

8. *Villadia aureistella*
PINO & CIEZA sp. nov.

Planta succulenta glabra florens usque ad 28–30 cm alta. Caulis erectus, ad basim 6–10 mm diam, ramis erectis 1–6, 3–5 mm diam, griseobrunneis. Rami secundarii steriles 3–6 cm longi, floriferi usque ad 30 cm longi, caulibus 1.8–2 mm diam rubiginosis. Folia succulenta imbricata spiraliter disposita sessilia anguste ovata vel anguste oblonga 8.5–10 mm longa, 1.8–2.5 mm lata, subacuta, flavovirentia. Inflorescentia terminalis spica 4–8 cm longa, 16–32 floribus sessilibus. Bracteae anguste ovatae-oblongae, 5–8 mm longae 1.5–1.8 mm latae, in quoque flore ternae, angulo fere recto divergentes. Sepala anguste ovata vel triangularia 4–6 mm longa 1.5–1.8 mm lata. Petala oblonga acuta 7.5–8 mm longa, 2.2–2.6 mm lata, flava, a basi usque ad dimidiam vel $\frac{2}{3}$ partem coalita, demum deltoidea extrorsum recurvata. Stamina filamentis albis. Carpela 5 fusiformia alba. Floret ab Majo ad Julium.

Holotype: Dept. Cajamarca, Prov. Cajabamba, Dist. Cajabamba, outskirts of the city of Cajabamba, road from Cinco Esquinas to the waterfall of Cochecorral, on rock-walls along field-borders, growing with *Echinopsis pachanoi*, *Opuntia ficus-indica*, *Peperomia galioides*, *Opuntia exaltata* [*Austrocylindropuntia subulata* ssp. *exaltata*], 7°36'30" S, 78°02'35" W, 2600 m, 29 Jul 2005, RRP 810 (USM 217,136).

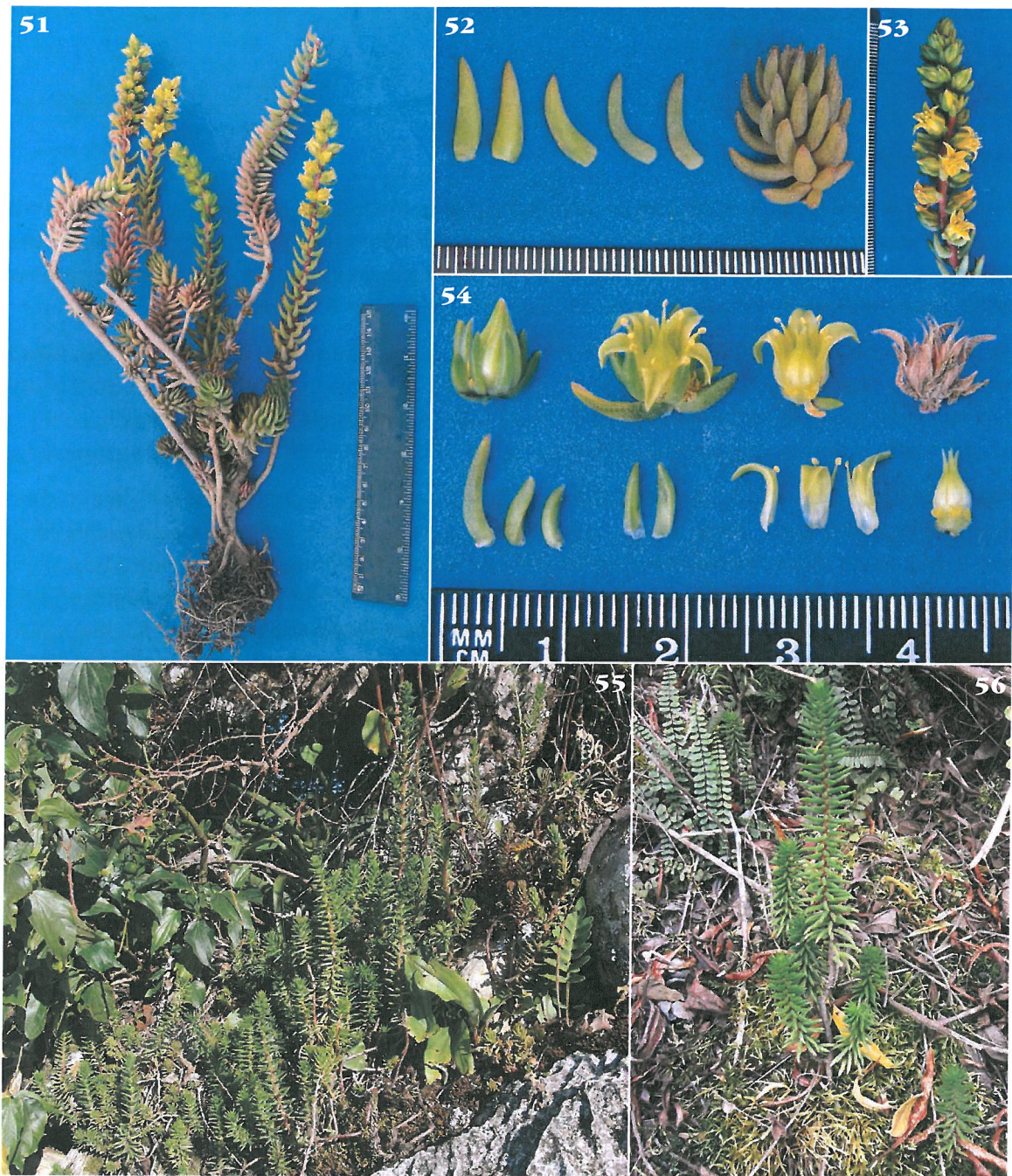
A succulent glabrous herb, 28–30 cm tall when flowering. Primary roots 3–6, 3.5–5 cm long, 2–2.5 mm diam, light brown, secondary roots numerous, 1–1.2 mm diam, 3–4 cm long. Stem decumbent, apices erect, 6–10 mm diam at base, gray-brownish, branching profusely. Primary branches 1–4 (–6), erect, 3–5 mm diam, up to 15 cm long (Fig 51). Secondary branches numerous, vegetative shoots (1–) 3–6 cm long, flowering shoots up to 30 cm long, stem 1.8–2 (–4.5) mm, reddish. Leaves succulent, sessile, spirally attached to stem, denser on young shoots, attached to stem at a right angle, tip later recurving upwards, narrowly ovate to oblong, 8.5–10 (–13) mm long, 1.8–2.5 mm wide, 1.5–1.8 mm thick, obtuse-subacute, upper side flat to slightly convex, lower side convex, yellowish green, reddish near tip, margins entire (Fig 52).

Inflorescence a terminal spike 4–6 (–8) cm long (Fig 53). Flowers 16–32, appearing from May to July, the lower third rarely geminate. Rachis 2–2.2 mm diam, reddish. Flower buds 6 × 5 mm, light green. Bracteoles three per flower, the largest opposite the stem and the other two lateral, placed at 90° one at each side, 5–8 mm long, 1.5–1.8 mm wide, narrowly ovate-oblong, obtuse to acute, upper side concave, lower side convex, slightly curved upwards, with a hyaline spur at base. Pedicels absent. Sepals narrowly ovate to oblong, obtuse, 4–6 mm long, 1.5–1.8 mm wide, light green.

Petals oblong, acute-deltoid at tip, united at the base, recurving along the distal two-thirds, 7.5–8 mm long, 2.2–2.6 mm wide, outer surface convex, greenish yellow to bright yellow, paler at base, inner surface concave, yellow, margins entire. Stamens ten, the five epipetalous 4–4.2 mm long, the antesealous 6–6.2 mm long, filaments white, conical, 0.4 mm diam. Anthers deltoid-ovoid, 0.4 × 0.5 mm, yellow. Gynoecium ovoid, 3.2 × 4 mm, carpels five, 3.5–4 mm long, whitish. Style 2 mm long, light green, stigma white. Nectary scales widely oblong, 1 × 1 mm, yellowish green. Fruit a dehiscent capsule, 6.5 × 7 mm, dry carpels light brown tinged with orange. Seeds narrowly ovoid, 0.65–0.75 mm long, 0.30–0.35 mm diam, light brown (Fig 54).

PERU. Dept. Cajamarca, Prov. Cajabamba, Dist. Cajabamba, Cajabamba, road from Cinco Esquinas to Cochecorral, 7°36'24" S, 78°02'30" W, 2730 m, 2 Feb 2008, G. Pino 1895. Prov. San Marcos, Dist. José Manuel Quiroz, road from Liclic to Platanillo, on borders of footpath partially shaded by shrubs, growing with *Villadia thiedeii*, 7°20'09" S, 77°59'16" W, 2920 m, 1 Feb 2008, G. Pino 1883.

This species was discovered by the San Marcos Botanical Garden team during an expedition to Cajabamba and was first noticed by Nelson Cieza on 22 January 2004 growing on rocky walls around the city (Fig 55). Later we discovered that plants we had supposed to be a new species found at Liclic and Alisopata and growing with *V. thiedeii* and *V. paniculata* also belonged to this new taxon. Young plants have erect reddish stems with terete, almost linear yellowish-green leaves, a character it shares with *Villadia paniculata* (described below), making the two indistinguishable without flowers (Fig 56). A photo of *V. aureistella* was published by Low (2006). It is unique among the known species of *Villadia* in Peru in having showy flowers with petals totally recurved, forming loops, as is found in the Mexican *Villadia recurva* MORAN, KIMNACH & UHL. The name "aureistella" refers to the golden, star-shaped flowers.



Figures 51–56. *Villadia aureistella*. **Figure 51.** *V. aureistella* *ex situ*, Cajabamba. **Figure 52.** Detail of leaves (left) and young shoot (right). **Figure 53.** Detail of spike of *V. aureistella*. The golden yellow flowers have strongly recurving petals, a unique character among the Peruvian species. **Figure 54.** (above, left to right) detail of, flower bud, flower showing bract disposition, flower section, fruit. (beneath, left to right) opposite bract, lateral bracts (2), sepals (2), petals, lateral view, outer side, inner side, gynoecium. **Figure 55.** *V. aureistella* in habitat growing on the rock walls around Cajabamba. **Figure 56.** Young *V. aureistella* at Liclic. It could easily be mistaken for *V. paniculata*.