



# HOKKAIDO UNIVERSITY

Title	HEMATOLOGICAL AND ELECTRON MICROSCOPIC OBSERVATIONS OF THE PERIPHERAL BLOOD OF CALVES BLED BY PHLEBOTOMY
Author(s)	Abe, Takehiko
Citation	Japanese Journal of Veterinary Research, 20(3), 78-79
Issue Date	1972-09
Doc URL	<a href="https://hdl.handle.net/2115/1996">https://hdl.handle.net/2115/1996</a>
Type	departmental bulletin paper
File Information	KJ00003418357.pdf



**STUDIES ON THE PILI OF *CORYNEBACTERIUM RENALE***

Norichika KUMAZAWA

*Department of Hygiene and Microbiology  
Faculty of Veterinary Medicine  
Hokkaido University, Sapporo, Japan*

Original reports of this thesis appeared in "The Infection and Immunity", Vol. 5, 27~30 (1972), and will appear in "The Japanese Journal of Microbiology", Vol. 17 (1973).

Hokkaido University granted the degree of Master of Veterinary Medicine to the following 13 graduates of the Graduate School of Veterinary Medicine on 25 March, 1972.

The author's summaries of their theses are as follows :

**HEMATOLOGICAL AND ELECTRON MICROSCOPIC  
OBSERVATIONS OF THE PERIPHERAL  
BLOOD OF CALVES BLED BY PHLEBOTOMY**

Takehiko ABE

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

Two normal calves were bled at the rate of 10 ml of blood per kg of body weight per day consecutively until their death, and the hematological and electron microscopic observations of the peripheral blood were conducted. The results thus obtained were summarized as follows :

- 1) The experimental calves died on the 17th and the 14th days respectively.
- 2) Severe anemia occurred rapidly in the first 3 days ; however, the progress of the anemia slowed down remarkably from the 8th and the 11th days respectively.
- 3) Reticulocytes and red cells with basophilic stippling appeared on the 5th day and increased markedly from the 11th and the 15th days respectively. Polychromatophilic erythrocytes, erythroblasts and cells with Jolly's bodies were observed from the 11th and the 15th days ; however, they were few in number.
- 4) Macrocytic anemia was observed from the 8th and the 11th days respectively.
- 5) Prominent anisocytosis was observed from the 11th and the 15th days respectively.

6) Increases of thrombocytes and neutrophils occurred from the 11th and the 15th days respectively.

7) In scanning electron microscopy, poikilocytes with projections, constrictions and indentations were seen to increase markedly in number with the progress of anemia.

8) In electron microscopy, an increase of poikilocytes with various abnormal figures was observed with the progress of anemia.

**AN EXPERIMENT FOR THE ESTIMATION OF  
THE LITTER SIZE IN UTERO IN PIGS BY MEANS OF  
AN ULTRASONIC DOPPLER METHOD**

Yutaka FUKUI

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

A method for the estimation of pig litter size in utero using an ultrasonic doppler apparatus ("Heart-tone" USD-I, Aloka Co. Ltd., Tokyo) was studied with 16 pregnant sows of 3 different breeds. In 15 of the 16 sows, the experiment was performed once during 80~114 days of pregnancy, while in the remaining one 5 experiments were undertaken during 58~107 days of pregnancy. Each experiment was done non-surgically at a laying position with neither fixation nor anesthesia.

The results obtained can be summarized as follows:

1) In 5 cases out of a total of 20 experiments the estimated litter size was in accord with the actual one at parturition. In the remaining 15 cases, however, errors between the estimated and the actual ranged from -5 to +3 piglets.

2) Cases in which the error was less than  $\pm 2$  piglets were 14 out of 20 (70%), and those in which the error was less than  $\pm 3$  piglets were 17 (85%).

3) Litter size estimation tended to become more accurate after 90 days of pregnancy, while it tended to be less accurate where the number of fetuses was more than 10 as compared with cases where it was less than 9.

4) No harmful effect from the ultrasonic treatment was observed in either fetuses or dams.

5) The fetal heart rate showed a tendency to decrease with the progress of pregnancy.