

Aloina humilis sp. nov. (Bryopsida, Pottiaceae) from the Canary Islands

by

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With 18 figures and 1 table

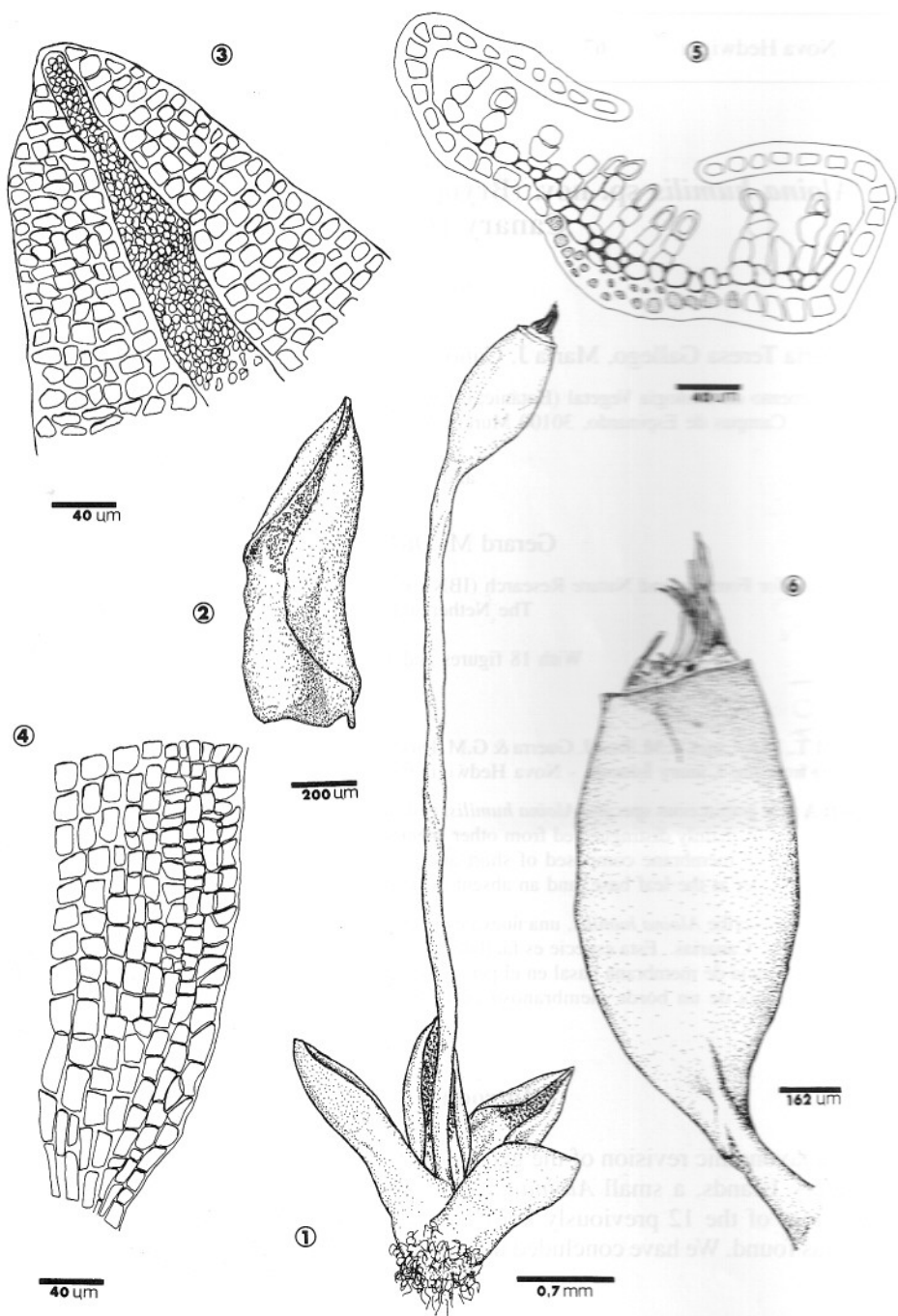
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Abstract: A new pottiaceous species, *Aloina humilis*, is described from dry areas of the Canary Islands. The new species is mainly distinguished from other species of the genus by its small size, presence of a peristomial basal membrane composed of short and nearly straight teeth, absence of differentiated membranous border at the leaf base, and an absent or weak costa.

Resumen: Se describe *Aloina humilis*, una nueva especie de la familia Pottiaceae, encontrada en áreas secas de las Islas Canarias. Esta especie es fácilmente distinguible de otras del género por su pequeño tamaño, la presencia de membrana basal en el perístoma, que está compuesto por dientes cortos y casi rectos, la ausencia de un borde membranoso en la base de los filidios y un nervio poco o nada diferenciado.

Introduction

During a taxonomic revision of the genus *Aloina* from the Mediterranean Basin and the Canary Islands, a small *Aloina* with an original set of characters that do not match those of the 12 previously known *Aloina* species (Delgadillo 1975, Zander 1993) was found. We have concluded that these samples correspond to a new species.



Figs. 1-6. *Aloina humilis*. 1. Habit. 2. Leaf. 3. Leaf apex. 4. Basal laminal cells. 5. Leaf transverse section. 6. Capsule. (All from type).

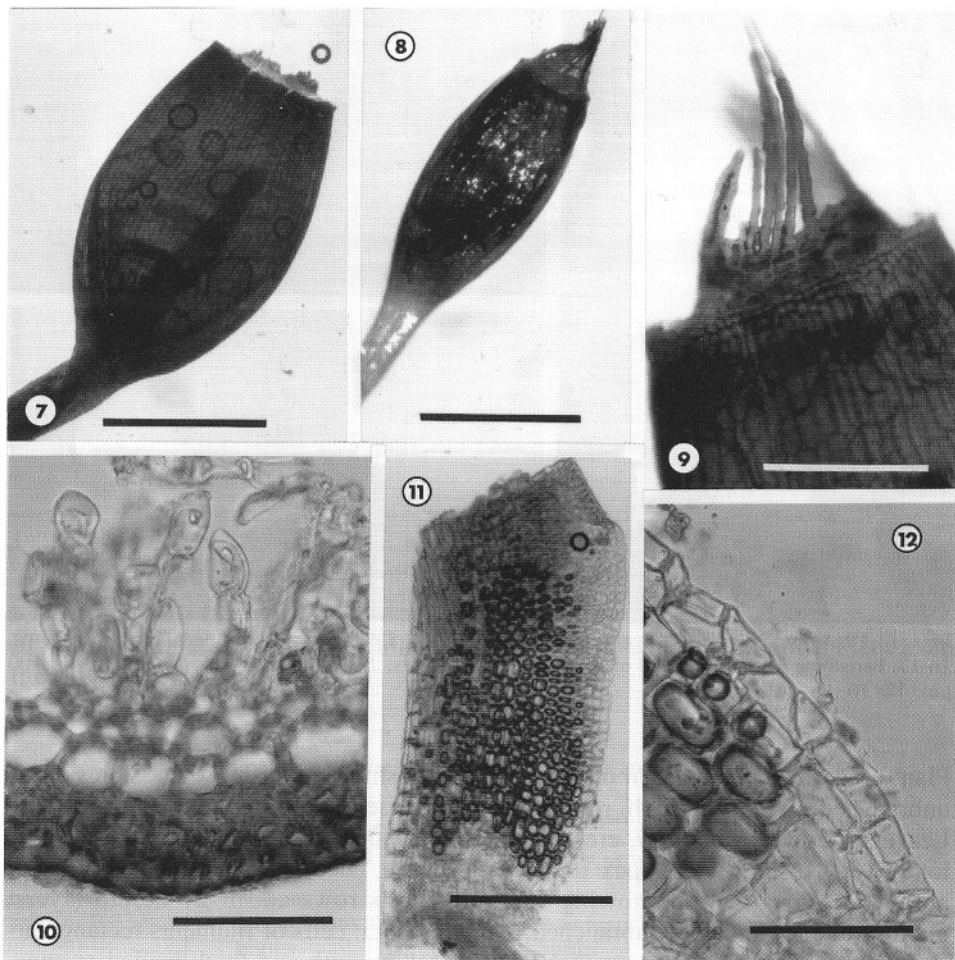
Description

Aloina humilis M.T. Gallego, Cano & Ros sp. nov.

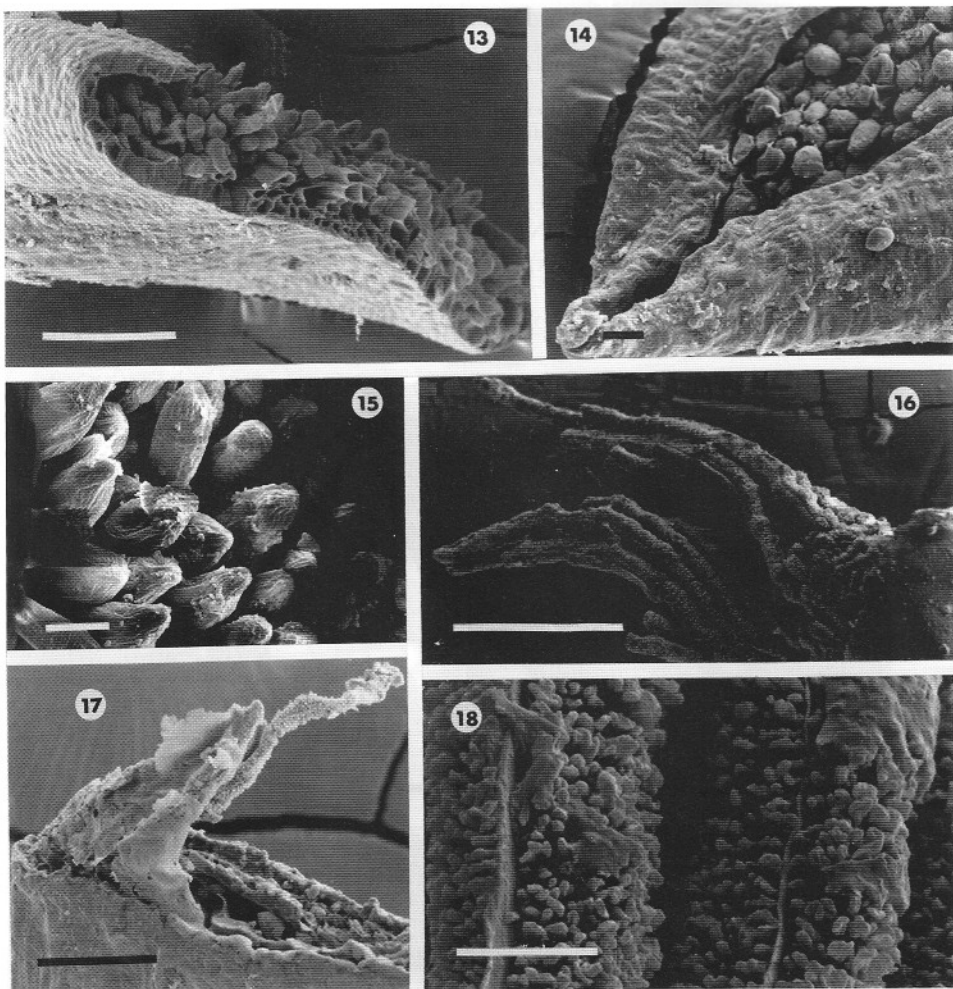
Fig. 1-18

Planta 1.7-3.2 mm alta, sporophyto incluso. Philidia margine distincto carentia; apice rotuncato ad obtusum, aliquando cucullato; nervo parce distincto praedita, stereidis 1(2) stratis. Peristomium simplex, dentibus constans brevissimis, membrana basali non deficiente.

HOLOTYPE: SPAIN. CANARY ISLANDS: Fuerteventura, N slopes of Mont Fenduca, Morro de los Olivos, 3 km NNE of Pájara, G.M. Dirkse, 12-II-1992 (MUB 6801). Studied specimens (Paratypes): El Hierro, W of Valverde, Ermita Virgen de la Pena, Las Lajas, G.M. Dirkse, 17-III-1991 (Herb. Dirkse 8429). Tenerife, 2.5 km E of Arico Viejo, G.M. Dirkse, 25-III-1991 (Herb. Dirkse 8510).



Figs. 7-12. *Aloina humilis*. 7-9. Capsules and peristome teeth. 10. Leaf transverse section. 11. Leaf basal part. 12. Basal marginal cells. Scales: 7, 8: 500 μ m; 9: 200 μ m; 10: 65 μ m; 11: 150 μ m; 12: 88 μ m. (All from type).



Figs. 13-18. *Aloina humilis*. 13. Leaf transverse section. 14. Leaf apex. 15. Terminal cells of filaments. 16-17. Peristome teeth. 18. Detail of peristome teeth. Scales: 13: 100 μm ; 14, 15: 10 μm ; 16, 17: 100 μm ; 18: 10 μm . (All from type).

Plant gregarious (growing in open turfs), brownish or greenish brown; stems erect, unbranched, to 0.5 mm high, rounded in transverse section, without central strand. Leaves imbricate when dry, erect-patent when moist, ovate-lingulate, 0.9-2.2 mm long, 0.3-0.75 mm wide; apex rounded to obtuse, cucullate or not; costa weak or absent, in cross-section showing 1-2 guide cells rows and 1(-2) stereid layers; photosynthetic filaments unbranched, 2-4 cells high; cells of filaments rectangular-quadrangle, thin-walled, the terminal cell conical, smooth and thick-walled at apex; upper laminal cells quadrate or short-rectangular, 10-12 μm long; basal cells rectangular, 30-60 μm long, basal marginal cells not forming a membranous border. Autoicous, perigonial leaves 1.3×0.3 mm, shorter than perichaetial leaves. Seta

erect, twisted to right above, to left below, reddish brown, 4.2-7 mm long; capsule erect, ovoid, 0.6-1 mm long; annulus with 1-2 rows of rectangular cells; peristome teeth short, nearly straight, with 1-3 rows of cells of basal membrane projecting above mouth of capsule; operculum short-conical 0.4 mm long; spores spherical, granulate, 20-22.5 μ m in diameter. The epithet comes from the Latin *humilis* and indicates that the stature of a plant is not particularly small, but much smaller than other related species of *Aloina*.

Habitat and distribution

The new species is currently known from Tenerife, Lanzarote, and Hierro Islands, occurring on volcanic, dry and sunny slopes and screens in *Erica* formations. Also in other habitat with xerophytic species.

Discussion

Aloina humilis is characterized by the small size of the gametophyte and sporophyte, presence of a basal membrane to the peristome composed of short, nearly straight teeth, absence of differentiated membranous border at the leaf base and an absent or weak costa. The most similar species in the Mediterranean Basin to *A. humilis* is *A. bifrons*. Both taxa share the following features: basal marginal cells not forming a membranous border, weak or absent costa and a developed basal membrane of peristome. Nevertheless, *A. bifrons* can be easily differentiated from *A. humilis* by the presence of a hyaline hair point on the leaves.

A basal membrane in the peristome and the absence of a differentiated membranous border at the base of the leaf are present in other species, such as *Aloina ambigua* and the American species, *A. apiculata* and *A. hamulus*, although the presence of an undifferentiated costa in *A. humilis* separates it from the other three taxa. On the other hand, *A. hamulus* and *A. apiculata* possess other features in the gametophyte such as the presence of papillae on the dorsal laminal face and the apex form (apiculate in *A. apiculata* and stronger cucullate in *A. hamulus*), which distinguish them from the rest of species.

Table 1. - Comparison of *Aloina humilis*, *A. ambigua*, *A. bifrons* and *A. brevirostris*

	<i>A. humilis</i>	<i>A. ambigua</i>	<i>A. bifrons</i>	<i>A. brevirostris</i>
Costa	absent or weak	present	absent or weak	absent or weak
basal marginal cells	without membranous border	without membranous border	without membranous border	with membranous border
leaf hair point	absent	absent	present	absent
Peristome teeth	short and nearly straight	long and twisted	long and twisted	long and twisted

Also, *A. humilis* may be related to *Aloina brevirostris* because both species possess a weak or absent costa showing only 1-2 stereid layers (Bijlsma et al. 1985) and a differentiated basal membrane of the peristome, however *A. humilis* does not have a membranous border at the leaf base (Table 1).

Acknowledgements

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