

### **Fertilization:**

Although Fasciola is hermaphrodite, self-fertilization is uncommon. During copulation, sperm exchange is mutual and cross-fertilization is the general rule. Copulation takes place in the bile duct of the host. During copulation, the cirrus or penis of one worm is inserted, via the gonopore, into the uterus of the other.

Copulation through Laurer's canal has also been reported. Sperms are thus ejaculated. The prostate gland supplies semen for sperm survival. Sperms then travel up the uterus, through the ootype, to be stored in the seminal receptacle.

After being released from the ovary, the eggs are fertilized either in the oviduct or within the ootype. Each egg receives a fair amount of yolk from the yolk cells and vitelline secretions. It finally becomes enclosed in a proteinaceous shell or capsule secreted by the shell glands.

The shell becomes hard when it enters the uterus. The hardening is caused by the action of quinone. One pole of the egg shell bears a small lid or operculum for the exit of the future larva. The egg thus becomes complete and remains for a little time in the uterus.

Eventually the egg leaves the fluke's body through its gonopore and passes down the bile ducts of the sheep into the intestine, from where it is discharged to the exterior along with the faeces. The egg can survive if only it falls on damp soil.

### **Miracidium Larva:**

Active development within the zygote begins at this stage. After three to six weeks, depending upon the temperature, the egg shell opens at the operculum and the miracidium larva emerges. The miracidium larva has a somewhat conical body, covered all over with vibratile cilia.

A distinct head lobe or apical papilla is situated at the broad end. Behind the head lobe there are two spots of pigment, the eye spots. Within the body just below the epidermis lie delicate layers of circular and longitudinal muscle fibres, the mesenchyme.

