With growth, increase in pigmentation occurs. Further chromatophores develop ventrally beneath the gut and in the inter-mandibular area. The eye, silver at hatching, becomes yellow externally, apparently by dispersion of the yellow inter-orbital chromatophores around the eyes. Further chromatophores develop in the head region and above and below the muscle mass, with a few scattered laterally on the trunk. Ultimately there is a continuous series of black and yellow chromatophores along the ventral surface of the body muscle.

The bladder was seen to be contracting soon after hatching, although this was not noticed before this. At hatching, the pectoral fins could be easily distinguished but there was no sign of the pelvic fins. About 24 hours after hatching first jaw movements were observed, and at about 8 days feeble movements of the pectoral fins were seen. At about this time also, the first peristaltic movements of the gut were observed. At first these movements were sporadic, but subsequently they were more frequent and regular, despite the lack of food in the gut. Further changes observed included development of the lips, increase in mouth movements, recession of the dorsal fin fold behind the head and reduction in its depth in the mid-region of the caudal peduncle, increased definition of vertebrae, further development of the gut, enlargement of the pectoral fins and increase in their movements, a tendency for the caudal fin to become frayed posteriorly, and slight increase in overall length (from 2.7–3.0 mm).

G. huttoni fry showed marked positive phototropism. When placed in a glass tube 3 feet long, exposed to a bright light at one end, but otherwise in darkness, the fry quickly and repeatedly gathered at the lighted end. In dishes near a window the fry were found to gather at the lighted side and when on the stage of a microscope with sub-stage illumination, they "stood on their heads", in all cases directing their movements towards the light source. This light reaction may have considerable significance in reference to the habits of the fry later in life (see below), although this behaviour may be an escape reaction.

The larvae were moving freely, although without much control, and although mouth and gut movements were occurring, introduction of infusoria into petri dishes containing fry with little or no yolk material remaining did not induce them to feed. In no instance was it found possible to prolong life beyond the yolk sac stage, and many fry died before the yolk sac was exhausted. None of the fry hatched in the laboratory survived longer than 12 days.

Repeated efforts were made during the breeding period (September-December) to locate the fry in the stream where they must have been hatching in huge numbers. Using a 32-mesh silk grit-gauze plankton net, the stream flow was netted for periods of up to 24 hours, and the vegetation, gravel, sand and mud of the stream were disturbed and netted. No trace of the larval fish was found in the stream. Because of the failure to keep *G. huttoni* larvae alive for any length of time in the laboratory, and the inability to capture them in the streams in which they were hatching, nothing further is known about the development and metamorphosis of the larval fish.

The young of the 1961 breeding season in the Makara Stream were not found until the following January. At this stage they measured between 16 and 25mm length and must have been about four months old. They appeared bully-like in form and pigmentation (Fig. 5D), but they did not show the adult sexual dimorphism. At the beginning of December, 1963, large numbers of *G. huttoni* 15 to 18mm in length were found in the estuary of the Waikanae River. These fish were transparent, the smaller specimens with dorsal and ventral series of