SOME ECONOMIC MONOCOTYLS OF OHIO.

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The monocotyls are perhaps the most important plants. They include the grass family which is of special consequence to men and animals. The following brief summary includes some of the most important economic monocotyledonous plants that are found in Ohio.

The rhizomes of the Typhaceae are rich in starch and serve as food for man. The pollen is used to adulterate lycopod powder, the heads of flowers serve as torches when dipped in coal oil, and the downy fruit is used to stuff pillows. In many places the leaves are employed for braid work, and they are also used between the staves of barrels, and for chair bottoms.

The young roots and shoots of Typha latifolia are eaten by the Sioux and other Indian tribes, and the leaves used for matting. The Sioux were accustomed to treat smallpox by frying out the fat of the coyote and making a plaster by mixing it with the down of the fruit, which they applied to the pustules of the patient. The pollen is gathered and made into bread and cakes.

The stems of the Sparganiaceae are used for making paper and thatching roofs, while some of the species of the Naiadaceae, particularly the Potamogetons, make a good fertilizer and can be used as food for cattle. Potamogeton natans furnishes food for swine and the tubers are roasted and eaten by man, while P. lucens is employed as a protection for fish hatcheries.

The species of Triglochin belonging to the Scheuchzeriaceae furnish a good tasting greens and the seeds are also used for food.

Among the Alismaceae, the species of Sagittaria produce a good cattle food, while the rhizomes of Sagittaria latifolia are used as human food and are found regularly on the markets in China. They attain the size of a large fist and are called "Wappatoo." Before using the rhizomes are soaked in water to take out the swampy taste.

The nuts of the American Lotus (Nelumbo lutea) which occur in large numbers in several places in the state are edible, the large kernels having a sweet taste.

The different species of the Vallisneriaceae furnish an excellent food for ducks. The species Philotria canadensis, known as the water pest, is used as a green fertilizer and cattle food.

The family Graminaceae includes probably more economic species than any other found in the state. The stems of Zizania aquatica are used for making joints of barrels intended to hold whisky, and the Chippewa Indians ate the grain for food; while Phalaris canareinsis produces the well known canary seed. Anthox-

anthum odoratum gives a fine sweet scent to new hay, and the large seeds of Milium effusum furnish a fine food for pheasants.

Ammophila arenaria is used to bind the sand on the sea and lake shores. In England this grass is used for mats and basket work, thatching material, and its fiber for making paper, mattings, and agricultural tie bands. The fiber is not used to any extent in the United States. The fiber of Sporobolus cryptandrus is rather too short to be woven but is used to some extent for tying. Mats and baskets are made from Cynosurus cristatus by the peasantry of Ireland. This grass is just being naturalized in Ohio. The species of Festuca are valuable meadow grasses, and the same is true for Lolium perenne. The seeds of Lolium temulentum, sometimes found in wheat, produces poisonous effects on the system, such as headache, drowsiness and vertigo, if ground in the flour. Agropyron repens furnishes a poor pasture grass but if cut when young gives a fairly good fodder. It is used to fasten sand on river banks. The juicy rhizomes and runners are nourishing food for cattle and contain three per cent of sugar, six to eight per cent triticum, a gummy carbohydrate, and are officially known as radix graminis. The extract acts as a solvent upon collections of mucous of the intestinal membranes, and in affections of the intestinal canal. A syrup and even an alcohol is made from it.

The entire stems of Scirpus lacustris one of the Cyperaceae are used for mats and mattings and to make baskets, bee hives and horse collars. Shoes are made from the plant in England and it is used in Denmark when thrashing buckwheat to prevent crushing the grain. The fiber of Eriophorum polystachyon furnishes material from which paper and clothing are made and Eleocharis palustris is especially valued in Holland for making beautiful matting.

Several species of the Araceae are also important. The corms of Arisaema triphyllum are used as a stimulant, diaphoretic, expectorant and irritant, while Spathyema foetida is administered in affections of the respiratory organs, in nervous disorders, rheumatism and dropsical complaints. The dried roots of Acorus calamus are frequently chewed for the relief of dyspepsia and as a stimulant in feeble digestion.

The different species of Lemnaceae are said to purify water. They furnish food for water birds and fishes, being especially good for gold fish.

The Juncaceae include important fiber plants and also excellent paper stock. The fiber of some species is said to make a good substitute for human hair. The fiber of Juncus effusus is employed in making chair bottoms and baskets, while the pith makes a good substitute for candles. J. balticus is used for weaving mats and light baskets.

Some species of the Melanthaceae, notably of Veratrum, have rhizomes from which tincture of veratrum is prepared. V. viride is used as a poison for insects in spraying for all biting forms and Chamaelirium lutium is used as a tonic.

Hamerocallis fulva and species of Lilium in Liliaceae are very showy and ornamental plants. Various species of Allium including the wild onion and garlic are cooked and eaten by the various Indian tribes.

In the Convallariaceae the young stems of Asparagus officianlis are used as food; while the flowers of Convallaria majalis and Trillium grandiflorum are very ornamental. Narcissus pseudo-narcissus in the Amaryllidaceae, is an ornamental plant, and the roots of Dioscorea villosa in the Dioscoreaceae furnishes a medicine which possesses expectorant properties and promotes perspiration. The Iridaceae give some important species of which Iris versicolor possesses medicinal and ornamental values. It is regarded as an alternative diuretic and purgative. The species of Sisyrinchium are used as ornamental plants.

Some of the Orchidaceae are important, particularly the orchids which are used for medicine and for ornamental plants. Species of Cypripedium yield a medicine used as an antispasmodic and nerve tonic.

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