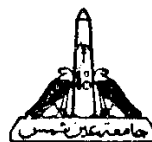


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FACULTY OF EDUCATION
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SCIENCES & GEOLOGY



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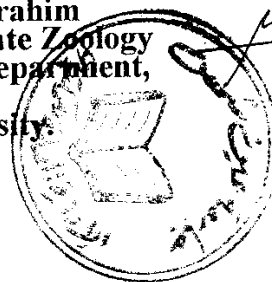
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To my parents.

To my family.

Elham

ABSTRACT

In the present work, the freshwater clam *Corbicula fluminea* was morphologically and biologically investigated. The studies included the taxonomical status of this species according to the morphological and biometric parameters of the shell together with the macro- and micro-anatomy of different organs of the soft parts as well as the biology of reproduction.

The collected specimens are characterized with the heavy, semi-solid, equivalve shell which has a serrated sculpture. The ligaments are external and opisthodontic. The pallial line is continuous and distinct. The hinge is heterodont. The present clam exhibits three colour morphs, varying from olive green to straw yellow or cream-coloured shell in fully grown individuals. The juveniles are characterized by three flashes of purple colour located under the umbo and radiate outwards.

The increment in growth rate of *C. fluminea* for smaller individuals calculated by the integrated method of Pauly (1983) indicating that its life span reaches about 2 years. The length-weight relationship was expressed by the geometric regression equation and indicating that the weight increases with the increasing of length. The values of the coefficient of condition (K_n) increases with the increasing of length and age. In estimation of the theoretical growth in length, the straight line equation gave better results in estimation of theoretical growth in weight rather than the straight line equation.

These clams were simultaneous hermaphrodite, whereas the male gonadal tissues were less common than female tissues. The onset of sexual maturity was less common than female tissues. The onset of sexual maturity was indicated at 7 mm shell length. Ontogenitically, *C. fluminea* is proto-oogamous where the oogenic follicles begin to form before any appearance of spermatogenic follicles. Maturity stages of the gonads were divisible into 4 stages: Premature, Mature, Ripe and Spent stages. *C. fluminea* spawns twice a year, one in summer and other in autumn. It incubates fertilized eggs to a length of 220 μm within the inner demibranchs of the ctenidia which possess ctenidial glands. The embryos are differentiated into blastulae, gastrulae, trochophores, veligers, pediveligers, early and late straight-hinged juveniles. The late pediveliger and early to late juveniles are usually shed from the parent clam. The straight-hinged juvenile start independent life and grow into an umbral juvenile (at about 500 μm).

Key words:-

Bivalvia.

Freshwater.

Corbicula fluminea.

Taxonomy.

Biometric studies.

Macro-and Micro-anatomy.

Reproduction.

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