

S. GEORGE V. A. 1918

settle the problem, but I do not consider the undertaking worth the trouble or expense. In the deeper parts of the river I was able to use the crow-foot bar but got no shells except dead ones. The river may at one time have contained large quantities of mussels but it seems too stagnant to make good clam beds possible. This condition also would promote the growth of the vegetation now so abundant.

Taking all conditions into consideration this area is of no value for mussel culture. The shells that are there are perhaps only a remnant of a once larger supply and may in time quite disappear. The *L. luteolas* found were fairly large but were badly stained and seemed unhealthy.

In order to make a careful survey of this locality I decided to further investigate the cut and work my way to the east branch of the river to prospect for shells there. The lower end of the cut is quite wide and approximates a small river, but we found no clams with the exception of the bed near the bridge mentioned above. I was able to determine that the upper part of the river's section between the cut and Grand Bend does contain the commercial shell *Q. undulata*. At one place where I went into the water to a depth of four or five feet, I found the bed to consist of fine clay mud quite thickly covered with mussels of this species. They were, however, rather smaller than usual.

This river seems to be peculiar in having a very irregular channel as to width and depth. At places it is shallow and narrow and then again it becomes wide and deep. Shells seem to be quite generally distributed. Even at Ailsa Craig, which must be over 40 miles up the river from the cut, we found the species *Q. undulata*, *L. ventricosa*, *L. luteola* and *Unio gibbosus*. They were not plentiful and of rather small size—too small to be of much value. Good beds of shells may be found on a more thorough investigation. In fact, I am inclined to think that the shells found lying in the shallow places near Grand Bend and in the Canada Company Cut may be washed down from native beds up stream from these points. Conditions in the lower stretches of the river seem to be very favourable to mussel development even with the small flow of water.

I also investigated the river near its mouth at Port Franks, but evidently there are no mussel beds of any importance there. No doubt the great quantities of sand carried down during floods do not permit their development.

It is singular that even small streams in this vicinity support mussels of commercial value. At the mouth of Mud creek, a small stream near Port Franks, I found a number of *Q. undulata* of fairly good size. *Q. rubiginosa* and small *luteolas* were also found here. Shells are reported to be plentiful further up this creek.

In the vicinity of Grand Bend and Port Franks a considerable quantity of shells should be obtainable by hand picking at low water. As the areas are not large, however, the supply would soon be exhausted. Since \$20 per ton, delivered at the station, has been offered for them, some enterprising man might find his labours well repaid.

I should advise that the river above the Canada Company Cut be examined with a view to determining its resources in mussel life.

POINT EDWARD.

On my arrival at the bay at Point Edward, near Sarnia, I was again several times assured of the abundance of shells by men about the lumber yards. I obtained a row-boat from the Spanish River Lumber Company, and crossed the North bay (north of the Cleveland lumber tramway) in search of shells. The water here has an average depth of about 3.5 feet and the shells are therefore readily obtained with a dip net or by wading. The sandy bottom is free of weeds with the exception of the margins near the marshy borders. As the water was clear I could readily see the bottom. I found only small shells such as we find in any of our fresh water lakes, for example