



First record of *Ehrharta longiflora* Sm. (Poaceae, Ehrharteae) for South America

Joel Calvo, Andrés Moreira-Muñoz

Instituto de Geografía, Facultad de Ciencias del Mar y Geografía, Pontificia Universidad Católica de Valparaíso, Avenida Brasil 2241, 2362807 Valparaíso, Chile.

Corresponding author: Joel Calvo, calvocasas@gmail.com

Abstract

Ehrharta longiflora Sm. (Poaceae) is recorded for the first time in South America. A few naturalized populations were located in disturbed areas of Valparaíso (Central Chile). A brief taxonomic discussion, images, and a location map of the new record of this African grass are provided here.

Key words

Chile; Gramineae; plant introduction; Valparaíso.

Academic editor: Juliana de Paula-Souza | Received 5 January 2018 | Accepted 2 April 2018 | Published 20 April 2018

Citation: Calvo J, Moreira-Muñoz A (2018) First record of *Ehrharta longiflora* Sm. (Poaceae, Ehrharteae) for South America. Check List 14 (2): 475–478. <https://doi.org/10.15560/14.2.475>

Introduction

Ehrharta Thunb. (Poaceae, Ehrharteae) is a grass genus embracing approximately 35 species (Clayton and Renvoize 1986, Fish et al. 2015). They are annual or perennial plants, characterized by displaying pedicellate solitary spikelets arranged on racemose or paniculiform inflorescences (rarely a single spikelet). Each spikelet has 3 florets, the lower 2 sterile and reduced to lemmas and the upper 1 bisexual (usually smaller than lower 2). The glumes are 5- to 7-nerved, and the sterile lemmas (lower 2) are usually larger and different from bisexual lemma (upper one). The ligules are membranaceous or composed of hairs, and the caryopses are elliptic and laterally compressed.

The genus *Ehrharta* is naturally distributed from southern Africa to Ethiopia and Yemen (Fish et al. 2015). Some species are naturalized in Indonesia, New Zealand, Australia, western Mediterranean Basin, western North America, and South America (Edgar et al.

1991, Barkworth 2007, Rúgolo 2012, Fish et al. 2015, Euro+Med 2006–). In North America 3 species are established in California—*E. calycina* Sm., *E. erecta* Lam., and *E. longiflora* Sm. (Barkworth 2007)—whereas in South America only *E. villosa* J.H. Schult. was reported from a restricted area of the Atlantic coast of Buenos Aires, Argentina (Rúgolo 2012).

Due to ongoing floristic studies in Valparaíso and its peri-urban areas (Central Chile), we located a few naturalized populations of *E. longiflora*, which represents the first report of this alien species for South America (Fig. 1). These populations occur in disturbed areas such as wastelands and roadsides, along with other naturalized species, for example *Carduus pycnocephalus* L., *Chrysanthemum coronarium* L., *Hordeum murinum* L., *Lolium multiflorum* Lam., *Parietaria judaica* L., and *Tropaeolum majus* L. So far, it is uncertain when this weed arrived in Valparaíso, but new findings would contribute to elucidate this issue.

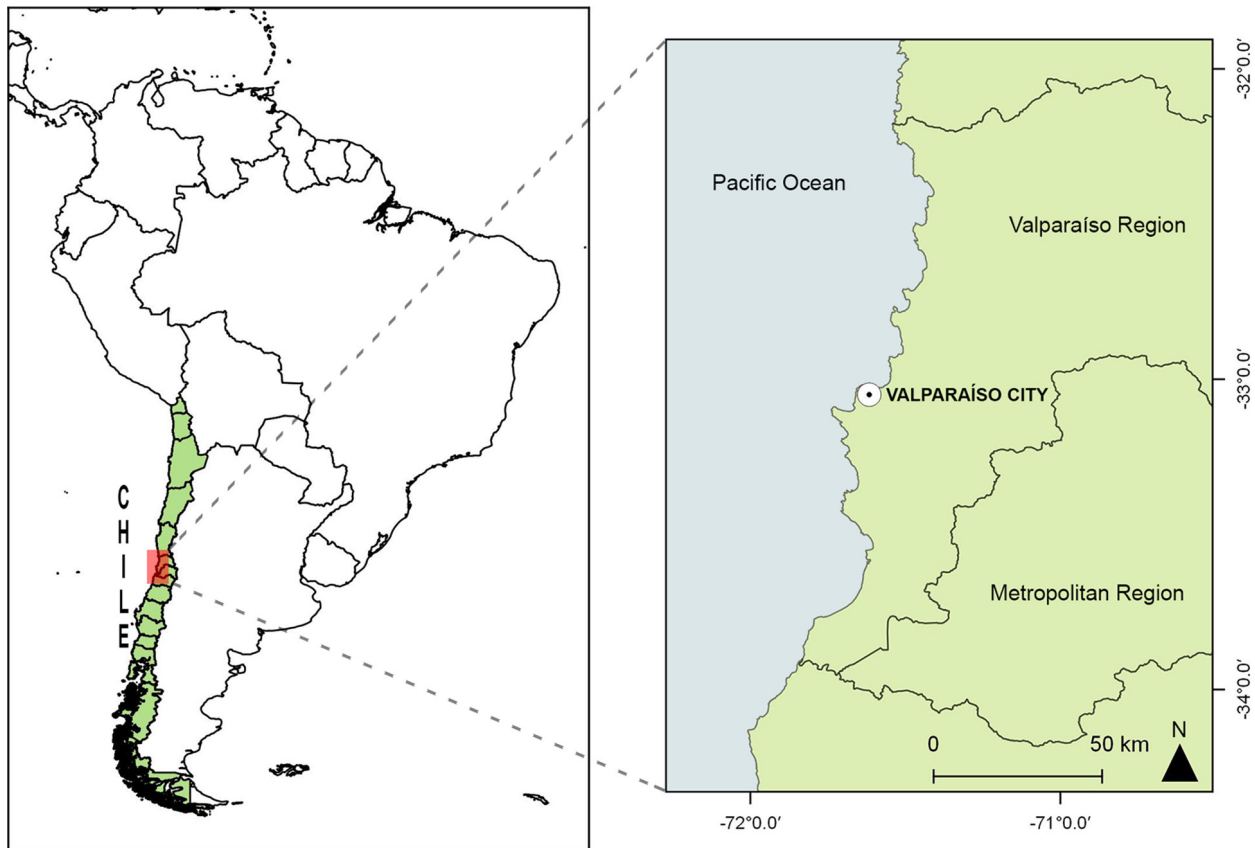


Figure 1. Location of the new record of *Ehrharta longiflora* in Chile (Valparaíso).

Methods

We used Clayton and Renvoize (1986) and Fish et al. (2015) to identify the collected specimens of the new finding. Qualitative characters were studied directly by eye or with the aid of binocular lenses, while the quantitative characters were recorded using a Mitutoyo digital caliper, CD-15DC. Figures were edited using software Adobe Photoshop CS6 (Adobe Systems Incorporated) and the map was produced in QGIS 2.14.20 (QGIS Development Team). The herbarium specimens were deposited at SGO and CONC (acronyms follow Thiers 2017).

Results

Ehrharta longiflora Sm., Pl. Icon. Ined. 2: pl. 32. 1790.
Figure 2

Leafy erect annual. Culms 40–75 cm, often geniculate basally. Leaf-sheaths obviously nerved, keeled, submembranaceous, glabrous or almost so; auricles ciliate; ligules ca 2.5 mm, lacerate; leaf-blades 4.5–25 cm long, 0.5–0.9 cm wide, flat, usually with some scattered submarginal trichomes, margins scaberulous. Inflorescence paniculiform, 10–24 cm long, erect, narrow, with branches usually \pm pendulous; pedicels filiform. Spikelets 15–27 mm long including the awns. Glumes unequal, ca 1/3 as long as the spikelet, membranaceous, usually purple-coloured. Sterile lemmas similar, indurate, hispidulous upward, with tufted hairs at the base,

conspicuously awned at the apex (awns 6–17 mm long, hispidulous); upper sterile lemma with a short hinge-like appendage at the base. Bisexual lemma glabrous or almost so, unawned. Caryopses ca 4.4 mm long, 1.5 mm wide, elliptic, laterally compressed.

Specimen examined. CHILE. Valparaíso Region: Valparaíso, cerro San Juan de Dios, 33°03'09" S, 071°37'32" W, 90 m, 03 Oct. 2017, J. Calvo 7585 (SGO, CONC).

Key to the *Ehrharta* species reported in South America

1. Glumes $\frac{1}{3}$ as long as the spikelet; sterile lemmas sparsely hispidulous, awned *E. longiflora*
- 1'. Glumes almost as long as the spikelet; sterile lemmas profusely hairy, mucronate or shortly aristate
..... *E. villosa*

Discussion

Ehrharta longiflora is easily recognizable by the glumes clearly shorter than the spikelet, usually purple, and the sterile lemmas long-awned (awns 6–17 mm long). Any confusion is very unlikely with the other species of *Ehrharta* introduced in South America, that is, *E. villosa*. They can be differentiated by the length of the glumes (1/3 as long as the spikelet in *E. longiflora* vs almost as long as the spikelet in *E. villosa*), and the indumentum and apex of the sterile lemmas (sparsely hispidulous, awned in *E. longiflora* vs profusely hairy, mucronate or shortly aristate in *E. villosa*).

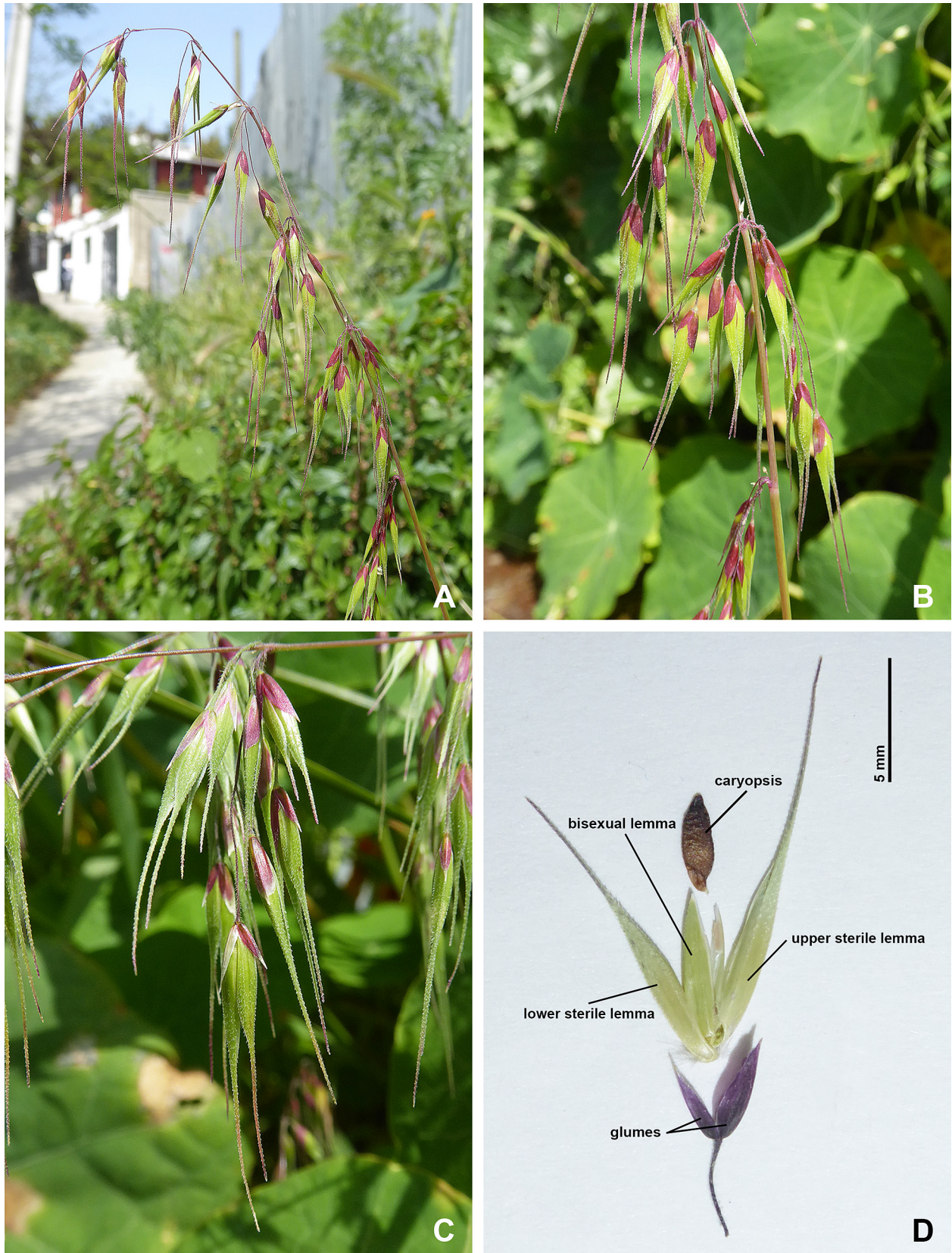


Figure 2. *Ehrharta longiflora* Sm. **A.** Inflorescence. **B.** Detail of the inflorescence. **C.** Spikelets. **D.** Dissected spikelet. Photographs by J. Calvo.

Ehrharta longiflora is native to western South Africa (Fish et al. 2015), and it is a naturalized weed in southern Australia, New Zealand, California, and Gran Canaria of the Canary Islands (Acebes et al. 2004). This species was also reported in Belgium (Auquier 1980) and Catalonia (Casasayas 1989), but it seems that these populations

remain in confined areas. The presence of this species in Chile has been detected for the first time in 2017 (Fig. 1). The few known populations still only occur in urban areas, which lead us to think that it is a recent introduction. However, the invasive potential registered in southern Australia and California, where the climate is

similar to Central Chile, alerts that its spreading might be quick.

Acknowledgements

Laurent Gohy from the Herbarium Universitatis Leodien-sis (LG) kindly helped us to locate a specimen collected in Belgium. This work has been funded by FONDECYT from Chile by means of a postdoctoral fellowship of the first author (project no. 3170270).

Authors' Contributions

JC and AMM identified the species and wrote the manuscript.

References

- Acebes JR, Arco M, García A, León MC, Pérez PL, Rodríguez O, Wildpret W, Martín VE, Marrero MC, Rodríguez ML (2004) Spermatophyta. In: Izquierdo I, Martín JL, Zurita N, Arechavaleta M (Eds) Lista de especies silvestres de Canarias (hongos, plantas y animales terrestres). Consejería de Medio Ambiente y Ordenación Territorial, Gobierno de Canarias, Tenerife, 99–143.
- Auquier P (1980) Graminées adventices nouvelles ou intéressantes pour la flore belge, II. Bulletin de la Société Royale de Botanique de Belgique 113: 3–13. <http://www.jstor.org/stable/20793814>
- Barkworth ME (2007) *Ehrharta* Thunb. In: Barkworth ME, Capels KM, Long S, Anderton LK, Piep MB (Eds) Flora of North America. North of Mexico, vol. 24. Magnoliophyta: Commelinidae (in part): Poaceae, part 1. Oxford University Press, New York, Oxford, 33–36.
- Casasayas T (1989) La flora al·loctona de Catalunya. Catàleg raonat de les plantes vasculares exòtiques que creixen sense cultiu al NE de la Península Ibèrica. PhD thesis, Barcelona, Spain: Universitat de Barcelona, 880 pp. <http://hdl.handle.net/2445/36121>
- Clayton WD, Renvoize SA (1986) Genera Graminum. Grasses of the World. Kew bulletin. Additional series XIII. Her Majesty's Stationery Office, London, 389 pp.
- Edgar E, Connor HE, Shand JE (1991) Checklist of oryzoid, arundinoid, and chloridoid grasses naturalised in New Zealand. New Zealand Journal of Botany 29: 117–129. <https://doi.org/10.1080/0028825X.1991.10416715>
- Euro+Med (2006–) Euro+Med PlantBase—the information resource for Euro-Mediterranean plant diversity <http://ww2.bgbm.org/Euro-PlusMed/>. Accessed on: 2017-12-31.
- Fish L, Mashau AC, Moeaha MJ, Nembudani MT (2015) Identification guide to southern African grasses. An identification manual with keys, descriptions and distributions. Strelitzia 36. South African National Biodiversity Institute, Pretoria, 798 pp.
- Rúgolo ZE (2012) *Ehrharta* Thunb., nom. cons. In: Zuloaga FO, Rúgolo ZE, Anton AM (Eds) Flora vascular de la República Argentina, vol. 3(1). Graficamente Ediciones, Córdoba, 238–239.
- Thiers B (2017) Index Herbariorum: a Global Directory of Public Herbaria and Associated Staff. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/science/ih/>. Accessed on: 2017-12-31.