

ADDITIONAL TAXONOMIC FEATURES OF *PINGUICULA CHILENSIS*

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Recently, Gluch (2017) synonymized the name *Pinguicula chilensis* Clos with *P. antarctica* Vahl and described two new species *P. australandina* Gluch and *P. nahuelbutensis* Gluch, referring to the plants previously known as “*P. chilensis*”.

The main reason for which Gluch (2017) considered that the isotype of *Pinguicula chilensis* (specimen *Gay 169* (P photo!), designated as the lectotype by Dominguez *et al.* (2017) and held at the Muséum national d’Histoire naturelle (P), in Paris) is in fact *P. antarctica*, is the length of the fruiting scapes. On that specimen, Gluch (2017) measured 9.5 cm for the longest scape, but considered that scapes of *P. chilensis* (referred to as *P. australandina*) can only reach 2-5 cm long. This range is based on Ernst (1961), and was adopted literally by Casper (1966), and later by Lampard *et al.* (2016). However, the variability of *P. chilensis* has been further investigated since Casper’s monograph of the genus *Pinguicula* (Casper 1966). For example, Rodríguez *et al.* (2000) extended the range of the flowering scape length to 2-8 cm. Recently, Michail Belov published pictures from the Laguna del Maule, in Talca province in Chile (Figs. 1 & 2). Those individuals display the typical lilac flowers with long conical spur of *P. chilensis*, as described by Clos (1849), Ernst (1961), and Casper (1966). Moreover, the Laguna del Maule represents one of the northernmost location of this species, very far from any populations of the *P. antarctica* distribution range known to date. No doubt that those specimens clearly belong to *P. chilensis sensu* Ernst (1961) and Casper (1966). Fortunately,



Figure 1: A flowering *Pinguicula chilensis* in its habitat at the Laguna del Maule, Provincia de Talca, Chile. Photograph by Michail Belov.



Figure 2: *Pinguicula chilensis* flowers and entire flowering plants collected at the Laguna del Maule, Provincia de Talca, Chile. Photograph by Michail Belov.

Michail Belov also took pictures of the flowering scapes against a ruler (Fig. 2). Most scapes are not removed entirely, as the scape bases are mostly violet whereas they are supposed to be green when fully pulled out. However, the longest entire scape is 7 cm long. In addition, although unmeasured, the scape shown on Figure 1 looks even longer. In this respect, the measure of 9.5 cm on the lectotype should not be regarded as inconsistent with *P. chilensis* characteristics.

Nonetheless, a matter of doubt could remain because of the location of Gay's collection which is used as lectotype (*Gay 169 (P)*). This plant originates from "el Corral, cerca de Daglipulli" (Valdivia province). Corral is a coastal city, near Valdivia, and Daglipulli is a small village close to La Unión (Ranco province), situated at an elevation of *ca.* 80 m a.s.l. Such environmental conditions are not the expected ones for *Pinguicula chilensis* (Casper 1966; Rodríguez *et al.* 2000; Lampard *et al.* 2016). However, a small mountain range called Cordillera Pelada occurs between both localities, peaking at 1042 m a.s.l. Rodríguez *et al.* (2000) mentioned that *P. chilensis* can be found at elevations as low as 1000 m a.s.l. and *Pinguicula chilensis* is considered to occur at lower elevations to the south, as climate becomes colder (Lampard *et al.* 2016). It would then not be inconceivable to find a location at such low elevation at the latitude of Corral.

In addition, Gluch (2017) discarded the possibility that this species could occur on the Cordillera Pelada based on the fact the peat-bogs occurring on this mountain range are made of "typical Antarctic vegetation consisting of the dominating species *Donatia fascicularis* [Stylidiaceae], *Astelium pumila* [Asteliaceae], *Sphagnum acutifolium* [Sphagnaceae], and *Tribeles australis* [Escalloniaceae]. In between this vegetation, Reiche stated that *Carpha viridis* [Cyperaceae], *Pinguicula chilensis*

[Lentibulariaceae], *Acaena pumila* [Rosaceae], *Drosera uniflora* [Droseraceae], and *Schizaea fistulosa* [Schizaeaceae] can be found". However, Rodriguez *et al.* (2000) stated that *P. chilensis* does occur among *Donatia fascicularis*, *Astelia pumila*, *Sphagnum magellanicum*, and *Tribeles australis*.

Finally, a body of noteworthy elements can be noticed when reviewing the original description of *Pinguicula chilensis* (Clos 1849). Firstly, both *P. chilensis* and *P. antarctica* are described in this work, thus the author knew both species at that time. Secondly, Clos (1849) mentioned about *Pinguicula chilensis*: "bohordos [...] terminados por una sola flor poco colgante" (scapes are terminated by a single flower only shallowly inclined), although he added that "se habian ya concluidas las flores" (flowers were already faded). With little doubt, Clos seems to have described the skyward-facing flower of *P. chilensis*, as opposed to *P. antarctica* which produces flowers held horizontally. This description also suggests that Clos has observed *P. chilensis* flowers and its diagnostic characters such as the spur shape, but for an unknown reason, he did not describe it. One can only imagine that Clos really knew what he was doing when describing *P. chilensis*.

All-in-all, those reasons support the fact that Clos' *Pinguicula chilensis* is a distinct species from Vahl's *P. antarctica* and that Gluch's *P. australandina* is a later synonym of *P. chilensis* Clos based on a different interpretation of the morphological and ecological variations of that species:

*Pinguicula chilensis* Clos = *P. australandina* Gluch, *syn. nov.*

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