New Combinations in *Hippeastrum*, *Ismene*, and *Leptochiton* (Amaryllidaceae) for the Flora of Peru

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ABSTRACT. Thirteen new combinations are provided for Peruvian species of Amaryllidaceae: *Hippeastrum bukasovii* (Vargas) Gereau & Brako, *Hippeastrum cuzcoense* (Vargas) Gereau & Brako, *Hippeastrum ferreyrae* (Traub) Gereau & Brako, *Hippeastrum hugoi* (Vargas) Gereau & Brako, *Hippeastrum intiflorum* (Vargas) Gereau & Brako, *Hippeastrum leonardii* (Vargas) Gereau & Brako, *Hippeastrum macbridei* (Vargas) Gereau & Brako, *Hippeastrum variegatum* (Vargas) Gereau & Brako, *Ismene hawkesii* (Vargas) Gereau & Meerow, *Ismene morrisonii* (Vargas) Gereau & Meerow, *Ismene ringens* (Ruiz & Pavón) Gereau & Meerow, *Ismene sublimis* (Herbert) Gereau & Meerow, and *Leptochiton helianthus* (Ravenna) Gereau & Meerow.

During the inventory of Peruvian Amaryllidaceae for the *Catalogue of the Flowering Plants and Gymnosperms of Peru* (Zarucchi & Brako, in prep.), it became clear that the following new combinations are needed to treat the Peruvian species in accordance with current nomenclatural rules and the generic concepts employed by Meerow (1990) in the *Flora of Ecuador*.

1. *HIPPEASTRUM* HERBERT

Based on the lectotypification of *Amaryllis* L. proposed first by Hitchcock (1929: 145) and the lectotypification of its type species *A. belladonna* L. proposed by Sealy (1939) and accepted by Dandy & Fosberg (1954), Goldblatt (1984) proposed the conservation of *Amaryllis* for the single South African species. The unanimous acceptance of this proposal by the Committee for Spermatophyta (Brummitt, 1987) resulted in the authorization of its use in this sense under Article 15 of the *International Code of Botanical Nomenclature* (Greuter et al., 1988: 178) and necessitates the transfer of all New World species formerly included in *Amaryllis* to the conserved genus *Hippeastrum*. The following new combinations are needed for species occurring in Peru:

Hippeastrum bukasovii (Vargas) Gereau & Brako, comb. nov. Basionym: *Amaryllis bukasovii* Vargas, Pl. Life 31: 30. 1975. TYPE: Peru. Puno: Prov. Sandía, bridge at San José, 1,400–1,800 m, *C. Vargas C. 21882* (holotype, CUZ).

Hippeastrum cuzcoense (Vargas) Gereau & Brako, comb. nov. Basionym: *Amaryllis cuzcoensis* Vargas, Pl. Life 31: 32. 1975. TYPE: Peru. Cuzco: Prov. Calca, Hacienda Vilcabamba, 2,800 m, *C. Vargas C. 22395* (holotype, CUZ; isotype, USM).

Hippeastrum ferreyrae (Traub) Gereau & Brako, comb. nov. Basionym: *Amaryllis ferreyrae* Traub, Pl. Life 6: 62. 1950. TYPE: Peru. Loreto: Isla Santa María, near Yurimaguas, Huallaga Valley, 150–200 m, *R. Ferreyra 4497* (holotype, MO).

Hippeastrum hugoi (Vargas) Gereau & Brako, comb. nov. Basionym: *Amaryllis hugoi* Vargas, Herbertia 40: 126. 1984. TYPE: Peru. La Libertad: Prov. Bolívar, Dist. Bambamarca, 2,800 m, *C. Vargas C. 22651* (holotype, CUZ).

Hippeastrum intiflorum (Vargas) Gereau & Brako, comb. nov. Basionym: *Amaryllis intiflora* Vargas, Bol. Fac. Ci. Univ. Nac. Cuzco 1: 2. 1960. TYPE: Peru. Cuzco: Prov. Quispicanchis, Hacienda Cadena, Valle de Marcapata, *C. Vargas C. 12985* (holotype, CUZ).

Hippeastrum leonardii (Vargas) Gereau & Brako, comb. nov. Basionym: *Amaryllis leonardii* Vargas, Herbertia 40: 131. 1984. TYPE: Peru. Puno: Prov. Sandía, San Juan del Oro, *C. Vargas C. 21654* (holotype, CUZ).

Hippeastrum macbridei (Vargas) Gereau & Brako, comb. nov. Basionym: *Amaryllis macbridei* Vargas, Biota 8: 240. 1970. TYPE: Peru. Cuzco: Urubamba (cult. from bulbs collected in Puno, Sandía), 2,840 m, *C. Vargas C. 16422* (holotype, CUZ; isotype, USM).

Hippeastrum variegatum (Vargas) Gereau & Brako, comb. nov. Basionym: *Amaryllis variegata* Vargas, Pl. Life 31: 29. 1975. TYPE: Peru. Puno: Prov. Sandía, near Oconeque, 1,800 m, *C. Vargas C. 16423* (holotype, CUZ).

2. *Ismene* Salisbury

Herbert (1837) recognized *Elisena* Herbert, *Hymenocallis* Salisbury, and *Ismene* as related but separate genera. Baker (1888) maintained *Elisena* at generic rank, but reduced *Ismene* to *Hymenocallis* subg. *Ismene* (Salisbury) Baker. Macbride (1936) simply combined *Elisena* and *Ismene* with *Hymenocallis* with no recognition of subgeneric distinctions. Meerow (1988, 1990) included *Elisena* and *Pseudostenomesson* Velarde in *Ismene*, and despite considerable polymorphism in flower and pollen morphology, he considered the expanded *Ismene* a monophyletic group deserving generic status on the basis of vegetative, ovary, and seed morphology and chromosome number. The following new combinations are needed for species occurring in Peru:

Ismene hawkesii (Vargas) Gereau & Meerow, comb. nov. Basionym: *Hymenocallis hawkesii* Vargas, Pl. Life 31: 27. 1975. TYPE: Peru. Cuzco: Prov. Quispicanchis, Lucre, 3,050 m, *C. Vargas C. 16995* (holotype, CUZ).

Ismene morrisonii (Vargas) Gereau & Meerow, comb. nov. Basionym: *Stenomesson morrisonii* Vargas, Natl. Hort. Mag. 22: 132. 1943. *Pseudostenomesson morrisonii* (Vargas) Velarde, Revista Ci. (Lima) 51: 47. 1949. *Hymenocallis morrisonii* (Vargas) Traub, Pl. Life 21: 96. 1965. TYPE: Peru. Apurímac: Prov. Abancay, gorge of Matará, Hacienda Soccospampa, 2,400–2,800 m, *C. Vargas C. 2281* (holotype, CUZ not seen; isotype, MO).

On the basis of a photo of the plant and a sketch of the flower, Ravenna (1988) rejected Traub's transfer of *Stenomesson morrisonii* to *Hymenocallis*, thereby refuting its affinity with *Ismene* (but without mentioning Velarde's transfer of *S. morrisonii* to *Pseudostenomesson*). Examination of the isotype at MO clearly reveals two basal, globose ovules in each locule of the ovary. Furthermore, the relatively large globose seed (fleshy when fresh) can be observed in a developing capsule on the isotype. The locules of all species of *Stenomesson* have numerous ovules, which are flattened and develop into flat, dry, winged seeds.

Ismene ringens (Ruiz & Pavón) Gereau & Meerow, comb. nov. Basionym: *Pancratium ringens* Ruiz & Pavón, Fl. Peruv. 3: 53. 1802. *Liriope ringens* (Ruiz & Pavón) Herbert, Appendix 42. 1821. *Elisene ringens* (Ruiz & Pavón) Herbert, Amaryllidaceae 201. 1837. *Hymenocallis ringens* (Ruiz & Pavón) J. F. Macbride, Field Mus. Nat. Hist., Bot. Ser. 13(1): 673. 1936. TYPE: Ruiz & Pavón, Fl. Peruv. 3: t. 283, fig. b. 1802 (lectotype, selected here).

Ismene sublimis (Herbert) Gereau & Meerow, comb. nov. Basionym: *Elisena sublimis* Herbert, Bot. Mag. 67: sub pl. 3873. 1841. *Hymenocallis sublimis* (Herbert) J. F. Macbride, Field Mus. Nat. Hist., Bot. Ser. 11: 11. 1931. TYPE: Peru. La Libertad: Cajamarquilla, *Maclean s.n.* (holotype, K).

3. *Leptochiton* Sealy

Sealy (1937) described the genus *Leptochiton* based on a single species, *L. quitoensis* (Herbert) Sealy, an ephemeral geophyte of southwestern Ecuador and adjacent northwestern Peru. Meerow (1990) maintained this genus (as *Lepidochiton*, orth. var.) largely on the basis of ovary and seed morphology. Although we have not yet been able to examine type material, there can be no doubt from the illustration in Ravenna (1980) that the following new combination is needed:

Leptochiton helianthus (Ravenna) Gereau & Meerow, comb. nov. Basionym: *Hymenocallis heliantha* Ravenna, Bot. Not. 133: 97. 1980. TYPE: Peru. Cajamarca: grassy slopes in region of Magdalena, between Pacasmayo and Cajamarca, cult. in Santiago de Chile, *P. Ravenna 2059* (holotype, Herb. Ravenna not seen; isotype, USM not seen).

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