EFFECT OF PESTICIDES AND TREMATODE INFECTION ON SURVIVAL, GROWTH AND DEVELOPMENT OF MALFORMATIONS IN *POLYPEDATES CRUCIGER* AND *BUFO MELANOSTICTUS* (AMPHIBIA: ANURA)

A THESIS PRESENTED BY

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to the Board of Study in Zoological Sciences of the
POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirement
for the award of the degree of

MASTER OF PHILOSOPHY

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2008

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Recent reduction of amphibian populations and widespread occurrence of amphibian malformations are a global concern. Amphibian declines are a result of interactions between a number of highly context-dependent causal factors of natural and man-made changes to the ecosystem, including habitat loss and alterations, global warming, pathogens, chemical contaminants, predation, ultraviolet (UV) radiation, invasive species and synergism among these factors. Field and laboratory studies in identifying the culprit deforming the amphibians suggest that many complex causes are involved, the prime suspects being parasitic (trematode) infections, pesticides and UV radiation. I tested how exposure to pesticides and trematode infection affect the growth, survival and development of malformations in two common local anuran species; the common hourglass tree frog (*Polypedates cruciger*) and the common toad (*Bufo melanostictus*) under laboratory conditions. First, the tadpoles (Gosner stage 26) of both species were exposed to four widely used pesticides at low ecologically relevant doses. In a second set of experiments tadpoles of *B. melanostictus* were exposed to monostome type cercariae in a dose dependent manner. All the tadpoles were reared until metamorphosis. Survival was recorded weekly and the growth and malformations were recorded at metamorphosis. Time required for the forelimb emergence of half the number of tadpoles in a given treatment (TE_{50}) was recorded to measure growth retardation. Pesticide and cercariae caused significant reduction in survival and growth retardation in both anuran species. Moreover, both these factors induced malformations in the limbs, spine and skin pigmentation of tadpoles and adults. Individual effects of pesticide and cercariae were enhanced when both were introduced synergistically. Further studies are required to ascertain the widespread occurrence of these malformations in other amphibian species and the prevalence of malformed amphibians in wild populations of Sri Lanka.