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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) authorizing 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\*

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(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

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

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and older age persons than in younger. From sero-epidemiological study described in the last part, it was concluded that antibodies against influenza virus of type A might serve to inhibit Asian infection. This conclusion is of particular importance in the study of influenza.