T. limacis has no encysted stage in its life-cycle and is seldom found outside its host, although it can be cultured with facility in simple media in the laboratory. It has a mouth and an active contractile vacuole, but this also holds for numerous species of ciliates long known to be obligate endoparasites. Experimental work[4,5] suggests that the organism enters a fresh host in nature via fæcal contamination in the host's edaphic environment. Infection is not fatal and the number of ciliates per host is never high: these points particularly stand in contrast with the situation observed in such species as *T. chironomi*, *T. corlissi*, and *T. stegomyiae*[1].

All the species of *Tetrahymena* involved in any degree of parasitism *sensu lato* are histophagous, tissue-eating, ciliates. One species, *T. rostrata* is, in addition, an edaphic form when found free of its hosts, which, like *T. limacis*, include snails and slugs; but it is not difficult to make a taxonomic distinction between these two species on both life-cycle and morphological grounds. Whether *T. limacis*, unlike most others in the series alluded to here, may more properly be considered facultatively free-living, thus being an obligate rather than facultative parasite of its host, is an important and intriguing question which both demands and warrants further investigation.

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Furunculosis in Salmon Kelts

DURING the spawning season of 1960–61 investigations were initiated in Ireland into the occurrence of furunculosis among spawning and spawned salmon. In that season 159 kelts were examined from four rivers; only one fish gave a positive reaction[1]. These investigations were continued during the spawning season of 1961–62 when 49 kelts were examined. All fish were dead when taken from the water. The distribution and results are given in Table 1.

Table 1

River	No. of kelts examined Male	Female	Hatchery or naturally spawned	Result of test	Period
River Owenea (Co. Donegal)	25	11	All hatchery stripped	All negative	January 9–February 7, 1962
River Erne (Co. Donegal)	4	2	All naturally spawned	All negative	March 15–May 29, 1962
River Blackwater (Co. Waterford)	—	1	Hatchery stripped	Positive	December 6, 1961
River Boyne (Co. Meath)	1	—	Naturally spawned	Positive	December 3, 1961
River Lee (Co. Cork)	2	—	Hatchery stripped	Negative	January 23, 1962
River Moy (Co. Mayo)	3	—	Naturally spawned	1 positive 46 negative 3 positive	March 1–3, 1962
Total	35	14			

As can be seen, three fish (6·1 per cent) gave a positive reaction.

I thank Mr. E. Murphy, of the Veterinary College of Ireland, Ballsbridge, Dublin, who undertook the bacteriological examination of these fish.

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Development of a DDT-Tolerant Strain of Laboratory Mice

A COLONY of mice selected by breeding the survivors of DDT treatments showed a definite tolerance to the insecticide by the ninth generation. The level of this tolerance was assessed by comparing the LD_{50} values with those of a control colony started from the same parent colony and reared under similar conditions.

In the summer of 1959, a colony of white laboratory mice, *Mus musculus* L., was divided into two parts: one part was maintained as a control; in the other, each generation was subjected to treatment with DDT. DDT dissolved in sesame oil was administered by intraperitoneal injection at the rate of 0·01 c.c. solution/g mouse weight and expressed in mg of DDT/kg mouse weight. All treatments to select tolerant mice were made at the age of four weeks. In order to reduce variation in weight between individuals in different litters, all litters were culled back to nine individuals per doe when the young were a week old. The doe was removed from the litter at approximately 3½ weeks. After treatment, mice were kept until eleven weeks old, at which time they were mated.

The original LD_{50} value for mice from the control colony and parent colony at four weeks of age was estimated to be approximately 500 mg/kg. At generation four, the LD_{50} value for the control colony males was estimated at 500 mg/kg and for the females at 550 mg/kg, whereas the colony under DDT pressure had an estimated LD_{50} of 650 mg/kg for males and a proportionately higher value for females. These approximate LD_{50} values were based on selected arbitrary dosages decided on after numerous preliminary tests.

At the ninth generation, using the method of moving averages and tables published by Weil[1], the LD_{50} value and confidence interval for the control colony males was estimated as 495–541–590 mg/kg and for females as 526–567–612 mg/kg. The value for the colony under DDT pressure was 905–944–983 mg/kg.

Observations were also made on the reaction of individuals to the treatment. Members from the colony under DDT pressure reacted much more slowly to the effects of the treatment, and the symptoms caused by the insecticide were much less noticeable until death was imminent.

The foregoing observations indicate that a change is occurring in the colony of mice in which each generation is subjected to DDT pressure. Whether this change may be classified as a true resistance to the insecticide comparable with that found in many insect species is uncertain. With insects, the change to resistance is frequently slight for the first few generations and then increases rapidly. The tolerance-range of the mouse to DDT is very narrow. The dosage to produce an LD_{50} for the tolerant (selected) colony is, at the ninth generation, only 1·7 times higher than that of the LD_{50} value for the control colony. This increase of the dose by 1·7 times is, however, sufficient