parasites was almost not at all influenced by irradiation with a fluorescent lamp (650 lx on the surface of culture ground) while migration was influenced by irradiation with a germicidal lamp (400 μw/cm^2 on the surface of culture ground). The occurrence of the parasites was almost normal or a little better than the control in high O_2 tension, but it falls in high CO_2 tension.

2) The growth of the body and oesophagus of the larva and the completion of the reproductive organs of the female in the free-living generation, were longer in cultivation at 20°C than at 28°C. By the irradiation of the germicidal lamp, the growth of the filariform was very late, and almost no larva developed to the adult stage. Their growth is not influenced by high O_2 tension while it is definitly influenced by high CO_2 tension.

3) In the experiment, the temperature was gradually raised from 0°C to 50°C. The head-swinging movement of the filariform larva became rhythmical at 18°C, it became so active that its frequency shows an average of 326.32 per minute at 41°~45°C and it gradually became inactive at the higher temperatures. In the experiment the temperature was also lowered from 50°C to 0°C, and the frequency of the head-swinging movement exhibited the most activity at the same degree of temperature, thereafter it gradually decreased and the swinging movement became inactive at 10°C.

REFLEX CONTROL OF GASTRIC MOTILITY BY THE VAGAL AND GREAT SPLANCHNIC NERVES IN THE DOG

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(Summary of Masters thesis written under direction of Dr. A. OHGA)

1) The experiment was designed to investigate the reflex control of the stomach with the vagal and great splanchnic nerve, in intact, decerebrated and spinal dogs, prepared with transection of spinal cord between C_1 and C_2 or C_2 and C_3.

2) In every preparation, except a few cases, the stimulation of both nerves resulted in an inhibition of motility and a fall of tone of the stomach.

3) The reflex inhibitory responses of the stomach to an afferent fiber in the dorsal vagal nerve stimulation, were mainly accomplished by the following reflex arcs, that is; (a) dorsal vagal nerve trunk→brain stem→ventral vagal nerve trunk →stomach and (b) dorsal vagal nerve trunk→brain stem→spinal cord→small and

great splanchnic nerves→stomach.

4) The reflex inhibitory responses of the stomach to an afferent fiber in the left great splanchnic nerve stimulation, were mainly initiated by the following reflex arcs, that is; (a) left great splanchnic nerve→spinal cord→small and right great splanchnic nerves→stomach and (b) left great splanchnic nerve→spinal cord →brain stem→dorsal and ventral vagal nerve trunks→stomach.

5) The mechanisms and the physiological importance of these reflex inhibitory responses of the stomach were discussed.

THE EFFECT OF THE EXPERIMENTAL VISCERAL PAIN ON SPONTANEOUS DISCHARGES FROM THE EFFERENT FIBERS IN THE RESPIRATORY NERVE

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In the first part of this experiment the correlation between the patterns of spontaneous discharges from the efferent fibers of the phrenic, recurrent and intercostal nerves, and the volume of respiration was examined. Then the effects of visceral and somatic stimuli on spontaneous discharges from these respiratory nerves were examined at a certain volume of respiration.

Electrical stimulation of the central end of a splanchnic nerve, distention of a limited portion of the small intestine and injection of bradykinin into a mesenteric artery were used as visceral stimuli, and electrical stimulation of a sciatic nerve as a somatic stimulus.

1) The alternation of the discharge pattern of each respiratory nerve was corresponding to the volume of respiration.

2) The discharges from the phrenic, recurrent and internal intercostal nerves in intact dogs were inhibited for a while and then accelerated by each of the visceral stimuli.

In decerebrated dogs, this inhibition became clearer, while the later acceleration failed to take place. The discharges of an external intercostal nerve were accelerated in both intact and decerebrated dogs.

3) The discharges from the phrenic and recurrent nerves in intact dogs were always accelerated, but after decerebration this acceleration did not occur by the somatic stimulus.