



# HOKKAIDO UNIVERSITY

Title	THE EFFECT OF COLD EXPOSURE UPON THE URINE VOLUME AND SODIUM-, POTASSIUM- AND PHOSPHORUS-EXCRETION IN TIRE URINE OF RABBITS
Author(s)	FURUYAMA, Fujiya
Citation	Japanese Journal of Veterinary Research, 16(2-3), 89-90
Issue Date	1968-09
Doc URL	<a href="https://hdl.handle.net/2115/1904">https://hdl.handle.net/2115/1904</a>
Type	departmental bulletin paper
File Information	KJ00002369722.pdf



2) No CPE was seen following three serial passages of the virus in embryonic lung and monkey kidney cells. We also found no CPE developed on primary cell cultures of embryonic heart, liver, kidney and intestine or following 5 serial passages in these cell lines.

3) One of the 5 AE susceptible embryonated eggs which were inoculated with a culture of fifth serial passage embryonic brain cells developed typical lesions seen in AE infected chick embryos. However, no indication of virus multiplication was observed in the cell cultures from embryonic heart, liver, kidney, intestines or whole embryos, nor in the fifth passages of the established cell lines.

4) CPE and hemadsorption activity of the Newcastle disease virus were not affected by the AE virus cultured on kidney cells, embryonic liver cells or the following established cell lines (HeLa, HeLa S-3, FL, HEp 2, G<sub>2</sub>, MS, MK<sub>2</sub>, L, JTC-5 and SK).

5) AE virus plaque formation did not occurred on FL-17-M, G<sub>2</sub>, MS, Vero and L cell cultures.

6) The fluorescent antibody technique was used to detect viral antigens in primary cultures of whole brain and embryonic kidney, liver, heart, lung and intestines, and the established cell lines (HeLa, FL-17-M, HEp 2, G<sub>2</sub>, MK<sub>2</sub>, Vero, L, JTC-5 and SK). However, no specific AE virus antigen was found in any cells.

## **THE EFFECT OF COLD EXPOSURE UPON THE URINE VOLUME AND SODIUM-, POTASSIUM- AND PHOSPHORUS- EXCRETION IN THE URINE OF RABBITS**

Fujiya FURUYAMA

*Department of Physiology  
Faculty of Veterinary Medicine  
Hokkaido University, Sapporo, Japan*

(Summary of Masters thesis written under direction of Dr. S. HOSOYA)

Many researchers have investigated the problem of seasonal variation of water and mineral metabolism. Although they have not been able to arrive at a definite conclusion, many of them have suggested that the cause is the seasonal variation of the air temperature.

I planned to determine whether the air temperature has any effect on water and mineral metabolism by using cold exposure experiments. The first step was to study the effect of cold upon the urine volume and sodium-, potassium- and phosphorus-excretion. Male rabbits were exposed to 2.5°C for 8 days, 10°C for

7 days and 2.5°C for 47 days.

1) The urine volume did not always increase during the cold exposure. Four of the eight rabbits, exposed to 2.5°C, decreased their urine volume during the cold exposure, while two of them increased.

2) The decrease of their urine continued for 47 days.

3) The urine sodium content was increased during the exposure to 10°C.

4) The urine potassium content did not fluctuate with the increase in cold exposure.

5) The inorganic phosphorus in the urine did not increase during the exposure to 10°C, but increased when exposure to 2.5°C.

6) I found it necessary to set up control groups parallel to the exposed groups in the cold exposure and seasonal variation experiments because the urine volume and, sodium-, potassium-, and phosphorus-excretion fluctuated even at a constant environmental temperature.

## ON THE PATHOLOGICAL FEATURES OF OSMOSE POISONING IN A COW

### —NEUROPATHOLOGICAL OBSERVATIONS—

Akira HASHIMOTO

*Department of Comparative Pathology  
Faculty of Veterinary Medicine  
Hokkaido University, Sapporo, Japan*

(Summary of Masters thesis written under direction of Dr. Y. FUJIMOTO)

A one-year old crossbred-Holstein which died, about 4 days after the onset of symptoms, of Osmose poisoning was histopathologically investigated from general viewpoints and with special consideration of neuropathology. A complementary experiment was carried out in mice with orally administered Osmose.

Approximately common changes seen in both of the cow and mice were taken into consideration, and the principal changes seen in the cow were abstracted as follows: 1) Multiple hemorrhages extending over the whole body, 2) Microvascular alteration (edematous loosening and swelling of the walls of the small blood vessels), 3) Polyneuropathy, 4) Cerebral edema and degeneration of nerve cells in the C.N.S., 5) Fatty degeneration of the liver and edema of the gall bladder, 6) Destruction (karyorrhexis) of lymphocytes in the lymphoid organs, 7) Ulceration in the forestomach and abomasum, and 8) Decrease in number of cellular elements in the bone marrow.