ABSTRACT

This study was composed of two sections. The first was to determine the trophic structure of the "Reeds" area of the Caroni Swamp. The second was to investigate the bioaccumulation and to determine evidence of food chain concentration of chlorinated hydrocarbon residues in the above mentioned environment. The presence of these compounds was made known by a preliminary study in 1977.

It was found that the trophic relationships in the "Reeds" area are complex with opportunistic and specialized feeders. Three trophic groups were recognized: herbivores, omnivores and carnivores. Two types of food webs are present. The first, more dominant is the detritus based web; the other is the plankton based web. The main route of energy flow appears to be as follows: *Ruppia maritima*, algae and mangrove detritus ⟶ herbivores (inlcuding detritivores) and omnivores ⟶ carnivores.

The second part of the study has shown the presence of chlorinated hydrocarbon contaminants such as Arochlor 1254, dieldrin, heptachlor epoxide, DDT and its metabolites and endrin in the "Reeds" area of the Caroni Swamp. From the data gathered it was not possible to clearly demonstrate food chain concentration of chlorinated hydrocarbon residues. However, higher concentrations of chlorinated hydrocarbon compounds were found in herbivorous and omnivorous organisms

such as *Callinectes sapidus*, *Tilapia mossambica* and *Mugil curema* when compared to their food which included algae and/or detritus. It does not appear that residues are concentrated in carnivores such as *Arius* spp. *Centropomus* spp. and *Batrachoides surinamensis*.