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Leucochloridium Sporocysts from the Okoboji Region

LOIS MCINTOSH

The "throbbing" brood-sacs of the fluke *Leucochloridium* which are sometimes found in the tenacles of snails belonging to the genus *Succinea* are indeed spectacular. Two examples of the sporocysts were found in a collection of eleven *Succinea retusa* taken on July 29, 1947, at the hanging bog on the west shore of Silver Lake, Dickinson County, Iowa. Only one sporocyst included a mature brood-sac, this was about 5.0×1.5 mm. with a long (20 mm.) thin stalk connecting it to the rest of the sporocyst. Its distal end was capped with red-brown; immediately below this a narrow cream-white band followed by another broad band of red-brown, then a broad band of cream-white, finally another band of red-brown which shades into the cream-white of the remaining half of the brood-sac. The brood-sac contained numerous metacercariae. Apparently this is similar to the red-brown brood-sac described by Woodhead (1935). During the month of August, 1947, over six hundred *Succinea retusa* were collected in the Okoboji region, but no more sporocysts were found. From the literature it appears that infected snails are more common in spring and early summer. Sporocysts of *Leucochloridium* were recorded from North America first by Ward (1918). These had been reported to him in a personal letter by Bryant Walker, who found it in *Succinea ovalis* from Michigan. The next record was by Magath (1920) who found brood-sacs of *Leucochloridium problematicum* in *Succinea retusa* and in *Planorbis trivolvis* from Fairport, Iowa. Woodhead (1935) found and described four differently colored sporocysts from *Succinea retusa* collected from the marshes on the west shore of Lake Erie near Toledo, Ohio. Larval stages of *Leucochloridium* have since been reported from Louisiana, District of Columbia, Virginia, Tennessee and New York. Dr. Elery Becker has told us that he found the brood-sacs in snails in the vicinity of Mud Lake in Iowa.

Adults of *Leucochloridium* are parasitic in the cloaca of birds and have been found in a great variety of birds in Asia, Australia, Europe and North America. One European species has been listed from as many as fourteen species of birds, so that there seems to be little host specificity. The fluke eggs are passed out of the uterus of the fluke and fall with the feces of the bird upon the vegetation. The eggs are ingested by snails belonging to the genus *Succinea*; miracidia hatch in the digestive tract of the snail, bore through the walls of the digestive tract and grow to form net-like sporocysts which penetrate and entangle all the internal organs, especially the liver and gonad. The terminal branches of the network develop into brood-sacs, of which there may be several in a single sporocyst. Many tailless cercariae develop and encyst in each brood-sac. One of the brood-sacs actively migrates into the snail's tentacle where it pulsates. The brood-sac may leave the body, and be ingested by

a bird, or may be snipped off with the tenacle by a bird which has been attracted by its pulsations. In this manner the parasite is transferred from the intermediate host to the definitive without the free-swimming cercaria stage so characteristic to the digenetic trematodes. Two species of *Succinea* are common in Iowa; *S. ovalis* which lives in the moist woodlands and *S. retusa* which lives in marshes. There should be an interesting correlation between the ecological distribution of the definitive and intermediate hosts in this fluke.

The most recent paper on *Leucochloridium* is that of Robinson (1947).

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