

In summary, it is found that both nitrogen and protein concentrations of the helminth extracts are low. Nevertheless when injected into rabbits these dilute antigens are sufficient to produce antisera having moderately high titers. The antisera react more strongly with their homologous antigens than with any heterologous antigens containing an equivalent nitrogen content. The intensity of the precipitin tests parallel in general the systematic position of the species tested, although the principle of reciprocal relationship does not hold. An exception to this parallelism is of interest in that the *Acanthocephala* reactions indicate a closer affinity to the Platyhelminthes than to the Nematelminthes.

8959 P

Production of Carcinoma of the Uterus in Mice.

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Spayed and normal young adult female mice were treated twice a week with a .3% solution of 1:2:5:6 dibenzanthracene and a 0.1% solution of estrone* painted on the nape of the neck. Benzene was the solvent for both substances. Treatment with estrone was begun 9 weeks after the treatment with 1:2:5:6 dibenzanthracene because of its more rapid action. Twelve weeks after the treatment with estrone was begun the dose was cut in half because of the development of pyometria. The original dose was estimated to be 125 R.U. Treatment was continued throughout the life of the animals. Six months after the 1:2:5:6 dibenzanthracene treatment was begun there were 27 mice in the group when a mouse died with a large epidermoid carcinoma of the cervix. In the tenth month of the experiment 2 other cases of epidermoid carcinoma of the cervix occurred. These were in the last mouse surviving in the spayed and in the normal group. Both of these mice built nests persistently in the last weeks. All of the animals developed marked hyperplastic, cystic, and metaplastic changes in the breast and uterus. Forty-three percent of the colony developed carcinoma of the breast. Two of the mice developing carcinoma of the cervix had carcinomas of the breast and pyometria. Pyometria and car-

* The estrone was generously supplied by Parke, Davis & Company through the courtesy of Dr. Oliver Kamm.

cinoma of the breast set a pathological limit to the amount of estrone which can be long tolerated. The mouse is not susceptible to spontaneous carcinoma of the uterus. Slye in 39,000 autopsies had only one possible case. No other workers have produced carcinoma of the uterus without direct irritation of the organ, nor have they maintained animals so long on so large a dose of estrone. As we were not able to maintain a group treated with estrone alone, we are limited in analyzing the factors in the production of these carcinomas of the uterus. 1:2:5:6 dibenzanthracene alone painted on the skin does not produce carcinoma of the uterus. Carcinoma of the cervix uteri was produced without direct irritation of the organ by prolonged treatment with massive doses of estrone in conjunction with 1:2:5:6 dibenzanthracene.

8960 P

Observations on the Virus Recovered from 1934-35 Poliomyelitis Epidemic in Los Angeles.

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Attempts were made to recover virus from 19 autopsy cases during the recent epidemic of poliomyelitis in Los Angeles. Seven of these were successful in 1934, four in 1935, as judged by the following results upon inoculation of the emulsified human cord into *Macacus rhesus* monkeys:

(1) Occurrence of pyrexia, roughness of coat, hyperirritability and tremor with subsequent development of paralysis.

(2) Transmission of the virus in successive animal passage of selected strains.

(3) The histopathology was characteristic in that oedema and hemorrhage, perivascular and diffuse infiltration, and necrosis of nerve cells were apparent.

Since the 1934-35 epidemic of poliomyelitis in Southern California has been described as being especially mild in its clinical manifestations with a corresponding low mortality rate and a low residual paralysis rate, it seemed desirable to compare the viruses recov-

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