

The normal fish show a progressive monthly improvement, while the mutilated fish are much below any normal group. No really comparative data are available. The low factor of the mutilated group indicates the existence of a serious detrimental influence. Six mutilated specimens received intact from the collector after the group of 100 specimens was completed were in subnormal condition as shown in Plate 2, fig. 1. One had the posterior part of the caudal peduncle sharply deflected upward as shown in Plate 2, fig. 2. A similar misshapen fish, which had been mutilated previously, was observed at the trap in 1958 when fin-cutting was being performed. It would appear that the subnormal condition of the mutilated fish is, at least, not wholly caused by actually cutting off the adipose fin. After the operation the fish were taken by the caudal peduncle and thrown, sometimes several yards, into the water. Dissection of the specimen shown in Plate 2, fig. 2, revealed a fracture of the neural spine of the third vertebra after the rear of the anal fin. The spine was separated completely from the centrum, and the broken end was quite free, no indication of knitting being present.

SEX RATIO

The group of 100 specimens taken in 1958 consisted of 43 males, 45 females and 12, principally small fish, in which the stomach had been cut too short and the genital organs were missing. The sex is not recorded in the writer's 1936 paper, and Godby's figures, which are the only valid data published, must necessarily have been influenced by the requirements of spawn taking. Fresh data are available from the group of 122 stranded fish taken from the Selwyn while on their spawning migration in 1950. These fish had died recently and were examined intact either by trial stripping or opening the abdomen. There were 85 males and 37 females. The remarkable disproportion, compared with the approximate equality of the sexes in the 1958 collection, would seem to suggest the existence of some influence associated with spawning and the abnormal conditions occurring at the time. Armistead (1920) recorded that the sexes would become unbalanced by exclusive fly fishing, as a result of the males being the freer risers, but there is no evidence that live-bait fishing at night, as practised at Lake Ellesmere, would take an undue proportion of females.

FOOD

The 1958 specimens were taken in the evening when they were feeding freely, and the organisms present in the stomachs had been little affected by digestion. Fifteen of the food fishes which had been considerably reduced in bulk were determined from skeleton parts and included in the tallies. The food consisted almost entirely of fishes, and only two species were present. Eleven stomachs were without food of any kind. The remaining 89 contained 167 *Gobiomorphus basalis*, 195 *Retropinna* species, 1 larva of the damselfly *Zantagrion*, and 5 had fragments of waterweed. A table showing the monthly results is given below.

TABLE III.—Stomach Contents of Lake Ellesmere Trout.

Month	Number of Stomachs	<i>Gobiomorphus</i>	<i>Retropinna</i>	Insect	Water Weed
October	41	85	89	1	5
November	34	45	70	—	—
December	25	38	38	—	—