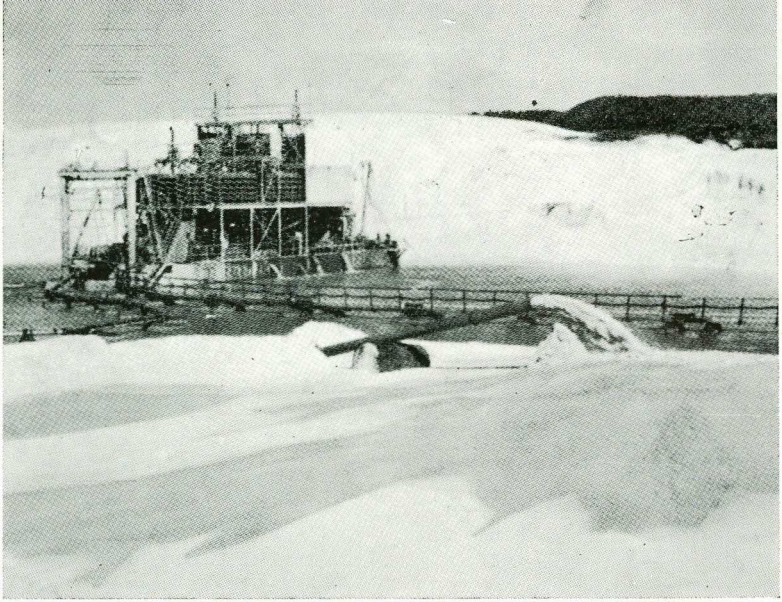

No. 1 Dredge in operation.

OPERATIONS OF

TITANIUM & ZIRCONIUM INDUSTRIES PTY. LTD. (2)

By Colin Bishop

In November, 1954, an expansion programme which took about 20 months to complete, was commenced on Stradbroke Island by T.A.Z.I.

For the initial task of the recovery of the mineral a small and a large dredging concentrator were constructed. The dimensions of the largest of these were about 90 ft. long by 40 ft. wide by 38 ft. high.

Projecting from the front of the dredge are two pipes which extend to the bottom of the pond in which the dredge is working. These comprise a 6" diameter jet pipeline and a 10" diameter suction line. The 6" line delivers high pressure water to jets which cut into the sandy bed of the pond and produce a mixture of water, sand, roots, shells and the like. The 10" suction line runs parallel to and adjacent to the 6" line, and a 10" Thompson pump, fitted with a cutter before the impeller, delivers the mixture of sand etc., via a screen to a storage hopper. Only a mixture of sand and water enters the hopper, the extraneous material such as shells and roots being removed by screening. Rubber-lined Warman pumps are used throughout the remainder of the processing on the dredge. These pump a controlled mixture of sand and water to banks of spirals.

There are three separate banks of spirals and these are referred to as primary, rougher and cleaner spirals . . . the mixture of sand and water is pumped to a distribution box above the spirals and then gravitates to the bottom of the spirals. At the bottom of each set of spirals there are two collection points, one for the heavy mineral and one for the tailings (silica sand). The tailings are pumped back onto the beach and the heavy mineral