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RESEARCH ARTICLE

Senecio anastasioi (Asteraceae / Compositae: Senecioneae), a new caespitose species from the South Andes of Peru

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Abstract. *Senecio anastasioi* Montesinos, a new species of Asteraceae / Compositae: Senecioneae allied to *Senecio* ser. *Suffruticosi* subser. *Caespitosi*, is described from the Andean regions located in South Peru. In morphological terms, *S. anastasioi* is similar to *S. gamolepis* Cabrera but clearly distinguished by its larger habit size, irregular arrangement of leaves, greater length and width of leaves, leaf lamina covered by scarce fimbriate or sericeous trichomes, capitules with larger, calycular bracts and phyllaries, both densely pubescent apically, and longer pedicels and pappus bristles. The morphological differences between these species are identified and further discussed. The preliminary IUCN status for the new species is assessed.

Keywords: Asteraceae, *Senecio* subser. *Caespitosi*, South America, taxonomy, Trey Anastasio

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Introduction

Senecio L. is considered to be one of the most species-rich and diverse genera within Asteraceae / Compositae, with approximately 1250 currently recognized species (Nordenstam et al., 2009), even after several groups earlier placed in *Senecio* s. l. have been segregated into separate genera. Various phylogenetic lineages of the genus diversified in temperate, tropical and subtropical regions of the world, forming various life forms, from small annual herbs to woody plants (Nordenstam, 2007; Nordenstam et al., 2009). In Peru, ca. 186 species of the genus are currently known (Vision & Dillon, 1996; Montesinos-Tubée, 2014; Montesinos-Tubée et al., 2015, 2017, 2018), 94 of them being endemic to Peru.

Recent studies in *Senecioneae*, genus *Senecio* subser. *Caespitosi* (O.Hoffm.) Cabrera & S.E.Freire (Freire et al., 2014) from South America, as circumscribed by Cabrera et al. (1999), demonstrated that it includes ca. 50 species

of mostly caespitose plants growing at altitudes above 4000 m above sea level (a.s.l.) in the Central Andes. In recent years, the infrageneric classification of the group remained partially resolved (Montesinos-Tubée, 2014) but having still, several species were probably misplaced, as can be seen in the propositions made by Calvo et al. (2019). During floristic surveys carried out in southern Peru during 2012–2021, some populations of *Senecio* at high elevations were discovered. Based on detailed examination of morphological and anatomical characters of the specimens and comparing them with morphologically similar species, it has been concluded that the plants found in North Moquegua represent a novelty distinct from the species known so far. These plants are distinguished mainly by their large matt-forming habit, a character that does not occur in related taxa forming shorter matts. Therefore, a new species, *Senecio anastasioi*, is here proposed. The necessary actions to validate this name are taken below. The

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new species is here described in detail, illustrated with macro- and microscopic images, and compared to its most similar relatives.

Material and methods

Fieldwork was carried out in the Moquegua Department, southern Peru (Fig. 1) from 2012, the date of the first encounter with the new species that occurred during an expedition in September. Following the initial discovery, several further collections of *Senecio* were made along the mountain summits of the Tambo River in its uppermost geographic boundaries (Fig. 1). Morphological analyses were undertaken (roots, stems, leaves, synflorescences, and fruits) on freshly collected and dried herbarium specimens, and the results were compared with *Senecio* collections held at B, CPUN, CUZ, F, HSP, HUSA, HUT, K, LP, LPB, MO, MOL, P, PRC, SGO, US and USM (herbarium abbreviations follow Thiers, 2022) and online repositories (<http://plants.jstor.org>, <http://tropicos.org> and <http://www.fieldmuseum.org>). The morphological descriptions are based on field notes, herbarium specimens and over 100 photographs. Except stated otherwise, the dimensions of various morphological parts refer to dehydrated material, while the colours are given based on fresh specimens. All morphological characters were studied under a NSZ-405 1X-4.5X stereo microscope and an Olympus SZX10 Stereo Microscope with two objectives. The conservation status was assessed following the standards and categories of the IUCN Red List version 3.1 (IUCN, 2012).

Taxonomy

Senecio anastasioi Montesinos, sp. nov. (Figs 2A–J, 3A–F, 4A)

Type: SOUTH AMERICA, PERU, Moquegua, General Sánchez Cerro, Yunga, highland puna slopes with rocks and cushion plants, southern lower slopes of Choco-Choco Mountain, 16°15'26" S, 70°36'56" W, 4740 m, 15 August 2019, *D.B. Montesinos 7699* (Holotype: HSP!; isotypes: B-101167156!, CPUN!).

Diagnosis. *Senecio anastasioi* is similar to *S. gamolepis* from central and northern Peru, but is distinguished from the latter by the following characters: larger growth habit; irregular arrangement of leaves per stem without a symmetrical axis; greater length and

width of the leaves, leaf lamina bearing scarce fimbriate or sericeous trichomes less than 1 mm long, and by the presence of thin trichomes on the leaf apex; capitula with larger calycular bracts and phyllaries, both apically densely pubescent, and by longer pedicels and pappus bristles.

Description. Perennial subshrub, spreading or mat-forming, rhizomatous, creeping, low-growing, with dense fibrous roots, forming dense mats 4–10 cm tall and up to 1.8 m in diameter. Trichomes scarce, fimbriate or sericeous, 0.2–1.0 mm long, with a rotund or bifid apex, distantly and irregularly distributed along branches and leaf margins and surface. Stems woody, 5–20 cm long, often two to ten times branched, covered with thin sericeous trichomes (less than 1 mm long) and persistent foliage. Basal leaves absent. Cauline leaves oblong-spathulate, arranged asymmetrically along stems with about 10–150 leaves each; lamina thick, lustrous, 7–30 mm long, 1.5–3.0 mm wide, plain or rarely involute, recurved towards the tip, scarcely covered at margins by few fimbriate or sericeous trichomes about 0.10–0.20 mm long set in roundish black glands of about 0.05–0.10 mm in diameter, apex obtuse-acute, base truncate, margins entire; young leaves pale green (to greenish lemon) with yellowish margins turning yellowish-brown with age. Internodes of about the same size as leaves, about 2–25 mm long, thicker than leaves, slightly striate and whitish-green coloured. Petioles absent. Synflorescence reduced to solitary discoid capitula with 2–4 mm long pedicels. Involucre cylindrical, ca. 8–18 mm long, 5–7 mm wide. Calycular bracts 8–10 mm long, 0.8–1.5 mm wide, lanceolate-oblong, glabrous, scarcely covered by short and reedy trichomes at the apex. Phyllaries 12–14, 10–13 mm long, 1.5–2.0 mm wide, oblong, yellowish-green on the surface and margins, thick, lustrous, glabrous on lamina and along margins except by dense short transparent trichomes of about 0.10–0.30 mm located at the acute apex. Florets 35–40, narrowly tubular, abruptly constricted near the base, 5-lobed, each lobe 0.9–1.1 mm long, with a tube 8–12 mm long, 0.3–1.2 mm wide, bright yellow. Anthers oblong, 5–6 mm long, 0.15–0.30 mm wide, ecalcarate, terminal appendages lanceolate, rounded, margin yellowish-transparent and becoming yellow towards the centre. Style bright yellow, truncate, 1.8–2.2 mm long, bifid (branches 1.5–2 mm long), with papillae cover on the entire surface of the apex. Receptacle flat epaleate, 2.5–3.5 mm diam. Achenes cylindrical, glabrous, 1.3–2.0 mm long, 0.7–0.9 mm wide, light brown. Pappus of plane bristles, 8–12 mm long, whitish, barely barbellulate, apex often bifurcate.

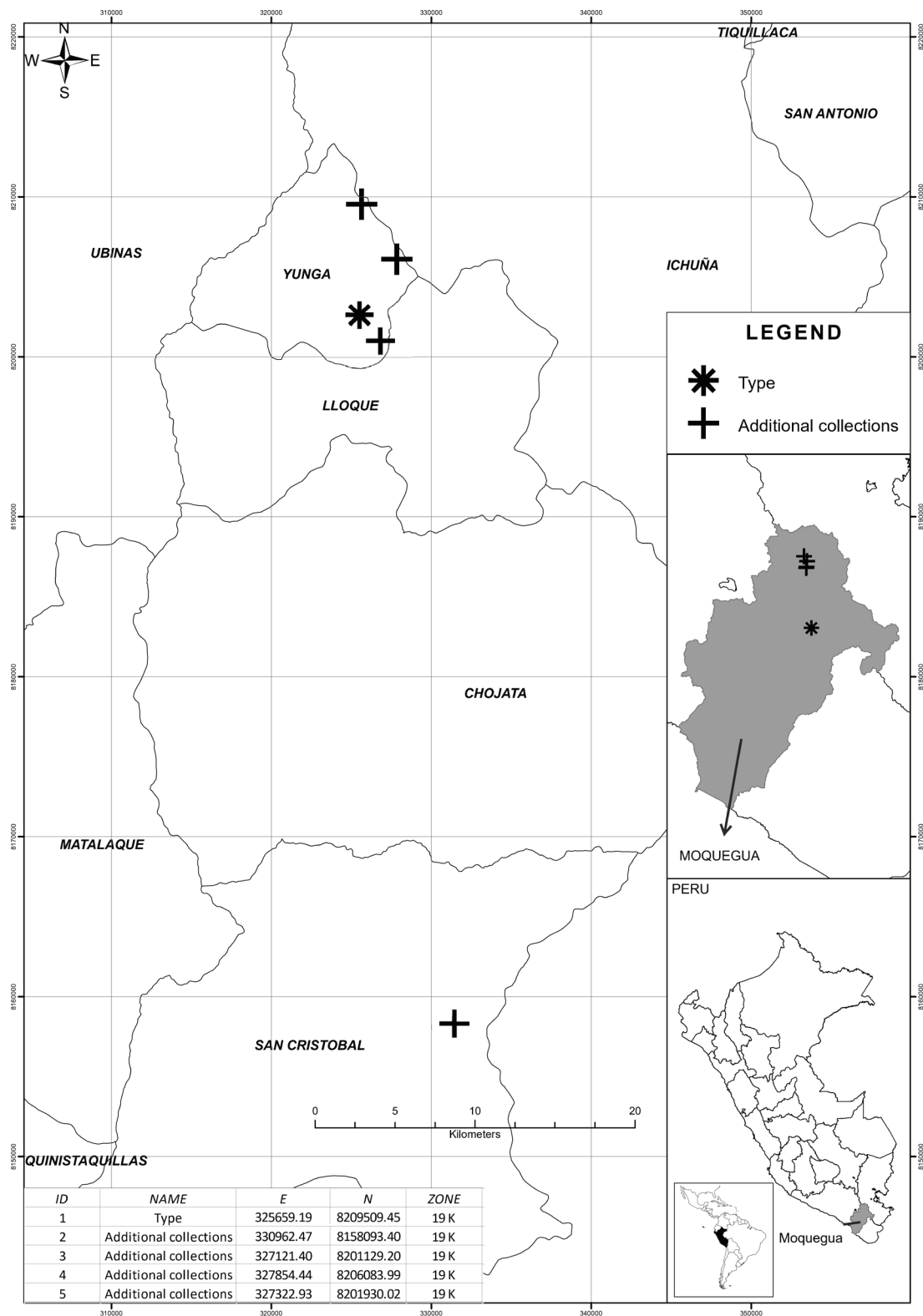


Fig. 1. Distribution of *Senecio anastasoi* in southern Peru

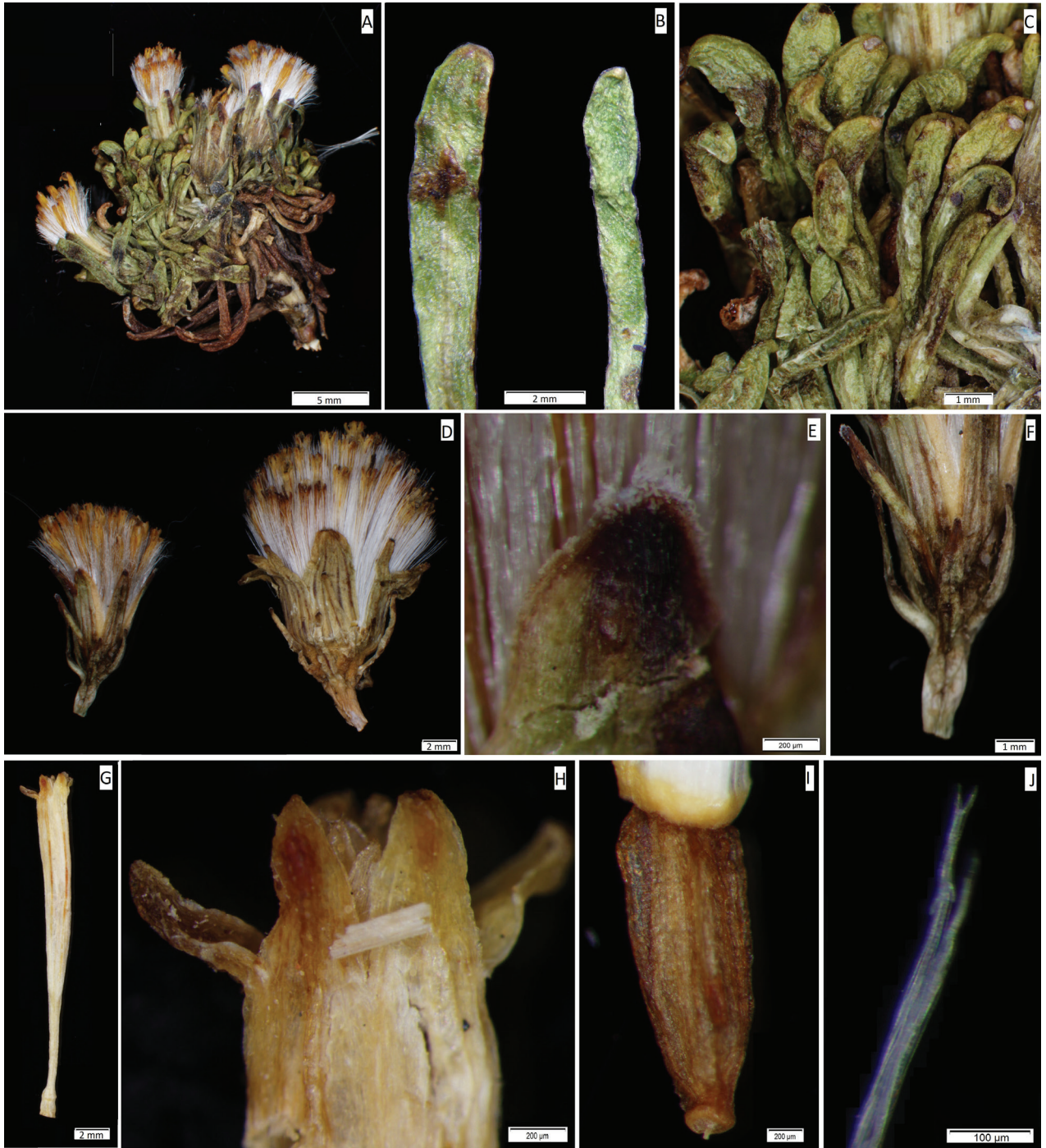


Fig. 2. *Senecio anastasoi*, details from plants of the type collection. A: branch fragment; B: leaf shape and length; C: leaf arrangement; D: synflorescences; E: phyllary apex; F: detail of the calycular bracts; G: singular floret; H: floret apex; I: achene; J: pappus bristle apex (all images: D.B. Montesinos-Tubée)

Paratypes. PERU. Moquegua, General Sánchez Cerro, Yunga, highland puna slopes with rocks and cushion plants, lower slopes of Perusa Mountain, 16°11'19" S, 70°37'51" W, 4826 m, 03 March 2018, *D.B. Montesinos 5948* (CUZ!, HUSA!). Moquegua, General Sánchez Cerro, Yunga, highland puna slopes with rocks and cushion plants, lower slopes of Choco-Choco Mountain, 16°15'52" S, 70°37'04" W, 4715 m, 11 September 2012, *D.B. Montesinos 3935* (USM!). Moquegua: General Sánchez Cerro, Chojata, roadside between Cerro Mitani and Ticsani Volcano, 16°39'13" S, 70°35'06" W, 4812 m, 27 September 2017, *D.B. Montesinos & D.G. Lazo 5882* (HSP!, USM!, HUT!). Moquegua, General Sánchez Cerro, Yunga, highland puna slopes with rocks and cushion plants, southern lower slopes of Choco-Choco Mountain, 16°13'10" S, 70°36'39" W, 4942 m, 16 August 2019, *F. Valenzuela et al. 049* (USM!, HINS!, K!).

Ecology and distribution. *Senecio anastasioi* occurs in superpuna environments (the highest subnival parts of the puna with isolated patches of snow, see Montesinos-Tubée et al., 2021) in the Central Andes where it has an altitudinal range of 4700–5000 m a.s.l. The new species tends to grow in rock cracks, sometimes on slopes of about 90° or less, as well as in open soils, bedrock or in association with cushions plants, seen occurring together with *Azorella compacta* Phil. (*Apiaceae*), *Epilobium fragile* Sam. (*Onagraceae*), *Pycnophyllum molle* Remy (*Caryophyllaceae*), *Senecio algens* Wedd., *S. rufescens* DC., *Werneria ciliolata* A.Gray (*Asteraceae*), *Distichia muscoides* Nees & Meyen (*Juncaceae*), *Urtica trichantha* (Wedd.) Acevedo & L.E.Navas (*Urticaceae*), *Viola ornata* P.González, Montesinos & J.M.Watson (*Violaceae*), among others. It is also likely that the new species is present in northern Tacna Department (from photographs seen, C. Cáceres, personal communication) but no collections have been made there yet. Tupayachi (2019) cites *S. gamolepis* for Cusco (southern Peru) but it remains unclear if the herbarium specimens that form the basis for that record correspond to *S. gamolepis* or *S. anastasioi*. Brako & Zarucchi (1993) state that *S. gamolepis* is present in the Lima and Junín departments which, on the basis of this study (specimens seen in USM!) is now expanded to include the Ancash and Huancavelica departments. *Senecio anastasioi* occurs in South Peru, in the Moquegua Department certainly, while it is mostly likely also to occur at similar altitudes in the Tacna, Arequipa, Cusco, and Puno departments.

Phenology. Flowers and fruits observed during the months of May and November.

Preliminary conservation status. Following the criteria and categories of IUCN (2012), a preliminary status of Vulnerable (VU) is designated for the new species since parameters of its populations and predictions based on their occurrence suggest that *S. anastasioi* has a potential geographic range of about <5 000 km². The appropriate habitats for *S. anastasioi* are the extensive plateaus above 4700 m a.s.l. in South Peru, and these habitats are vulnerable to road maintenance and mining operations, as well as volcanic activity and climate change. In both cases, anthropic and non-anthropic activities can lead to the gradual decline and eventual disappearance of the species, as established by Montesinos-Tubée et al. (2021) on the dangers and threats that could generate a decline on populations of subnival plant communities in North Moquegua.

Etymology. The specific epithet refers to the musician Ernest Joseph "Trey" Anastasio III (born 30 September 1964), honouring the fifty-eight birthday of that American singer, songwriter, composer and musician who is best known for the band *Phish*. The quartet produces music with a unique melodic and harmonious style, reported as hyper-complex, fugue-like compositions (Mandelbaum, 2021) which is greatly revered amongst musicians and followers around the world (Blau, 2010). I enjoyed Trey Anastasio's music during my research, and it greatly facilitated my work. Thus, I feel that this dedication is appropriate and does not go against Recommendation 20A.1(h) in the current *Shenzhen Code* (ICN: Turland et al., 2018), which is non-binding and currently refers only to names of genera.

Discussion. *Senecio anastasioi* is placed in the subgroup of discoid caespitose species. In general, it is easy to distinguish it from its closest relatives (Fig. 3) by their leaf morphology and the size of synflorescences.

The new species is distinguished from *S. gamolepis* by the following characters: larger habit size dimensions (20–30 mm vertical height, >1 m width in *S. gamolepis* vs. 80 mm, ca. 1.80 m in *S. anastasioi*), the irregular arrangement of leaves per stem (against almost symmetrical rosettes), presence of thin trichomes on the leaves (glabrous in *S. gamolepis*), larger size of the leaves (ca. 30 mm vs. ca. 12 mm in *S. gamolepis*), leaf shape being linear and spatulate (vs. linear-lanceolate), pedicels larger (2–4 mm vs. 0.2–2.0 mm), involucre cylindrical (vs. campanulate), calycular bracts lanceolate-oblong (vs. linear) and larger (8–10 mm vs. 6–7 mm), larger size of the phyllaries (10–13

mm, 1.5–2.0 mm vs. 6–8 mm, 0.8–1.2 mm), larger size of the achenes and pappus (1.3–2.0 mm, 8–12 mm vs. 0.6–0.8 mm, 6–9 mm). From *Senecio algens* Weddell (1856: 104), a species distributed above 4500 m (Peru, Bolivia and northwestern Argentina), it can be easily distinguished by the habit (dense caespitose mats in *S. anastasioi* against procumbent habit in *S. algens*), presence of fimbriate or sericeous trichomes (0.2–1.0 mm long) on leaves (glabrous in *S. algens*), involucre length (14–18 mm vs. 7.5–10.0 mm), pedicel length (2–4 mm vs. 8–12 mm), phyllary length (10–13 mm vs. 7–9 mm), phyllary width (1.5–2.0 mm vs. 2–3 mm), size of the achene (1.3–2.0 mm vs. 2–3 mm). Furthermore, it is worth mentioning that the leaf and phyllary morphology can easily be distinguished among the mentioned species. Further differences with other species (for more information see Table 1) include shorter pedicel size in *S. anastasioi* (vs. longer sized in *S. beltranii*), longer involucre size (against shorter in *S. beltranii*), among other differences such as the habit and type of leaves. The novelty differs from *S. humillimus* Sch.Bip. by the larger leaf size and lamina texture (shorter leaf and glossy, succulent leaves in *S. humillimus*), larger pedicels (shorter in *S. humillimus*), by the larger number of phyllaries and longer capitules (eight phyllaries in *S. humillimus* and shorter capitules).

Bearing in mind minor differences, the colour of the leaves and phyllaries in living material has also been examined across the compared taxa. *Senecio anastasioi* has leaves, stems and involucre coloured pale green (to greenish lemon), with the margins yellowish turning yellowish-brown with age. As observed in different locations between Arequipa and Moquegua departments, *S. algens* can be categorized as the species bearing the darkest green coloured leaves and involucre, usually bending a reddish midrib, purple coloured apex and venation (greenish without colour variations in *S. anastasioi*). Differences in this sense with *S. gamolepis* include colour of the phyllaries, reddish-lilac in *S. gamolepis* against greenish in *S. anastasioi*. *Senecio vegetus* is perhaps the most greyish coloured plant of these closely allied species from South Peru, both the leaves and phyllaries are bright grey to simple sight.

Another useful field character evident in fresh specimens is the leaf scent that tends to vary from one species to the other. In principle, some species bear strong aromatic aromas which are reminiscent of resin mixed with a skunk odour when crushed, like in *S. humillimus* (mat habit) which resembles *S. nutans* Sch.Bip. (shrubby

habit), locally known as "chachacoma" and considered to be a medicinal plant (Cabrera-Meléndez et al., 2022) due to its phytochemical composition (Parra et al., 2018). As indicated in Table 1, the scent of the species has been classified according to their intensity when crushed. In comparison, *S. anastasioi* does not bear any strong scent and is considered as neutrally smelled.

No further comparisons are made since the remaining species of *Senecioneae*, *Senecio* subser. *Caespitosi* from South America are easily distinguished from *S. anastasioi* because these other species have the tendency to be densely covered by trichomes, or their leaf shape is tending to be pinnatifid as established by Montesinos-Tubée (2014).

Photographic evidence: <https://www.inaturalist.org/observations/144844292>

Specimens evaluated:

Senecio algens Wedd. ARGENTINA. Jujuy, Mina Aguilar, 4650 m, 13 January 1948, *A.L. Cabrera et al.* 9200 (LP-074947!); Jujuy, Mina Aguilar, 4900 m, 15 February 1959, *H.A. Fabris & J.M. Marchionni* 1821 (LP-902636!). BOLIVIA. La Paz, Larecaja, Sorata, 4900–5000 m, April 1860, *G. Mandon* 129 (F-1538601!, K!, LP!); Potosí, Frías, Laguna Mazuni, Cordillera Kari Kari, 4700 m, 6 March 1999, *J.R.L. Wood* 14632 (K-000067830!); Murillo, 15 km NE Puesto Transito on road to Unduavi, 4500 m, 22 February 1980, *J.C. Solomon* 5024 (MO-3282374!); La Paz, Murillo, Nevado Chacaltaya, N of La Paz, 4900 m, 28 January 1984, *A. Gentry & J. Solomon* 44731 (MO-3275490!); La Paz, Omasuyos, Cerro Jankho Huyo, 5000 m, 18 February 1980, *J. Solomon* 4941 (MO-2785042!); La Paz, Sorata, Tipuani-Ancoma, 4600 m, 30 April 1926, *G.H.H. Tate* 803 (MO-980429!); La Paz, Murillo, Valle del Zongo, Nevado Chacaltaya, 4900 m, 15 March 1984, *J. Solomon et al.* 11771 (MO-3692547!). PERU. Puno, Melgar, 4400 m, March 1970, *C. Vargas* 21776 (LP!); Puno, Carabaya, Llincapaca, 4600 m, 1 April 1948, *C. Vargas* 007182 (LP-077764!); Junín, Huancayo, Muñapata, 4400 m, September 1947, *C. Ochoa* 148 (MOL-00014529!); Tacna, Tacna, Quiñota, 5000 m, April 1926, *E. Werdermann* 1407 (B!); Apurímac, Cotabambas, Haqaira, 4525 m, 28 March 2017, *D. Montesinos* 5192 (B-100843184!); Huancavelica, Huachocolpa, 4907 m, 23–31 March 2015, *P. Gonzáles* 3547 (USM-280557!); Puno, Carabaya, Corani, Minaspata, 5024 m, 15–21 October 2016, *P. Gonzáles* 3825 (USM-239563!); Tacna,

Table 1. List of *Senecio* species and their principal characters based on the closest relatives of *S. anastasioi*. Abbreviates: PE: Peru, BO: Bolivia, AR: Argentina, (e): endemic

Characters	<i>S. anastasioi</i>	<i>S. algens</i>	<i>S. beltranii</i>	<i>S. gamolepis</i>	<i>S. humillimus</i>	<i>S. vegetus</i>
Distribution	PE (e)	PE, BO, AR	PE (e)	PE (e)	BO, PE	PE, BO
Elevation (m)	4700–5000	4500–5000	4800–4900	4000–4750	3500–4500	4100–4800
Habit	dense caespitose mat	caespitose subshrub	caespitose shrub	dense caespitose mat	dense caespitose mat	dense caespitose mat
Plant dimensions (height, diameter)	8 cm, 1.8 m	4–6 cm, > 6 cm	2–4 cm, 5–30 cm	2–3 cm, > 1 m	2 cm, ca. 70 cm	1–2 cm, ca. 70 cm
Indumentum	few fimbriate or sericeous trichomes	glabrous	few papillose trichomes	glabrous	puberulous; 0.1–0.2 mm	glabrous
Leaf shape	linear, spatulate, rosettes	spatulate, entire, obtuse	spatulate-ob lanceolate, pinnatilobate	linear–lanceolate; rosettes	linear–spatulate, ovate	lineal-ob lanceolate
Leaf (length, width)	7–30 mm × 1.5–3 mm	10–35 × 2–5 mm	20–30 mm × 2–4 mm	7–12 × 1–1.5 mm	3–10 × 0.5–1 mm	8–12 mm × 1–1.5 mm
Leaf pubescence in margins and surface	scarcely covered by thin trichomes	glabrous	scarce presence of hispidulous trichomes	glabrous	sparsely puberulous	glabrous
Involucre (shape; length; width)	cylindrical, 14–18 × 5–7 mm	cylindrical–campanulate; 7.5–10 × 8–12 mm	cylindrical, 12–15 × 7–9 mm	campanulate; 6–7 × 10 mm	cylindrical–campanulate; 5 × 3–4 mm	campanulate, 5 mm long × 5–6 mm width
Pedicels (length)	2–4 mm	8–12 mm	12–18 mm	0.2–2 mm	0.1–1 mm	1–4 mm
Calycular bracts (shape, margin, size)	lanceolate–oblong; glabrous, 8–10 × 0.8–1.5 mm	linear; glabrous; 6–9 × 0.8–1.1 mm	linear ovate, glabrous or few ciliates, 6–9 × 0.8–1.1 mm	linear; glabrous; 6–7 × 0.8–1.2 mm	linear; glabrous; 3–4 × 0.7–1 mm	oblong–lanceolate; 8–10 × 1.0–1.2 mm
Phyllaries (shape, size)	oblong; 10–13 mm × 1.5–2 mm	linear; 7–9 × 2–3 mm	linear; glabrous (purple), 9–11 × 1.9–2.1 mm	oblong; 6–8 × 0.8–1.2 mm	oblong–lanceolate, 6–8 × 1–1.2 mm	linear–oblong; 9–11 × 1.0–1.3 mm
Phyllaries (number)	12–14	10–15	18–22	13	8	10–13
Phyllaries (margins)	glabrous	glabrous	glabrous	glabrous	glabrous	glabrous, rarely pubescent
Corolla (color)	yellow	yellow	yellow	yellow	dark yellow with purple tube	yellow
Achene (shape, texture)	cylindrical, glabrous	cylindrical, glabrous	cylindrical–conical, glabrous	cylindrical, glabrous	cylindrical, sericeous	pubescent
Pappus (length)	8–12 mm	6–8 mm	5–7 mm	6–9 mm	5–7 mm	6–8 mm
Leaf aroma	neutral scent	neutral scent	strongly scented	odorless	strongly scented	odorless

Tarata, Cordillera del Barroso, 7 December 1997, 4750–4810 m, *J. Roque 565* (USM-160856!); Moquegua, General Sánchez Cerro, Yunga, Sura-Perusa, 4685 m, 13 April 2012, *D.B. Montesinos 3815* (USM-271569!); Moquegua, General Sánchez Cerro, Yunga, Pucapampa, 4854 m, 18 February 2021, *D.B. Montesinos et al. 8514* (MOQ!).

Senecio beltranii P.González & Montesinos. PERU, Arequipa, Caylloma, Chivay, roadside along Abra Apacheta, 4800 m, 27 March 2017, *D.B. Montesinos 5150* (B-100843089!, HSP!, CUZ!, F!, HUT!, LP!)

Senecio gamolepis Cabrera. PERU, Lima, Canta, La Viuda–Cullhuay, 4250 m, 27 August 1963, *I. Meza 213* (MO-2620065!); Lima, Yauyos, Laraos, Jalcacha a Palca, 3900–4100 m, 25 May 1995, *H. Beltrán*

1687 (F-2188538!, CUZ-33929!); Junín, Yauli, La Oroya, carretera central, 4600 m, 26 April 2022, *D.B. Montesinos 9344* (HOXA!, B!); Ancash, Recuay, Huascaran National Park, Río Pachacoto, 4750 m, 13 September 1985, *D.N. Smith 11453* (HUT-024428!); Lima, Huarochirí, Casapalca, 4200 m, 5 June 1940, *E. Asplund 11418* (LP-898075!); Huancavelica, Huancavelica, Pucapampa, paso Chonta, 4500 m, 9 May 1958, *O. Tovar 2957* (LP-930364!); Huancavelica, Castrovirreyna, Choclococha, 4700 m, 3 May 1958, *O. Tovar 2851* (LP-930394!); Lima, Canta, Cullhuay, laguna Chuchun, 4200 m, 17 August 1996, *G. Vilcapoma 4474* (USM!).

Senecio humillimus Sch.Bip. BOLIVIA. La Paz, Larecaja, Sorata, 4000–4600 m, October 1868,

G. Mandon 107 (K!); La Paz, Murillo, Ventilla, Choquekkota, 3800 m, 24 November 1984, *J. Solomon 12870* (MO-3652734!); La Paz, Los Andes, Batallas, 3900 m, 11 February 1984, *J.C. Solomon & J. Kuijt 11498* (F-1972712!); Potosí, Sur Lipes, San Antonio de Lipes, 4600 m, 1966, *A.F.G. Cope s/n* (K!); La Paz, Tiahuanaco, 3850 m, December 1912, *O. Buchtien s/n* (K!); Potosí, Frías, Cordillera Kari Kari, 4600 m, 6 March 1999, *J.R.I. Wood 14601* (K-000067869!); Potosí, Taxara, 3600 m, 15 February 1988, *R. Elrich 410* (B-100641750!); La Paz, Los Andes, Batallas, 3900 m, 11 February 1984, *J. Solomon & J. Kuijt 11498* (LPB!); La Paz, Los Andes, La Paz, Mina Palcoco, 43020 m, 25 November 1979, *S. Beck et al. 1949* (LPB!); La Paz, Aroma, Patacamaya, 4750 m, 8 April 1975, *IBTA 575 a* (LPB!); Apurímac, Cotabambas, Haquira, 4525 m, 28 March 2017, *D. Montesinos 5200* (B-100843092!); La Paz, F. Tamayo, Ulla Ulla, 4400 m, 13 October 1982, *X. Menhofer X-1590* (LPB!). PERU. Puno, Puno, Pampa de Vilque, 3750 m, 11 January 1963, *DH.H. Iltis et al. 1368* (MO-2604413!); Lima, Casapalca, 4400 m, August 1890, *J. Ball s/n* (K!); Tacna, Tacna, Volcán Tacora, 4500 m, April 1926, *E. Werdermann 1137* (B-101157244!); Moquegua, Mariscal Nieto, Carumas, Interoceánica road, 4555 m, 15 March 2017, *D.B. Montesinos et al. 5103* (B-100745152!); Puno, Lampa, Toroya a Lagunillas, 4400 m, 6 December 1967, *C. Vargas 018286* (CUZ-34038!); Moquegua, General Sánchez Cerro, Ubinas, Matazo, 4471 m, 24 March 2013, *D.B. Montesinos 4021* (HSP!); Lima, Canta, Huascayo, 4500 m, 22 August 1974, *P. Waechter s/n* (USM!); Moquegua, General Sánchez Cerro, Yunga, alturas Pampilla, 4365 m, 9 April 2012, *D.B. Montesinos 3737* (USM!); Moquegua, General Sánchez Cerro, Ubinas, Querala, Gasahuasi, 4600 m, 6 April 2011, *D.B. Montesinos 3089* (USM!); Puno, Chucuito, Condor Ancocahua, 4172-4302 m, 2 March 2010, *A. Ramírez 2010-8* (USM!); Tacna, Tarata, Casire, 4700-4800 m, 3 April 1998, *M.I. La Torre 2400* (USM!); Puno, Carabaya, Corani, Chacaconiza, 4762 m, 14 January 2015, *P. González 3442* (USM!).

Senecio vegetus Cabrera. BOLIVIA. La Paz, Murillo, Valle del Río Kaluyo, 4100 m, 28 February 1987, *J. Solomon 16185* (MO-3684134!); La Paz, Murillo, La Cumbre, 4600 m, 12 February 1984, *J.C. Solomon & J. Kuijt 11501* (LPB!, MO!); La Paz, Los Angeles, 4900 m, 14 March 1982, *T. Feuerer et al. 10622b* (LPB!); La Paz, Franz Tamayo, Ulla Ulla, 4800 m, 10 August 1980, *T. Feuerer 4762b* (LPB!). PERU; Ayacucho, Huanta, Razuhuilla, 4500-4600 m, 4-6 February 1926, *A. Weberbauer 7491* (MO-933524!);

Arequipa, La Unión, Huaynacotas, Bosque de piedras, 4530 m, 18 March 2011, *D.B. Montesinos 2938* (HSP!); Moquegua, General Sánchez Cerro, Ubinas, Pirhuani, 4700 m, 20 March 2014, *D.B. Montesinos 4217a* (MOQ!); Moquegua, Mariscal Nieto, Carumas, bogland near Interoceánica road, 4555 m, 15 March 2017, *D.B. Montesinos et al. 5101* (B-100745150!, F!, CUZ!, HUT!); Moquegua, General Sánchez Cerro, Yunga, Choco-Choco a Matecocha, 4817 m, 15 August 2019, *D.B. Montesinos et al. 7709* (MOQ!); Moquegua, General Sánchez Cerro, Yunga, Pucapampa, 4854 m, 18 February 2021, *D.B. Montesinos et al. 8513* (MOQ!).

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Ethics Declaration

The author declares no conflict of interest.

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Fig. 3. *Senecio anastasioi*. A: shrubby habit observed in Perusa, Yunga at 4740 m; B: matt-forming habit observed in Cerro Mitani, Chojata (4812 m); C: branch bearing capitules as observed in the southern lower slopes of Choco-Choco mountain, 4740 m; D: detail of the growth of the stems under shadow conditions against dense matts; E: detail of the involucre in the matt-form habit; F: fruits as observed in Cerro Mitani (all images: D.B. Montesinos-Tubée)

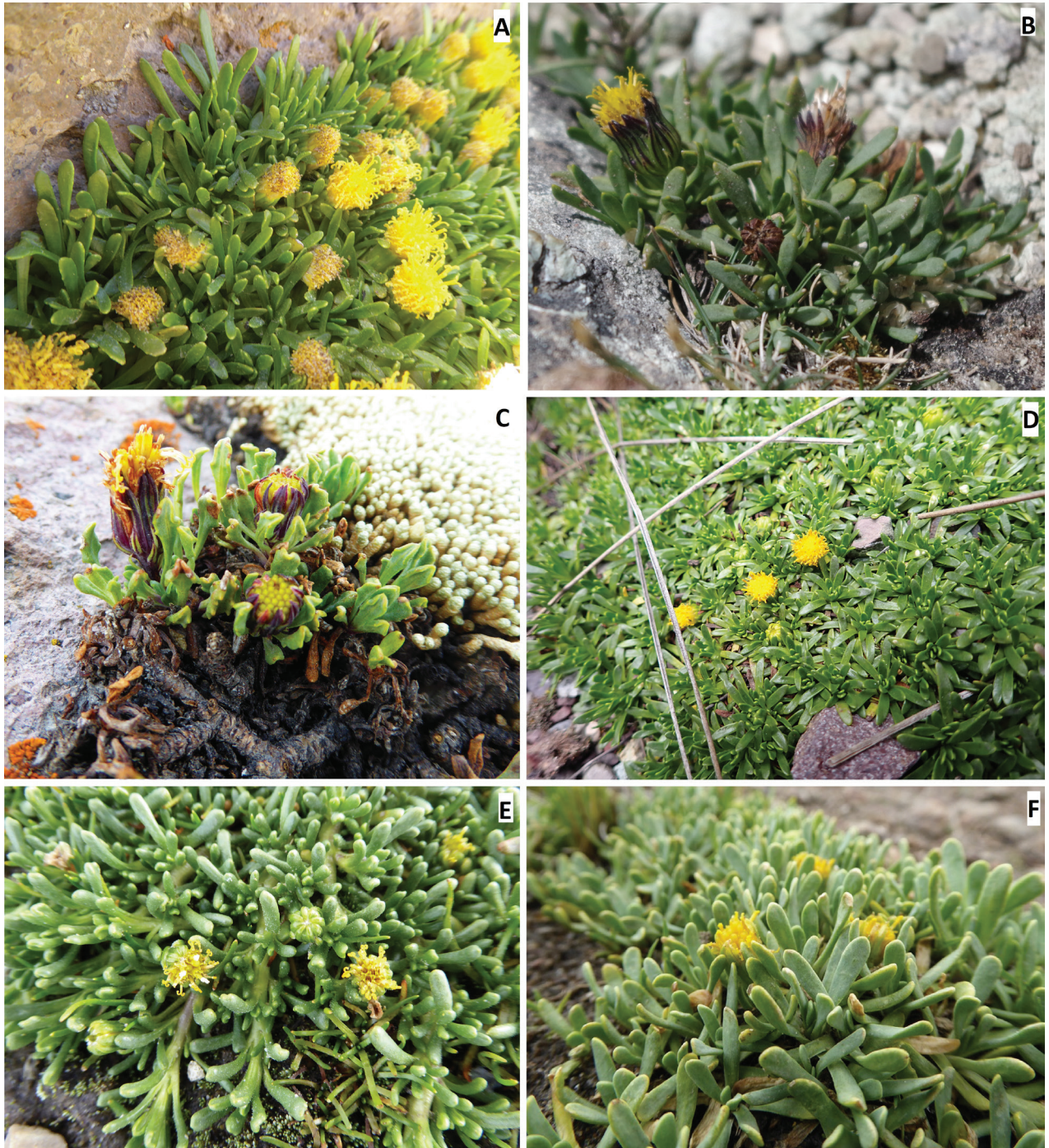


Fig. 4. Habit form of the new species and its closest allied taxa. A: *Senecio anastasioi* branch with the characteristic irregular arrangement of the long leaves; B: *S. algens* Wedd. with loose branches, near Titire, Ichuña, Moquegua, 4440 m a.s.l.; C: *S. beltranii* P.González & Montesinos and its pinnatilobulate leaf form and dark calycular bracts as observed near its type locality in Chivay, Arequipa, 4850 m a.s.l.; D: *S. gamolepis* Cabrera with rosette leaves in matt forming plants, near La Oroya, Yauli, Junín, 4770 m; E: *S. humillimus* Sch.Bip., locally known as "pampa chachacoma" bearing succulent leaves, near Pillone, Ubinas, Moquegua, 4400 m a.s.l.; F: *S. vegetus* Cabrera, with spatulate leaves and the greyish-green colour of the lamina, near Titire, Ichuña, Moquegua, 4350 m a.s.l. (all images: D.B. Montesinos-Tubée)

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Реферат. З регіону Анд у південній частині Перу описано новий вид *Senecio anastasioi* Montesinos (Asteraceae / Compositae: Senecioneae), який належить або споріднений до *Senecio* ser. *Suffruticosi* subser. *Caespitosi*. З морфологічної точки зору *S. anastasioi* подібний до *S. gamolepis* Cabrera, але чітко відрізняється від того виду більшим за розміром загальним габітусом, нерівномірним розміщенням листків, які довші та ширші за листки *S. gamolepis*, бахромчастими або шовковистими волосками, які розсіяно вкривають листову пластинку, кошиками з більшими покривними листками та листочками обгортки, які рясно опушені при верхівці, а також довгими ніжками кошиків та щетинками чубка. Виявлені та детально обговорені морфологічні відмінності між цими видами. Попередньо оцінено охоронний статус нового виду за критеріями МСОП.

Ключові слова: Asteraceae, *Senecio* subser. *Caespitosi*, Південна Америка, таксономія, Трей Анастасіо