

Effects of some common insecticides and other environmental factors on the heart beat of *Caridina pristis*

H. H. Costa

The effects of spraying or dusting with modern insecticides on aquatic life have been discussed extensively by HYNES (1960). In Ceylon insecticides are widely and indiscriminately used in the control of agricultural pests and disease carrying insects such as mosquitoes. Of these, the insecticides of the chlorinated hydrocarbon group such as DDT, dieldrin, eldrin, etc. are extremely toxic to fish. They are insoluble in water but soluble in fat and therefore accumulation can occur in animal tissues. In the case of fish they may enter the blood circulation after being absorbed by the gills, or may enter indirectly when feeding on organisms containing DDT.

Some of these insecticides are sprayed directly into the water. Others sprayed on agricultural crops may ultimately get washed into streams, rivers and paddy fields. HOLDEN (1963), in a review, has indicated that the spraying of DDT emulsion at 1 lb of DDT per acre would produce a concentration of 0.34 p.p.m in static water one foot deep or 0.11 p.p.m. in water three feet deep. A concentration of 0.02 p.p.m DDT can produce 50% mortality among trout in 24 hours.

Caridina pristis is a small shrimp that lives in slow flowing streams in the hill country and like other atyid shrimps (COSTA & FERNANDO, 1967) this shrimp is also an important food item of some freshwater fishes. The author has previously studied the reactions of *Caridina* spp. including *Caridina pristis* to changes in temperature and salinity of water (COSTA, 1966, a & b). In the present study, the effect of different concentrations of some widely used common insecticides

Received June 7th, 1969.