

ABSTRACT.

Fresh Water Shrimps Of Barbados, W.I.
Some Aspects Of Their Ecology, Biology And Culture.

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The recent interest in Aquaculture in the Caribbean concentrates on the established organisms known to be potential money earners through commercial cultivation. Scientific research nevertheless continues for indigenous species with equal potential and with the additional advantage of being biologically well adapted to their environment. Accordingly the aquaculture potential of West Indian freshwater shrimps was pursued through a study on the ecological and biological aspects of growth of the species found in Barbados.

Nine species of fresh and brackish water shrimps have been identified in Barbados; of these 5 are new to the faunal records of the island. These are Atya innocous, Macrobrachium acanthurus, Macrobrachium crenulatum, Macrobrachium heterochirus and Penaeus aztecus subtilis. Field research over 18 months established that the shrimps have few geographic limitations but

have extended periods of reproductive activity which tended to be affected by rainfall and body size.

Of the shrimps identified, the larval life histories and developments of 2, Macrobrachium crenulatum and Palaemon pandaliformis, as well as the first 3 stages of a third, Xiphocaris elongata have been described for the first time. Optimum survival was found to be mainly salinity-dependent but was also influenced by temperature, available food and state of health of the larvae.

Most of the Barbadian shrimps are slow growers and thus possible environmental influences were investigated. Shrimp were found to display some degree of conditioning to water hardness levels in their environments. When calcium concentrations fell outside the normal range, adverse responses in survival occurred. Reducing hardness levels within the critical range, however, enhanced growth rates.

Despite slow growth rates and generally small size, the aquaculture potential of West Indian shrimps is still open to investigation.