

miles to the east of the portage.

This trail, if properly preserved, could easily become a considerable attraction for tourists and residents interested in the history, the forests, the wildlife, and the rugged, unspoiled grandeur of the northern half of this province.

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RICHARDSON PONDWEED

by J. R. Allan, Lethbridge, Alberta

The Richardson pondweed, *Potamogeton richardsonii*, is one of the ten most commonly found, true vascular, bottom-rooted aquatic flowering angiosperms inhabiting the lakes and slow moving streams on the Prairies. The plant, named after its discoverer, Sir John Richardson (1787-1865), was first reported in the American literature in 1905. The pondweeds are members of the genus *Potamogeton* belonging to the family *Zosteraceae* and derive their name from the Greek words *potamos* (a river) and *geiton* (a neighbor) meaning a *river neighbor* because of its place of growth. The genus has about 90 species of which 41 are found in North America, the remainder being distributed over much of the north temperate zone. A very few species are common to the shallow oceanic and brackish waters of North America. The various species of *Potamogeton* are notoriously difficult to identify.

Plants of the family *Zosteraceae* are of little value except in the conservation of wildlife. The Richardson pondweed is very important from the point of view of fish culture. The foliage is considered of little direct importance as a fish food but indirectly it supports extensive insect life,

which in turn is of great value as a fish food. The plant offers shade and shelter as well as a spawning medium for young fish. The seeds, parts of the stems and leaves, and the rootstocks are readily eaten by waterfowl.

The Richardson pondweed is a perennial, aquatic herb that grows completely submerged in the water. Its thin, membranous, oval to lanceolate leaves clasp the stem. The leaves become progressively shorter towards the tip of the plant (Fig. 1A). The leaves have wavy margins and exhibit three to seven prominent veins that tend to run parallel to the long axis of the leaf (Fig. 1B). The leaf stipules are coarse and fibrous and may readily be reduced to shreds.

The flowers are perfect. The spikes are sheathed by stipules in the bud (Fig. 1C) and are elevated to the surface of the water on long stalks (Fig. 1D).

The plant is wind-pollinated and is known to form hybrids occasionally with the white-stem pondweed, Illinois pondweed, variable pondweed, and the largeleaf pondweed. Such hybrids are now being made artificially in the greenhouse at Lethbridge. All these species of pondweed are to be found in Western Canada. The seed



is nutlike and has a prominent beak (Fig. 1E at arrow). A single seed of the Richardson pondweed when germinated in the spring is capable of producing approximately 3,600 seeds and 2,400 subterranean winter buds in a single growing season.

Vegetative reproduction is by slender, fleshy, horizontal underground stems (Fig. 1G) that produce reserve shoots in the axils of scale-like leaves (Fig. 1H). At the terminals of these horizontal stems fleshy winter buds are developed for overwintering. In the spring, it is common to see lines of reserve shoots just poking above

the mud flats of exposed lake beds (Fig. 1F). As soon as the water returns to the mud flats the plants develop normally and reach the flowering stage by mid-June. The thickened underground rootstocks are rich in starch and have been used by the Indians in times of want as a human food source.

The Richardson pondweed is very common in Wascana Lake, Regina, Saskatchewan, especially around Spruce Island, where it grows in association with other submerged aquatics such as the sago pondweed, coontail, and water milfoil.