

Some Notes on the Chilean Relatives of *Plantago patagonica* Jacq.

BY

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The present notes were made in the Philippi Herbarium and are based entirely upon the collections available to me in the Museo Nacional in Santiago. They are an attempt to bring a little order into this group of Chilean plants confused by Reiche.

My interest in the Chilean allies of *Plantago patagonica* arising from the necessity of determining some collections from Atacama and Antofagasta, my chief motive has been the clarifying of the species of the group known from northern Chile. I have not had the time nor inclination to wrestle with the complexities of *P. hispidula*, the common, perhaps aggregate, species of central Chile having studied it only so far as was necessary to satisfy myself that the other species recognized were unquestionably distinct. The descriptive matter given is primarily concerned with structures of flowers and inflorescence, since undoubtedly these furnish the most important sources of diagnostic characters. Strangely these structures were but briefly, if at all, described by the older writers on the group. I have admitted considerable intraspecific variation in the amount of pubescence and in leaf-form, for these characters do not appear to me to merit the diagnostic value for specific differentiation accredited them by past writers. In the preparation of this brief paper it has not been possible to consult recent literature. However, it seems very unlikely that many changes would be called for had I opportunity to do so, for it will be noted that the northern species treated were first studied by Philippi whose types have been available to me.

My good friend Professor C. E. Porter having obligingly placed the pages of his admirable *Revista* at my disposal, I am very glad of the opportunity to publish

these short notes where they will be most accesible to chilean botanical workers.

Plantago hispidula R. & P. Fl. Peruv. i. 51, t. 78 (1798).—Under the above name I associate a variable, though certainly natural aggregate to which, I judge, the following names apply,—*P. tumida* Link, *P. callosa* Colla, *P. macrosperma* Steud., *P. rancaguae* Steud., *P. mollis* H. & A. and (?) *P. Steinheilii* Barn. From an examination of the types I place the following in this group also, —*P. stenopetala* Ph., *P. disticha* Ph., and *P. albida* Ph. There is considerable variation in shape of the corolla, in pubescence, in shape of bracts and in length of capsule. With the time available, however, I have been unable to discover sufficient concomitancy of characters to warrant the segregation which I feel can perhaps be made after sufficient study. I am confident, however, that the possible segregates will be critical ones and not so well marked as those indicated below. The forms of *P. hispidula* are best known from about Santiago where they are the common annual plantains and have been abundantly collected. They range as far south as Valdivia and north to the southwestern parts of the Department of Copiapó.

Plantago litorea Ph.—Annual; peduncles spreading or somewhat erect, glabrescent or more or less canescent with a dull appressed pubescence; leaves linear; heads globose to cylindrical, several-to 30-flowered, green parts glabrate or somewhat pubescent; bracts broadly ovate to circular-ovate, obtuse, ca. 2 mm. long; reaching to middle of the subtended calyx, green tissue ca. 1/3 of total width, not all prolonged above; calyx 2.5-3 mm. high, lobes broadly obvate with apex rounded, green tissue ca. 1/4-1/3 width of lobe and not at all prolonged above; corolla-lobes 0.8-1.3(-2) mm. long, narrowly triangular, usually acutish; capsule ovate-spherical, 2-4 mm. long, 2-seeded, not conspicuously protruded from the calyx; seeds elliptical in outline, not thick, 2.5-3 mm. long, margin winged.—Fl. Atacam. 46 (1860). *P. glabriuscula* Ph. Anal. Univ. Chile xci. 268 (1895). *P. oligantha* Ph. Anal. Univ. Chile xci. 270 (1895). *P. brachyantha* Ph. Anal. Univ. Chile xci. 270 (1895). *P. rancaguae* of Ph. Anal. Univ.

Chile xci. 273 (1895) and of Reiche, Fl. Chile vi. 121 (1911), in part.—CHILE: Caldera, 1853, *Philippi* (TYPE of *P. litorea*); Caldera, 1876, *collector not given*; Caldera, 1887, *collector not given*; Caldera, 1887, *Borchers*; Copiapó, 1887, *Rivaro* Prov. Copiapó, 1885, *collector not given*; Piedra Colgada, 1885, *collector not given*; Banderrias, *Geisse*; Yervas Buenas, 1886, *Philippi*; La Serena, 1893, *Philippi*; La Serena, 1883, *Philippi* (under *P. arneriifolia*, probably TYPE of *P. brachyantha*); La Serena, 1878, *Philippi*; Arqueros, 1836, *Gay 1971* (TYPE of *P. oligantha*); Frai Jorge, 1893, *collector not given*; Prov. Centrales, *collector not given*; Cajon del Rio Aconcagua, 1860, *collector not given*; San Isidro, Quillota, 1874, *collector not given*; Cerro de Bravo, Santiago, 1881, *collector not given* (TYPE of *P. glabriuscula*).

This is the common *Plantago* of the Copiapó-Vallenar region where it has been much collected. It is a very readily recognized because of its broadly obovate calyx-lobes which are scarious to the rounded apex and do not have the green tissue at all prolonged above. Reiche confused the species with *P. hispidula*, from which it can be distinguished at a glance. It is very variable in the abundance of pubescence. It is, however, usually only sparsely pubescent and in drying commonly assumes a characteristic brownish green or black. The bracts and calyx-lobes are quite uniform in size and shape. The only notable variation in corolla is that in *Gay 1972*, the type of *P. oligantha*, in which the lobes are very coarse and ca. 2 mm. long.

***Plantago desertorum* Ph.**—Annual; usually more or less silvery with a fine appressed silky pubescence; peduncles erect or ascending, becoming 1.5-2 dm. tall; leaves linear or oblance-linear; heads globose to cylindrical, several-to 30-flowered, green parts somewhat villous; bracts lanceolate or lance-ovate, 2-4 mm. long, reaching $\frac{3}{5}$ - $\frac{4}{5}$ height of subtended calyx, green tissue ca. $\frac{1}{3}$ of total width of lobe and usually prolonged as an attenuate tip; calyx ca. 3 mm. high; calyx-lobes elliptical or obovate, acute or obtuse through the prolongation of the green tissue which latter forms ca. $\frac{1}{3}$ total width of lobe; co-

rolla-lobes oblong, obtusish, 0.8-1 mm. long; capsule ovate-spherical, ca. 3(-4) mm. long, 2-seeded, not conspicuously protruded from the calyx; seeds elliptical, margins incurved.

Var *typica*.—Corolla-lobes ca. 1. mm. long; seeds 3-3.5 mm. long, frequently narrow-winged.—*P. desertorum* Ph. Fl. Atacam. 46 (1860).—CHILE: Paposo, 1853, *Philippi*; Hueso Parado, 1853, *Philippi* TYPE of *P. desertorum*).

Var *brachyantha* (Ph.), comb. nov.—Corolla-lobes ca. 0.8 mm. long; seeds shiny, 2-3 mm. long, the wingless margin strongly incurved.—CHILE: Cachinal de le Costa, 1853, *Philippi* TYPE of *P. brachyantha*.—In this variety the plant is more silky and has seeds that are smaller, more shiny and with margins more strongly inflexed than in the var. *typica*. It is a common plant along the Department of Taltal.

Plantago bracteosa Ph.—Annual with a rather sparse appressed pubescence; leaves oblanceolate or linear, acute, uninerved; peduncles spreading; heads few to 20-flowered, green parts appressed pubescent; bracts lanceolate, green tissue ca. 1/4 of total width of lobe and strongly prolonged above (frequently to form a recurving tip) lowest pair of bracts 5-8 mm. long and clearly surpassing the subtended calyces, upper bracts 4-5 mm. long and almost or quite reaching the tips of the adjacent calyces; calyx ca. 5 mm. high, lobes elliptical, green tissue 1/4-1/3 the total width and prolonged above as a short acuminate tip; corolla-lobes oblong, acute, ca. 1 mm. long; capsule ovate, 3-4 mm. long, 2-seeded, not protruded from calyx; seeds 2.5-3 mm. long, boat-shaped, frequently with a narrow asymmetrical wing.—Anal. Univ. Chile xliii. 534 (1873). *P. limarensis* F. Ph. Anal. Univ. Chile xci. 266 (1985). *P. patagonica* of Reiche, Fl. Chile vi. 123 (1911). *P. patagonica*, var *limarensis* Reiche, l. c.—CHILE: Parque Zoras, Valparaiso, *Borchers* (TYPE of *P. bracteosa*); mouth of Limari River, 1893, *collector not given* (TYPE of *P. limarensis*).—Reiche treats this as *P. patagonica* Jacq., but for phytogeographical reasons, it is most unlikely that this rare coastal plant could be the same as the Patagonian plant described by Jacquin.

Plantago subtrinervis Ph.—Annual with appressed silky pubescence; leaves narrowly oblanceolate, acute, triplinerved; peduncles ascending or widely spreading; heads globose to oblong, few-to 20-flowered, green parts rather densely appressed pubescent; bracts ovate, acute, 4-5 mm. long, reaching $1/2$ - $2/2$ the height of the subtended calyces, green tissue broad and shortly prolonged above to form a frequently recurved tip; calyx ca. 5 mm. high; calyx-lobes elliptical-ovate, acutish, green tissue $1/5$ - $1/4$ of total width of lobe and slightly prolonged above; corolla-lobes oblong, obtuse, 1-1.5 mm. long; capsule broadly ovate, 5-6 mm. long, not much if at all protruded from calyx, 2-seeded; seeds ca. 5 mm. long, shallowly concave with narrowly winged margins.—*Linnaea* xxxiii. 221 (1864). *P. heterophylla* Ph. *Anal Univ. Chile* xci. 265 (1895).—CHILE: Quilimari, 1862, *Landbeck* (TYPE of *P. subtrinervis*); Litoral de Limari, 1904, *Reiche*; collection without data (TYPE of *P. heterophylla*).—Very closely related to *P. bracteosa* and it is quite possible that future collecting will produce forms that will necessitate the reduction of that species to a mere variety of the present one. The species is very well characterized by its coarse habit, its broad 3-nerved leaves, thickened stem and large flowering parts. It is most certainly distinct from *P. hispidula* with which *Reiche* confused it.

PROVISIONAL KEY TO THE SPECIES DISCUSSED

- Calyx-lobes broadly obovate, apex rounded, scarious tissue extending to apex, green tissue not projecting above beyond the scarious
 *P. litorea*.
- Calyx-lobes more or less elliptical, at most elliptical-ovate or elliptical-obovate, acute or acuminate or occasionally obtuse, green tissue prolonged beyond the scarious tissue.
 Capsule elliptica, 4-6 mm. long..... *P. hispidula*.
- Capsule decidedly ovate and commonly broadly so.

- Calyx ca. 3 mm. long; bracts 2-4 mm.
long; slender small-flowered plants of
northern Chile, Dept. Taltal..... *P. desertorum*.
- Calyx ca. 5 mm. long; bracts 4-8 mm.
long; coarse plants of north-central
Chile.
Lowest pair of bracts 5-8 mm. long;
clearly surpassing the subtended
calyces; capsules 3-4.5 mm. long;
leaves uninerved..... *P. bracteosa*.
- Lowest pair of bracts 4-5 mm. long,
not surpassing the calyces; capsules
5-6 mm. long; leaves triplinerved..
..... *P. subtrinervis*

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