

## 7. *Villadia klopfensteinii*

PINO & CIEZA sp. nov.

*Planta succulenta glabra, florens usque ad 28–35 cm alta. Caulis procumbens fuscus 2.5–5 mm diam, 1–6 ramis erectis, sterilibus 1.7–5 cm longi, florigeris usque ad 35 cm, caulibus 2.5–3.5 mm diam flavovirentibus. Folia succulenta sessilia spiraliter disposita, infima confertim inserta, suprema erecta laxe dispersa, anguste ovata vel oblonga 1.3–1.8 cm longa, 4–5 mm lata, subacuta, flavovirentia, calcar hyalino instructa. Inflorescentia terminalis spica 4–11 cm longa, 16–34 floribus sessilibus. Bracteae ovatae, 6–7 mm longae 2–2.5 mm latae, in quoque flore ternae, angulo fere recto divergentes. Sepala triangularia-oblonga 3–6 mm longa 1.3–1.5 mm lata. Petala oblonga acuta 5.5–6 mm longa, 2.5–3 mm lata, a basi usque ad apicem coalita, flavovirentia. Stamina filamentis albis. Carpela 5 fusiformia albovirentia. Floret ab Aprile ad Majum.*

**Holotype:** Dept. Cajamarca, Prov. Celendín, Dist. Sucre, on road to Celendín, 33 km east of Cajamarca, 5 km west of Encañada, 3190 m, 16 May 1964, *P. C. Hutchison & J. Kenneth Wright* 5117 (UCB 1410,141); F 1793,301, K (isotypes).

A succulent glabrous herb 28–35 cm tall when flowering. Roots 3–5 cm long, 1–1.8 mm diam, whitish. Stem procumbent, 2.5–5 mm diam, gray-brownish, branching every 2–6 cm (Fig 43). Branches 1–6 (–10), erect, vegetative shoots 1.7–5 cm long (Fig 44), flowering shoots up to 35 cm, stem 2.5–3 (–3.5) mm diam, light green-yellowish, rarely reddish. Leaves succulent, sessile, spirally arranged; crowded near the base, spreading and recurved inwards in young shoots, more widely spaced and erect in the distal  $\frac{4}{5}$ , narrowly ovate to narrowly oblong, (0.9–) 1.3–1.8 (–2.4) cm long, (3.5–) 4–5 mm wide, 2–2.5 mm thick, obtuse-subacute, upper (inner) side convex to flat, lower (outer) side convex, obscurely keeled, spurred at base, dull green-yellowish, rarely purplish with yellowish dots, margins entire (Fig 45).

Inflorescence a terminal spike 4–11 cm long (Fig 46). Flowers (12–) 16–34, appearing from April to May. Bracteoles three per flower, up-curved, the largest opposite the stem and the other two lateral, placed at 90° one at each side, 6–7 (–10) mm long, 2–2.5 mm wide, narrowly ovate, subacute, inner side concave, outer side convex and sometimes with reddish dots, with a hyaline spur at base. Pedicels absent. Sepals deltoid to oblong, obtuse, 3–6 mm long, 1.3–1.8 mm wide, light green. Petals oblong, acute-deltoid at tip, united along margins, curved inwards, tips slightly spreading outwards, 5.5–6 mm long, 2.5–2.8 mm wide, outer surface convex, green-yellow, inner surface concave, light green, margins entire. Stamens ten, the five epipetalous 2.5–3.2 mm long, the antesepalous 3.5–4.2 mm long, filaments white, 0.4 mm diam. Anthers deltoid-ovoid, 0.8 × 0.7 mm, yellow. Gynoecium ovoid,

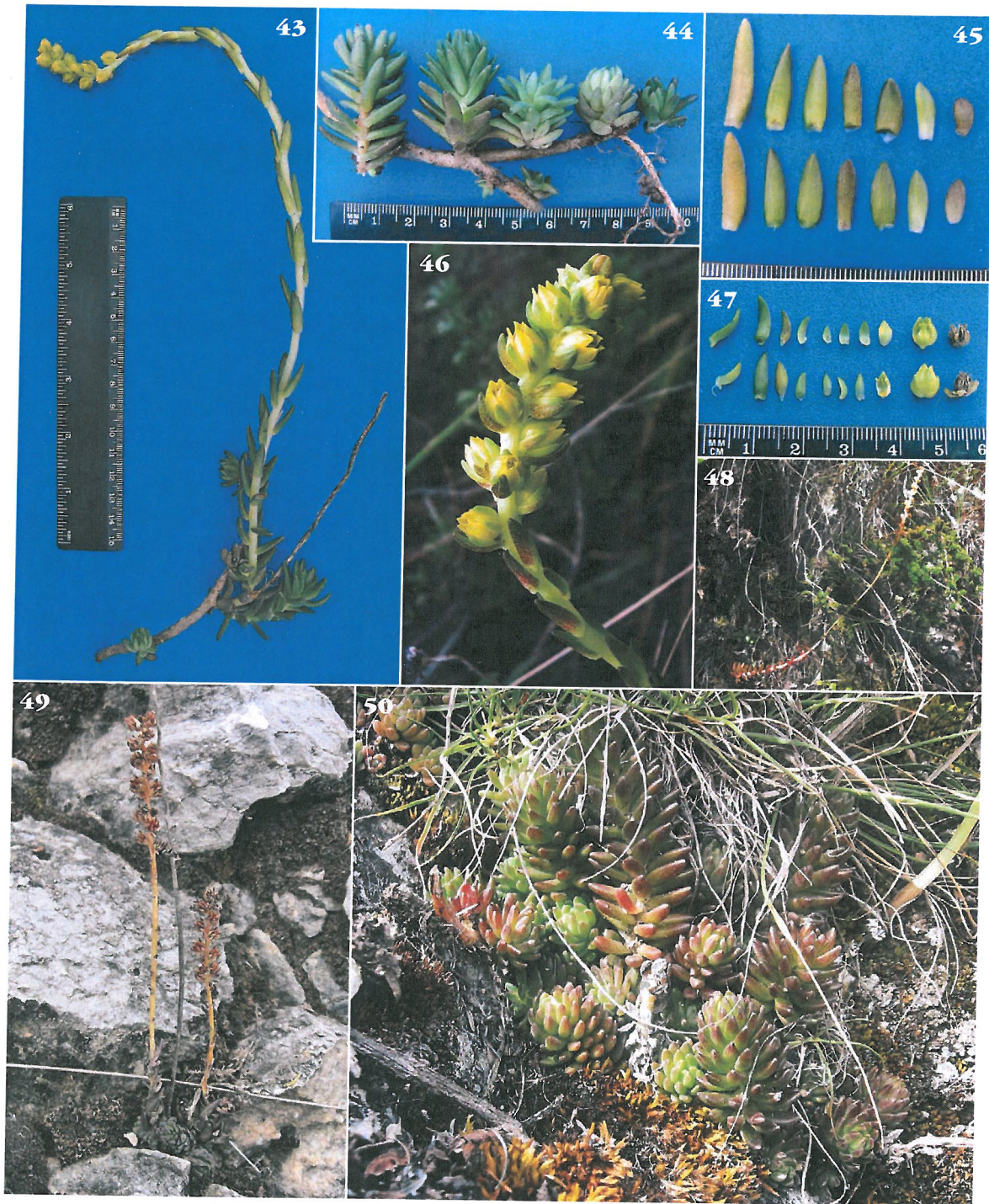
3.2 × 4.8 mm. Carpels five, 2.5–3.5 mm long, light green. Style 0.6 mm diam, 0.8 mm long, green, stigma white. Nectary scales oblong-spathulate, 1–1.2 mm. Fruit a dehiscent capsule, 4 × 5.2 mm, dry carpels reddish (Fig 47). Seeds narrowly ovoid, 0.65–0.70 mm long, 0.25–0.35 mm diam, orange.

PERU. Dept. Cajamarca, Prov. Celendín, Dist. Celendín, canyon of Río Marañón above Balsas, 3–4 km below summit of the road to Celendín, 2950 m, 23 May 1964, *P. C. Hutchison & J. Kenneth Wright* 5280 (USM 43,488). Prov. Cajamarca, Dist. Baños del Inca, Route to ex-Estate Sangal, towards Encañada, 3190 m, 07°04'46" S, 78°23'55" W, 2 Apr 2002, *I. Sánchez-Vega* 11355 (CPUN 15470). Dist. Encañada, near Encañada, on rocks, 2870 m, 4 May 1970, *A. Sagástegui* 7384 (US 2588,359). Road from Encañada to Celendín, 1 km before Quinuamayo, growing with *P. nivalis* forma *diminuta*, 3410 m, 07°03'14" S, 78°19'44" W, 30 Apr 2000, *G. Pino* 269 (USM 217,137). Prov. San Marcos, Dist. Gregorio Pita: road from San Isidro to Casablanca, on rocks, 7°14'38" S, 78°00'33" W, 3660 m, 15 May 2003, *G. Pino* 1147. Río Seco, 7°13'09" S, 78°12'07" W, 3097 m, 17 May 2002, *RRP* 388. (USM 217,138) (Fig 45). Ullillín, 7°15'47" S, 78°08'03" W, 2924 m, 24 Jun 2001, *RRP* 26. Prov. San Pablo, Dist. Tumbadén: Inyatambo, west of the floodgate on grassy highland, 6°55'20" S, 78°40'04" W, 3240 m, 13 Mar 2002, *I. Sánchez-Vega and A. Miranda Leiva* 11,318 (CPUN 15,431). Loc. Cit., 10.5 km from detour of the road Cajamarca-Hualgayoc, on rocky outcrops, 6°55'20" S, 78°40'04" W, 3450 m, 25 Feb 2004, *I. Sánchez-Vega and W. Díaz Miranda* 12,554 (CPUN 17,987). Dept. La Libertad, Prov. Sánchez Carrión, Dist. Huamachuco, road to Cajabamba, between Sausacocha and Cajabamba, 7°41' S, 78°01' W, 3000 m, 15 Feb 1983, *D. N. Smith & R. Vásquez* 3383 (USM 125,278).

This species was collected for the first time in Celendín by Hutchison in 1964, who never named it, and it was found again by the team of the Botanical Garden of San Marcos led by Olivier Klopffenstein while looking for new species of *Peperomia*. From a distance this plant looked to them like a miniature *Echeveria* with yellow flowers (Fig 48), a character that can be even more confusing in the dry period (Fig 49). Vegetative shoots emerge as rosettes (Fig 50), flowers with campanulate flowers with erect, stiff, adnate petals are born in terminal spikes of the flowering stems, which at first were thought to be lateral inflorescences. A closer look shows that vegetative and flowering branches emerge separately from the procumbent primary stem buried in moss. The plant is named for Olivier Klopffenstein, born in Switzerland, forester and amateur botanist who came to Peru to visit his wife's country and remained for many years.



He is the founder of the Botanical Garden of San Marcos, a tireless researcher of Peruvian flora, and co-author of several species of *Peperomia*. This is a homage to all his work during his stay among us. We hope he will return someday to continue exploring our land.



**Figures 43–50. *Villadia klopfensteinii*.** **Figure 43.** *V. klopfensteinii* ex situ from San Isidro. **Figure 44.** Young vegetative shoots of *V. klopfensteinii*. **Figure 45.** Detail of the leaves of *V. klopfensteinii*. **Figure 46.** Spike of *V. klopfensteinii* in habitat. **Figure 47.** Detail of (left to right) bract lateral view, opposite bract, lateral bracts (2), sepals (3), petal, flower, fruit. **Figure 48.** *V. klopfensteinii* in habitat at Río Seco, spike several times larger than the plant. **Figure 49.** *V. klopfensteinii* in the dry season. Plants with small rosettes and dried spikes could be mistaken for *Echeveria* when not observed carefully. **Figure 50.** Young plant of *V. klopfensteinii* in habitat.