

## I N T R O D U C T I O N

Fasciola gigantica Cobbold, 1855, the giant liver-fluke of cattle is one of the most important trematode parasites of live-stock in the agricultural tropics and is of considerable importance from patho-biological as well as economic points of view because it renders tons of beef liver useless and costs much to the cattle industry.

Except a few epizootological studies, a country-wide epidemiological data regarding the incidence of this parasite is still wanting and the quantum of financial loss to the cattle industry of India is yet to be ascertained. This fluke is quite common in tropical and subtropical regions and appears to have a fairly high incidence in India, particularly in Bihar, Orissa, Punjab, Haryana and Uttar Pradesh, and Roy (1954) has reported as high an incidence as 75% in Kalimpong and Darjeeling regions. Similar data from other states of India is however, wanting and a study in this respect will certainly be pertinent as well as necessary.

In certain regions, including the Indian sub-continent, the distribution of F. gigantica also overlaps that of F. hepatica. Such types of mixed infections have been reported from Pakistan (Kendall, 1954), Thailand (Dissamarn, 1955), Turkmenia, USSR (Kibakin, 1961) and Japan (Watanabe,

1958), although such reports are not available from mainland India.

Besides causing liver-rot or fascioliasis, F. gigantica is also reported to be responsible for causing "Black disease" in association with the bacterium, Clostridium oedematians, which produces complicated pathological syndromes in cattle. Apart from cattle ailments, human infections with F. gigantica have also been frequently reported yearly.

At Aligarh abattoir, where buffaloes are brought mostly from adjoining areas which have a good irrigation drainage, a random fortnightly survey, conducted from January, 1975 through December 1980, has indicated an incidence to the extent of 12%, ranging between 2.6% in post-monsoon months and 11.6% during pre-monsoon summer following drought periods (Table I). A marked decline in the incidence during 1979 and 1980 has been correlated with the low rainfall in 1978 and almost drought conditions in 1979. However what seems more important from patho-biological point of view is the worm burden in an infected host rather than the number of cattle heads infected in a sample.

With augmented irrigational facilities and increasing snail populations, fascioliasis is likely to become more wide spread and serious a problem in the plains of Uttar Pradesh and may take to the same pattern as has been reported

by Patnaik (1971) from Orrisa.

The present study deals with preliminary morphological and histochemical investigations related to various systems of F. ,gigantica.

TABLE - I

Year	Max. % of infection	Max. worm burden flukes/head	Total rainfall in cm
1975	5.3	1700	104.9
1976	7.2	83	100.3
1977	8.4	92	114.7
1978	11.6	99	75.5
1979	3.3	80	41.1
1980	2.6	31	78.5

Fig. 1. Showing yearly total rainfall in cm and maximum yearly percentage infection of F. gigantica in buffaloes at Aligarh, based on random fortnightly survey, conducted from January, 1975 through December, 1980.

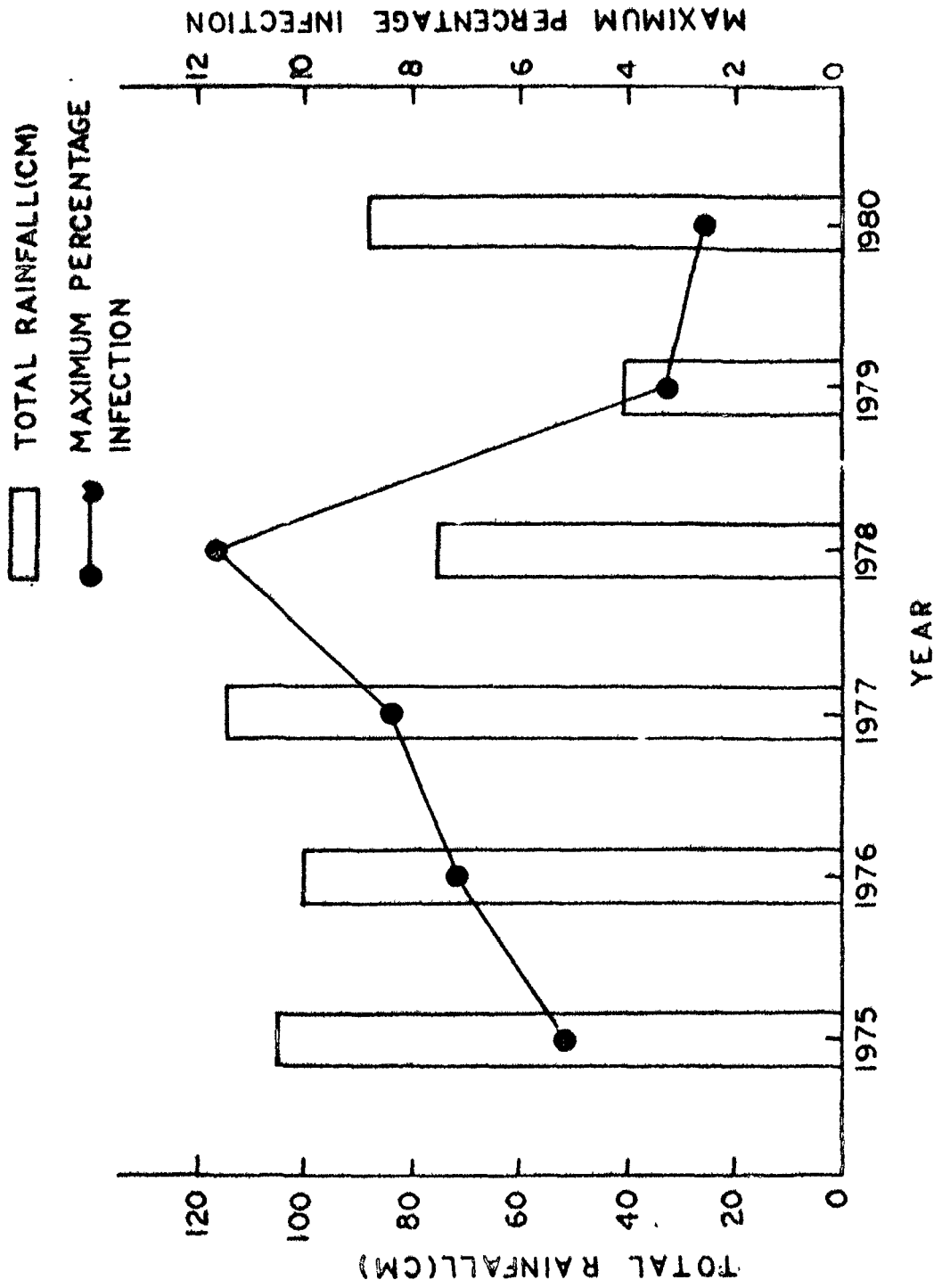


FIG.1