adrenals in the group with pituitary large cyst and those in the group without pituitary large cyst, was statistically significant; the former group was heavier than the latter less than 0.01 level on the pituitary and 0.05 level on the adrenals, respectively.

Thesis for the Master's Course

AN INHIBITORY EFFECT OF IMMUNE SERUM ON INTRACELLULAR MULTIPLICATION OF *TOXOPLASMA GONDII* WITHIN MACROPHAGES DERIVED FROM RATS

Rikio NIKI

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(Summary of Master's thesis written under directioh of Dr. K. HIRATO)

Monocytes from normal and immunized rats were cultivated separately in normal and immune dog serum, and the behaviour of *Toxoplasma gondii* within macrophages and inhibitory effect of immune serum were studied.

The monocytes were cultivated on slides with a film of formvar on a transparent gel of rat-tail collagen following EHRMANN and GEY.

1. Monocytes from immunized rats were cultivated in dog immune serum and they were infected with toxoplasma. Intracellular multiplication of toxoplasma was almost completely inhibited up to 96 hrs. incubation.

2. Monocytes from normal rats cultivated with normal dog serum exhibited no inhibitory activity and rate of infected monocytes and number of intracellular parasites increased with lapse of cultivation time.

3. Monocytes from normal rats, combined with immune dog serum had inhibitory power to tbe same extent as was observed with the combination of immune monocytes and immune serum.

4. With the combination of monocytes of immunized rats and normal dog serum, the mode of the intracellular multiplication was similar as is indicated in 2.

These rusults seem to indicate that some antitoxoplasmic substance is a determining factor in the existence of immunity against toxoplasma infection.

The Hokkaido University granted the degree of Doctor of Veterinary Medicine to Mr. Hitoshi GOTŌ under the examination and recommendation of a committee comprised of Professors K. HIRATO (chief), S. MIURA, S. HAMADA and T. ISHIKAWA (associates) on March 25, 1963. This degree is the first one conferred under a new regulation (1962) anthorizing the granting of the Doctor's degree to qualified researchers who are not graduates of the Post-Graduate School.

The author's summary of the thesis is as follows:

VIROLOGICAL AND IMMUNOLOGICAL STUDIES ON ASIAN INFLUENZA*

Hitoshi GOTŌ**

Department of Hygiene, Sapporo Medical College, Sapporo, Japan

(Summary of Doctor's thesis written under direction of Dr. M. KANAMITSU)

This study was undertaken to elucidate problems still incompletely understood in the fields of virology, immunology and epidemiology of Asian influenza. The first part deals with latent influenza infection during nonepidemic periods. Study demonstrated clearly that the virus was existing even during such periods and was spreading latently among susceptible persons. Such findings would contribute to an understanding of the mechanism of outbreak of influenza epidemics. The second part describes the biological nature of viruses isolated from the influenza epidemic in 1960 and the serological responses of persons infected during the epidemic. Experimental infection employing volunteers is a very useful method for study of conditions and factors causing human influenza infection. The third part describes the results of mass vaccination using a live attenuated Asian virus.

The "doctrine of original antigenic sin" developed by DAVENPORT and FRANCIS in antibody response against influenza viruses has been accepted widely as a new immunological theory in the disease. The author examined whether the theory was applicable also for Asian influenza and which kind of antibodies were the most suitable ones for such infection. The results are outlined in the fourth part. Many workers are of the opinion that the principal cause of the outbreak of Asian pandemic in 1957 was the lack of immunity of humans against the virus. But it was apparent that the morbidity from Asian influenza was definitely lower in adults

* Detailed description will be published in "VIRUS", the Official Journal of the Society of Japanese Virologists, in the near future.

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