15081, Peru

³ School of Biological Sciences, University of Edinburgh, Edinburgh EH9 3JW, The United Kingdom

⁴ Science Division, Royal Botanic Garden Edinburgh, Edinburgh EH3 5LR, The United Kingdom

INTRODUCTION & AIM

Dalea L. is the only genus from the Amorpheae tribe distributed in the Peruvian Andes, where most of its species are endemic and endangered. The centre of diversity is within the northern and central Andes mountain ranges converging with the Huancabamba Depression, a hotspot for cryptic plant diversity located in Cajamarca. Despite taxonomic studies conducted 40 years ago, morphological delimitations remain ambiguous due to phenotypic plasticity and the lack of type specimens, particularly among endemic taxa. **This study aimed to assess morphological differentiation and carry out a nomenclatural revision of *Dalea* L. specimens from the Cajamarcan Andes.**

METHOD

This study is based on a comprehensive revision of physical specimens from the herbaria USM, complemented by digitized records from F, NY, P, US, G, and MO. The morphological analysis of diagnostic characters (e.g., calyx, corolla, pubescence) followed standard botanical practices.

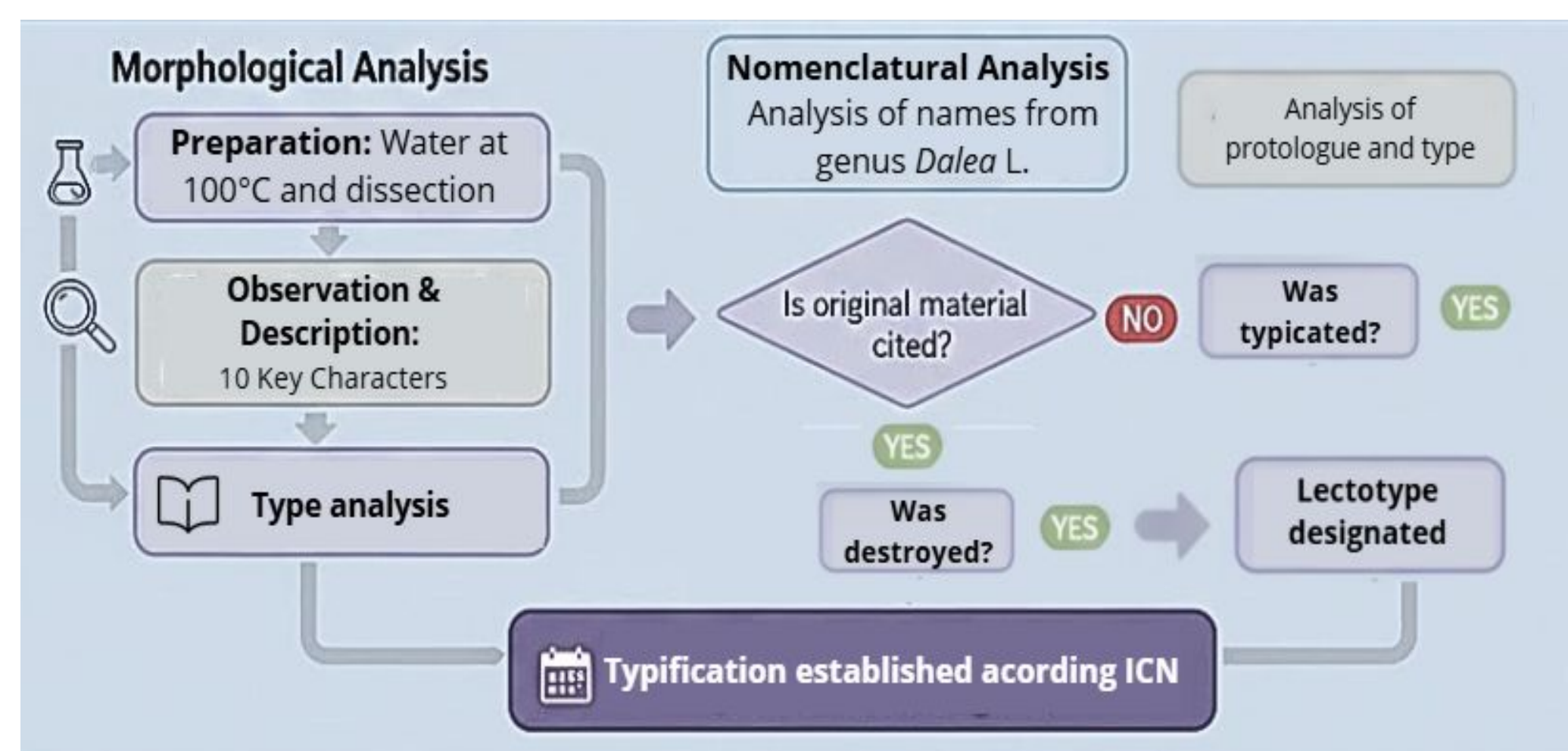


Figure 1. Taxonomic and nomenclatural treatment of the genus *Dalea* L.

The nomenclatural treatment involved verifying names and types through online databases (IPNI, POWO, Tropicos, BHL) and applying the International Code of Nomenclature, including typifications where necessary.

RESULTS & DISCUSSION

1. Nomenclatural and taxonomic findings

We identify 16 valid species of *Dalea* in the Cajamarca Andes, resolving the previous ambiguity (13 accepted species + 8 ambiguous varieties). The updated classification relies on consistent, diagnostic morphological characters (e.g. stipule type, calyx dentition relative to the tube, leaflet shape, glands and pubescence density).

2. Nomenclatural review:

Clarification of Illegitimate Names: The history of *D. carthagenensis* was clarified, identifying a pre-Linnaean illustration as the type.

Neotype: For *D. coerulea*, a neotype was designated to replace lost original material.

Lectotype: Stabilized the names for five species (e.g., *D. ayavacensis*) by linking them to a single, designated specimen.

Modern types: Species (e.g., *D. strobilacea*) have well-defined holotypes, providing a solid foundation for future studies.

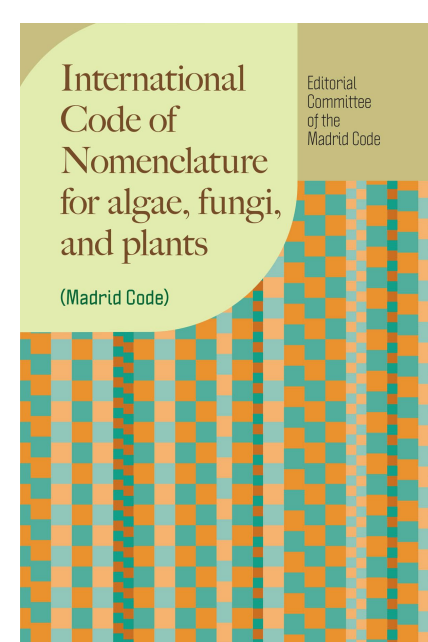


Figure 2. ICN 2025

2. Nomenclatural changes:

The taxonomic revision elevated three taxa to species level (*D. sericophylla* Ulbr., *D. cutervoana* Szyszyl., *D. microphylla* Ulbr.).

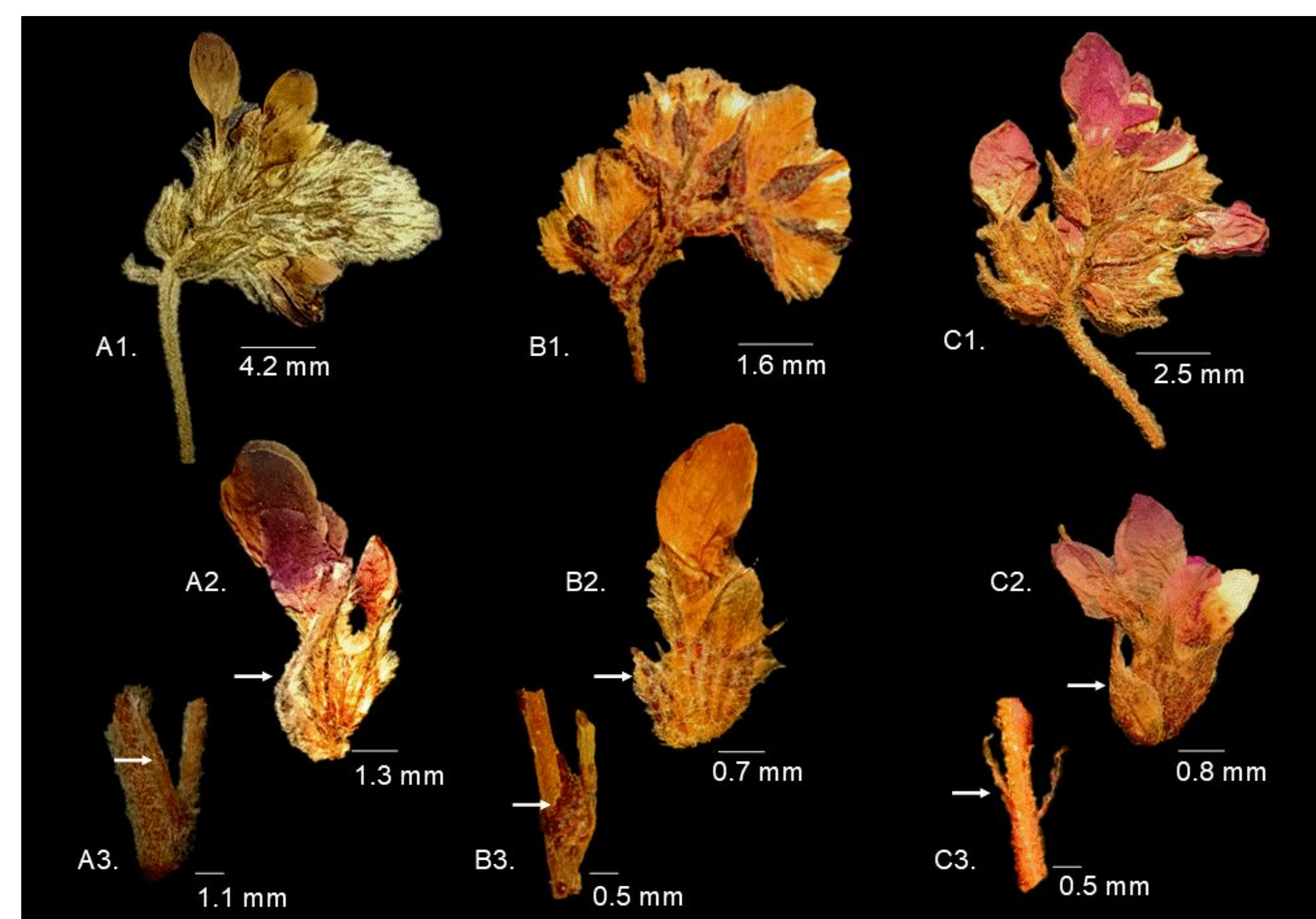


Figure 3. *D. sericophylla* (A1) Inflorescence, (A2) Flower and bract (A3) Stipule. *D. microphylla* (B1) Inflorescence, (B2) Flower and bract (B3) Stipule. *D. cutervoana* (C1) Inflorescence, (C2) Flower and bract (C3) Stipule.

3. Typifications:

Lectotypes were designated for *D. myriadenia* Ulbr., *D. weberbaueri* Ulbr. and *D. sericophylla* Ulbr. This action resolves nomenclatural uncertainty resulting from the destruction of their original Types, which were deposited at the Berlin Herbarium (B)



Figure 4. Lectotype: (A) *D. myriadenia*. (B) *D. sericophylla*. (C) *D. weberbaueri*.

CONCLUSION

This study identified **16 species** in Cajamarca, recognizing **3 new species** (*D. sericophylla*, *D. cutervoana*, *D. microphylla*) and stabilizing nomenclature via **lectotype designation** for *D. myriadenia*, *D. weberbaueri* and *D. sericophylla*.

FUTURE WORK / REFERENCES

Future phylogenetic studies based on molecular data are planned for the genus in Peru.

For a complete bibliography, scan the QR code:

