Abstract: *Explanatum (Gigantocotyle) explanatum* is one of the common trematode parasites in the liver of cattle and buffaloes and reported cases show a chronic debility and unthriftiness. Examinations were conducted to determine the prevalence and pathophysiology of the trematode infection. A survey of slaughter house material in Colombo and Kandy was carried out over a one year period commencing in April 1993. Post mortem material from several government farms and other field stations were also collected. Seventy percent of the carcasses examined were of cattle and the rest were of buffaloes. Livers and bile ducts of the cattle and buffaloes were examined for the presence of parasites. Out of 2297 carcasses of buffaloes examined, 784 (34.2%) were affected by the parasite, compared to 13 of 6097 carcasses of cattle (0.21%). The analysis of origin examined of animals or the carcasses revealed that the infection was found in all the agro-climatic zones. However, the prevalence rate was slightly higher (26.9%) in the dry zone compared to the wet zone (19.2%) and intermediate zone (23.2%). Animals over two years of age had a high rate of prevalence (85.7%) whilst only a few animals in the younger group were affected. Affected livers were dissected and parasites were collected for further laboratory studies. Only one species of parasite, *Explanatum explanatum* was identified. The affected livers were firm in consistency. The capsule was thick and opaque compared to that of unaffected livers. Further, some polyp-like protuberances on the epithelial surface of bile ducts were observed. The adult parasites were attached to these protuberances. The microscopy of hematoxylin and eosin stained sections revealed a mononuclear cell infiltration around portal triad with increased amounts of glandular tissue in the bile ducts. The preliminary results of this study suggest that *Explanatum explanatum* is a widespread liver parasite, primarily affecting buffaloes in Sri Lanka. Further studies should be done to determine the clinical aspect of the disease, develop a serodiagnostic test and to assess economic losses due to the infection.

Keywords: *Explanatum explanatum, buffalo, liver, prevalence*