

ATRIPLEX POWELLII AND CABRI LAKE

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One August day in 1976 I visited Cabri Lake and collected, among other specimens, the rare plant *Atriplex powellii* S. Wats. As I have remarked earlier in the Blue Jay, if one picks an interesting-looking stretch of terrain from the map and goes there, there is always a fair chance of finding something out of the usual. The occasion of reporting this seldom collected plant will give opportunity to describe Cabri Lake, as most people have not been there. But first to the plant. It was collected as #3225, August 15, 1976, at a point 10 or 12 miles south of Mantario on L.S.D.2 of 17-25-XXVII W. 3rd, on a dry saline flat slightly fed with saline groundwater, in the bolson of Cabri lake; sheets sent to SASK, DAO, USAS. This is a small silvery Goosefoot Family annual, much like a small *Atriplex argentea*, Silvery Atriplex, but differing as indicated by Boivin;¹ the two bracts which between them enclose the dry fruit are toothed on the margins all the way to the tip in *A. argentea*, but only half way up in *A. powellii*. In the field the leaves of *A. powellii* are some 5-7 mm wide and not much longer, being thus half the size of those of *A. argentea*. The leaves of *A. argentea* are toothed and those of *A. powellii* mostly are not.

Boivin cites *A. powellii* only from Steveville and Rosedale in Alberta, but there is a sheet in the Fraser Herbarium from Log Valley between Morse and Riverhurst.¹ (This other sheet, collected by R. T. Coupland, had been picked out of the *A. argentea* material in stock by C. Frankton of the Plant Research Institute, Ottawa). From our area *A. powellii* ranges widely south to Arizona and New Mexico. Presumably the "powellii" commemorates that

John Wesley Powell who in the early 1870's first piloted a boat down the Colorado River with great danger and difficulty.

Cabri Lake may be of more interest to the general naturalist. It is a shallow saline lake of oval form some 2¾ miles north and south by 2 miles east and west, occupying the lowest part of a flat-bottomed closed basin some 3 or 4 miles wide and 6-8 miles long, also lying north and south. The rest of the bottom of the basin is taken up by more or less saline clay flats. The lake seems to have no distinct beaches; I saw only concentric rings of different kinds of salt-loving plants where a beach should have been. Most likely its area changes so greatly with slight changes of depth due to loss or gain of water that the shore has no permanent position and so no beach can form. This is very much like the arrangement of bolson and playa described in works on the geology of the American Great Basin.

The bottom of the basin is some 250 feet below prairie level. The regions of steep drop, that is, the walls of the basin, are gauntly eroded into a maze of breaks and ravines, at least on the east side. The opposite or west wall is steep and scarped and rather less cut up. Short wash slopes some ¼ — ½ mile long with a rise of some 30-50 feet join the salt-grass covered flat of the basin bottom to the foot of these valley walls. These slopes are here and there spotted with saline springs and seepages.

Above the west scarp of the basin rises a lumpy skyline because of the presence of a north-south range of morainic till hills up to 200 feet above prairie level, closely bordering and

paralleling the basin.

Christiansen, who mapped the area geologically, took this depression to be an isolated remnant of a preglacial river valley which had been filled in flush to prairie level with glacial deposits everywhere except here, thus leaving a shallow but gigantic pit.² Yet I cannot help feeling that the valley, when continuous, must have carried melt water during one or another glacial stage, on account of the steep and eroded east and west walls, which look like those of our better understood meltwater channels. These banks are cut in glacial drift, not bedrock; therefore no badlands occur, and the slopes are all grassed. I had from the map rather hoped that badlands would be present, but it was not to be. A glacial advance must be assumed to fill the preglacial valley with drift; a melting would furnish the water to cut a meltwater channel with banks; and another advance would refill the upper and lower parts of the channel with drift as chance would have it, and in the process leave behind this basin.

To reach Cabri Lake I drove from a point on #44 5 miles West of Laporte, 2 miles South, 3 miles West, 2 miles South, and then on a trail 1.3 miles South till I ran out of road at an uncrossable ravine. Then I started

walking to come at the lake from the northeast. I followed down one of the coulees which have dissected the east wall of the basin till I stood out in the open at the top of the gentle west slope of alluvial fill above the lake flat. A southeast wind was blowing transferring the shallow brine of the lake downwind and up over its bordering mudflats so that the shore was growing samphire and sea blite well flooded an inch or so deep. Away over to the south, the wind was blowing alkali dust about in clouds on the dried windward shore. Then a herd of cattle appeared from among low hills at my right, chivvied along by several cowboys on horses (not half-ton trucks!). They passed between me and the lake, perhaps 3/8 of a mile away and disappeared finally behind a spit in the direction of the alkali dust cloud. I thought, "If that isn't a scene from a Western movie!"

¹BOIVIN, B. 1969. Flora of the Prairie Provinces, Part II, Université Laval, reprinted from "Phytologia" 17 [2] 58-117 (1968).

²CHRISTIANSEN, E. A. 1965. "Geology and Groundwater Resources of the Kildersley Area (72-N), Saskatchewan" Saskatchewan Research Council Geology Division, Report # 7, 25 pp and maps. Saskatoon.



Herefords grazing

Gary W. Se