

6249

**Transmission to Offspring of Immunity Against Infection with a
Metazoan (Cestode) Parasite.***

HARRY M. MILLER, JR.

From the Department of Zoology, Washington University.

In view of the successful results of numerous experiments on passive transfer of immunity¹ against infection with onchospheres of *Taenia taeniaeformis*, it was not surprising to find that a degree of protection was transmitted to the offspring of female rats actively immunized against this worm or infected with the larval stage. More than 250 such young rats have been used in a series of experiments begun in 1930.

The young of immune and control (stock) rats were infected at weaning, or at varying intervals thereafter, by feeding, by means of a stomach tube, equal portions of a uniform suspension of infective onchospheres. In most such instances cysts (2 to 5 mm. diameter) were present in the liver of control animals at autopsy 4 to 5 weeks later, while cyst development was completely, or almost completely, inhibited in the offspring of infected or immunized females. The results of a typical experiment are shown in Table I.

TABLE I.
Average number of living and dead cysts in liver at autopsy.

Infected Mothers No.	Cysts in Liver of Mother	Birth Date	Offspring†		
			Number	Living Cysts	Dead Cysts
24470	30	1/16	6	3	6
23677	31	1/16	5	—	—
16(78)	220	1/14	9	—	—
Controls	—	1/16	8	35	0.5

† Infected February 12, autopsied March 12, 1932.

In these experiments protection of the young of infected females was greater than that of the offspring of actively immunized females. In either case this immunity is passive and has not been found to persist beyond about 6 weeks after birth.

* This investigation was in large part made possible by a grant for research in science made to Washington University by the Rockefeller Foundation.

¹ Miller and Gardiner, *Science*, 1932, **75**, 270; *Proc. Soc. Exp. Biol. and Med.*, 1932, **29**, 779.