

Pilot experiments were carried out to assess the immunizing potential of radiation-attenuated cercariae of *S. mansoni*. Groups of 4 monkeys each were vaccinated 4-5 times at 3-5-week intervals using cercariae which had received 10, 20, 40 or 60 krad of gamma radiation. Animals were vaccinated with 1000 or 2000 cercariae per kilogram of body weight. Overall the difference in worm burdens between the vaccinated and unvaccinated groups was highly significant ( $P$  greater than 0.01). The highest level of protection achieved was 44.4%. This was in monkeys which were immunized five times with 2000, 20-krad cercariae at 3-4-week intervals. Protection levels of 33.3%, 36.6% and 37.0% were achieved in groups which had received, respectively, 1000 20-krad cercariae, 1000 10-krad cercariae, 2000 40-krad cercariae and 2000 60-krad cercariae. Vaccination reduced faecal egg counts markedly and intestinal tissue egg counts by 20-40%. Antischistosomal antibody was detectable *in vitro* 3 weeks after the first vaccination. Schistosomule kill rates of up to 60% were observed *in vitro*.