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2) MMC (50 μ M) had apparently no effect on the noradrenaline output induced by transmural electrical stimulation (TMS) and excess potassium (excess K). PCMBS (0.1 mM, 0.5 mM) reduced the response to TMS, but apparently potentiated the response to excess K at 0.5 mM. HgCl₂ (25 μ M) significantly, but reversibly inhibited the noradrenaline output induced by both stimulation.

3) There was no apparent change in both the spontaneous and evoked noradrenaline output from vas deferens isolated from guinea-pigs 1 hr after subcutaneous injection of MMC in a single dose of 10 mg/kg or after the injection at a daily dosage of 1 mg/kg for 10 days. The concentration of methyl mercury in the blood was 0.11 ± 0.02 mM in the former and 40.4 ± 5.7 μ M in the latter.

4) The results obtained in in vitro experiments show that both organic and inorganic mercury compounds increase in the noradrenaline output from adrenergic nerve terminals independent of the presence or absence of extracellular calcium. It seems likely that the modification of SH groups is involved in this effect of mercury compounds. The mechanism of the mercury compounds on the evoked noradrenaline output was discussed.

ISOLATION OF THE ANTIGENIC VARIANTS OF LEPTOSPIRAS FROM EXPERIMENTALLY INFECTED PUPPIES AND PIGS

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Attempts were made in the present study to isolate antigenic variants of leptospiras from experimentally infected puppies and pigs. Twelve mongrel puppies were inoculated with *Leptospira interrogans* serovar *canicola* strain Moulton either intracardially or subcutaneously (inoculum size, 10^6 to 10^8). Five specific pathogen free pigs were inoculated intravenously with *Leptospira interrogans* serovar *pomona* strain MLS (inoculum size, 10^9). The blood obtained at the febrile stage, the kidneys obtained at the time of death or euthanasia and the inocula used for injection were inoculated on a solid medium containing the homologous immune serum.

A large number of medium and small colonies and a small number of large colonies of *canicola* were developed after an incubation period of 16 to 24 days on the solid immune serum medium. The antigenic variants of *canicola* were 19 of 40 large colonies, 3 of 40 medium colonies and 3 of 51 small colonies from the blood of puppies, and 4

of 9 large colonies and none of 10 medium and 14 small colonies from the kidneys of puppies. The variants from the inocula were 10 of 28 large colonies, none of 16 medium colonies and 3 of 28 small colonies.

In the experiments using *pomona* and pigs, many small and medium colonies and a few large colonies of *pomona* grew from the blood of 4 pigs and from the inocula. The antigenic variants of *pomona* were isolated from the blood and from the inocula. The antigenic variants were 3 of 31 small colonies but none of 11 large and 21 medium colonies from the blood. The variant from the inocula was 1 of 8 large colonies, but none of 9 medium and 20 small colonies.

Some variants were antigenically stable, while many others reverted to their original state after several passages in the normal serum medium.

The antigenic variants were thus isolated from puppies and pigs inoculated with *canicola* and *pomona*.

THE LIFE HISTORY OF *ORIENTOSTRONGYLUS EZOENSIS*

TADA, 1975 (NEMATODA : HELIGMONELLIDAE)

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The life history of *Orientostrongylus ezoensis* TADA, 1975 was examined.

The eggs, $0.052\sim 0.072 \times 0.019\sim 0.031$ mm in size, hatched by 12~24 hour incubation at room temperature. The first and second stage larvae, 0.33~0.54 mm and 0.57~0.68 mm in length, respectively, had a rhabditiform esophagus and a filiform tail. The second stage larvae appeared by the second day. The third stage or infective larvae, 0.48~0.86 mm in length, appeared from the third day. They were ensheathed, and had a filariform esophagus and a short conical tail.

In rats, the parasitic stage worms were recovered only from the alimentary tracts after oral ingestion. However, no worms were recovered after the subcutaneous injection. Therefore, somatic migration did not occur. During the growing processes, the infective larvae once reached to the caecum after oral ingestion and they went up the small intestine. The fourth stage larvae, of which the body length was 0.76~1.83 mm in male and 1.09~2.20 mm in female, were found 48~60 hours after oral ingestion. They possessed a small cephalic vesicle and 7 aretes. The adult worms were found 84~96 hours after ingestion, and the body length was 1.85~2.33 mm in male and 1.96~4.13 mm in female. The prepatent period was 7~8 days and the decrease of