

*Liatris spicata*, a beautiful plant in bloom, Indian grass, *Gerardia paupercula* and *Spartina michauxiana*. In spots are found *Asclepias sullivantii*, *Tradescantia reflexa*, *Viola sagittata*, *Vernonia missurica*, *Polygala incarnata*, *Panicum virgatum*, *Aster multiflorus*, and *Cypripedium candidum*.

#### XEROPHYTIC.

This plant habitat covers the sandy portion of Lake Huron shore, sand dunes, sand hills, sand ridges, flat, dry and sandy land, and all dry and sterile ground. The Lake Huron beach included under this division may be regarded as that part of the sandy shore frequently washed by waves. This part has a very sparse vegetation, plants peculiar to itself and not equally distributed. *Cakile edentula* is seldom abundant, but fairly well distributed, and often near the water. *Euphorbia polygonifolia* is abundant in spots and often in the drifting sand of the beach. *Artemisia caudata* is frequent, but this is also found on the dunes. One plant of the beach, perhaps deserving particular notice, is *Cirsium pitcheri*, a thistle known only, I believe, along the Great Lakes, and named for Dr. Zina Pitcher, an army physician stationed more than sixty years ago at Fort Gratiot, Michigan, now a part of the City of Port Huron. This plant, common at Port Franks, loves the wave-washed shore, and often creeps up the first shoreward dune, but very seldom beyond. *Ammophila arenaria* and *Calamovilfa longifolia*, two grasses often found in abundance on the beach, are true and efficient sand binders, both having a root or rootstock system which very effectually protects the sand from the action of wind and waves. The former is usually nearer the water, the latter farther up on the beach, but both are also noticed on dunes. So well adapted are these two grasses for holding down and binding the drifting sands or shores that governments in Europe and America have much encouraged their planting to protect sea coasts and to prevent the sand from encroaching upon good agricultural land. The beach pea also frequent at Port Franks is another strong sand binder and has been known to extend its rootstock in sand over nine feet horizontally. These three plants are said to be abundant in many places on the Atlantic shores. *Juncus balticus littoralis* frequently establishes itself as a strong sand binder, but is also found in other localities. The sandy beach and sand dunes are the least productive of any part of the county, at present the dunes being useful only for timber growth and a small amount of pasturage. Generally only such plants grow on the dunes as are adapted to dry sandy conditions. Here vegetation has not been much changed and hence is fairly primitive. Only those plants thrive there that can best endure the hard conditions