



SNS COLLEGE OF ENGINEERING

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AN AUTONOMOUS INSTITUTION

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



COURSE NAME : TAMILS & TECHNOLOGY

I YEAR/ II SEMESTER

UNIT –4 AGRICULTURE AND IRRIGATION TECHNOLOGY

TOPIC: WELLS DESIGNED FOR CATTLE USE

WELLS

Introduction:

Tamil Nadu has a 2500-year history of building and maintaining water structures like lakes, ponds, dams, wells as mentioned in Sangam literature.

WELLS:

- Well is a deep hole dug in the ground to access natural resources.
- originally designed by the Sangam people for peoples' and livestock's(cattle) drinking purposes.
- used in many cultures around the world for over 8000 years.
- The first wells has been dug manually or with simple tools to store water and to bring ground water to the surface.

PROOFS:

1. Mayamatham:

Kodumudi S. Shanmugam's writings mentioned an engineering text called 'Mayamatham' which explained constructions like well digging, etc.,

2. Gnanavalliyam:

This is a book that describes the nature of the land for drilling wells.

3. Koomanool:

It is a book to know the state of water.



Dew Pond (or) Dew Well:

- Also called as ice ponds, snow lake.

- A snow lake is an artificial lake.
- located on the top of a mountain.
- for providing water for livestock.
- used in areas where a natural supply water is not readily available.

Proof:

- In 1865, the Journal of the Royal Agricultural Society mentions about Panikulam.

It says that, source of water is rain instead of snow or fog.



Fig. 4.4 Ice Well

Construction:

- Ice ponds are usually shallow and saucer-shaped. Lined with clay and lime on top as insulating layer of and lime in underlayer.
- Lime or charcoal is mixed with the clay to prevent from earthworms.
- This makes the clay porous.
- The clay is covered with straw to prevent cracking by sunlight.
- Evaporation is reduced, if the pond temperature is low.

Proof:

- According to the researcher 'Edward Martin', this can be achieved by building the pond in a hollow (cold air gathers) and keep long grass near it, to prevent cracking from heat. It limits evaporation.

- The Field 14 December 1907 describes a method of forming a base layer using lime slurry.

Ice Basins of Sangam Period:

A farmer born in 1850 tells how their ancestors made ice ponds: -

- 1)A hole of required size is dug.
- 2)A layer of lime is laid down.
- 3)ground well by bullocks.
- 4) sprinkle with water.
- 5)ground well with this wheel for a whole day to form a paste (cream).
- 6)After a few days, without snow or heavy rain, the lime will become hard like cement.
- 7)This protects the stored water from leaking.

This ancient method of forming ice ponds seems to have stopped, when the oxen disappeared from the Sussex hills.