Atropin sulphate, 50γ per kilo I.V. stopped the activity of both papillæ.

In general, therefore, with the dosages noted, crude secretin, purified secretin, cholecystokinin, acetylcholin, and arecolin produce a greater effect on the pancreatic papilla of the rabbit than upon the biliary papilla; histamin affects the bile papilla more than the pancreatic papilla; and physostigmin increases the activity of both. Epinephrin and atropin abolish the activity of both papillæ.

10719 P

Observations on the Bovine Blood Picture in Health and Under Parasitism.

ELAINE DELAUNE. (Introduced by E. C. Faust.)

From Louisiana State University.

Observations made on 6 normal Jersey and Holstein calves between the ages of 2 days and 6 months showed an average of 8.70 million red cells, 10,674 white cells per cubic millimeter of blood and a differential leucocytic count as follows: Lymphocytes, 64.4%; monocytes, 12.2%; neutrophiles, 19.6%; eosinophiles, 3.3%.

Six counts made on each of 5 adult animals between the ages of 3 years and 6½ years, which were on range and which were considered to be normal from the standpoint of the absence of disease, revealed an average of 6.39 million red cells and 10,225 white cells per cubic millimeter of blood, with a differential leucocytic count of: Lymphocytes, 58.1%; monocytes, 8.0%; neutrophiles, 25.9%; eosinophiles, 7.0%.

The feeding of a pure nodularworm culture produced in calf No. 95 a sharp drop of 2½ million red cells 5 days after the administration of the larvæ, with an increase of 5000 in the total number of white cells caused by an increase above the previous range of 17% in the number of neutrophiles. These general changes were of constant occurrence, though not so sharply shown in the 6 individuals which had a mixed infection of hookworms *(Bunostomum phlebotomum)* and nodularworms *(Oesophagostomum radiatum)* as in the 2 animals with the pure nodularworm infection. The calves used in all these experiments were kept under controlled conditions preceding and during the period of infection. For each experimentally parasitized calf, a control calf was kept under similar conditions.

The same picture found in experimentally-produced cases of parasitism was noted in a naturally infected Brahma heifer about 1½ years old. This animal was brought to the laboratory in a much weakened condition, greatly emaciated, and passing very small quantities of liquid fecal material with a very fetid odor. Fecal examinations during the entire time of observations revealed a very high number of parasite eggs. This animal showed the characteristic drop in the number of red cells to 5.25 million, with a phenomenal rise in the white cells to 31,000 correlated with an increase of 35% in the neutrophiles, which reached its maximum 24 hours before death.

10720 P

Cultivation of Certain Viruses Using Yolk of Chick Embryo as Route of Injection.

FRED D. STIMPERT. (Introduced by John F. Kessel.)

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Cox[1] recently reported the use of the yolk sac of the developing chick embryo as a medium for growing rickettsiae of Rocky Mountain spotted fever and typhus fever. Success was also attained in the cultivation of Eastern and Western strains of equine encephalomyelitis by the same worker (personal communication May 2, 1939).

This preliminary report confirms the results of Cox with the Eastern and Western strains of equine encephalomyelitis virus and in addition summarizes the results obtained with the virus of St. Louis encephalitis and 3 strains of poliomyelitis virus recovered locally.

In essentials the method employed is the same as that described by Cox. Fertile eggs were incubated at 39°C until injected and then at 37.5°C for the cultivation studies. Injections of the inoculum in doses of 0.1 to 0.5 cc were made directly into the yolk through a small opening in the air sac end of the egg which would just allow the passage of a 21 gauge needle. The opening was then closed with melted paraffin. Three to 4 eggs were used for the same inoculum in each passage and infectivity tests of the embryonic tissues, ex-

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1 Cox, H. R., *Public Health Reports*, 1938, **53**, 2241.