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Chemical and histochemical examinations for detection of arsenic and fluorine were unable to indicate positive results in both of the cow and mice.

The following pathological features were inferred as "predisposing factors" in the morphological sense: 1) A considerable part of the process of nervous disturbances (polyneuropathy), 2) A considerable part of the process of microvascular alteration, and 3) A part of the ulceration in the forestomach and abomasum and a part of the myopathic process in the striated and smooth muscles.

A view of such "predisposing factors" may give a certain suggestion to the interpretation of pathological features in naturally occurring cases of various poisonings.

**IMMUNOLOGICAL STUDY OF AVIAN MYCOPLASMA,
ESPECIALLY IDENTIFICATION OF
MYCOPLASMS AGAR GEL DIFFUSION TEST**

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

I used tube agglutination, growth inhibition and gel diffusion test to determine the serological relationships between *Mycoplasma gallisepticum* (strain S 6), *M. gallinarum* (GP 16), *M. iners* (PG 30), *M. laidlawii* A (PG 8) and *M. laidlawii* B (PG 10). In addition, I classified 30 strains of mycoplasma by using their biological and serological characteristics. These strains were isolated from diseased chickens showing clinical signs of CRD and reacting positively to the slide agglutination test.

The following is a summary of the results of my study:

1) *M. gallisepticum* was distinct from other mycoplasmas in serological characteristics.

2) *M. gallinarum* and *M. iners* showed unilateral cross reaction in agglutination and growth inhibition tests, and they had two common precipitation lines. However, they were distinguishable in their biological characteristics by their ability to reduce tetrazolium.

3) I observed no serological relationships between *M. laidlawii* (A & B) and other types of mycoplasma employed in this study.

4) On the other hand, the two types of *M. laidlawii* (A & B) have close bilateral cross reactions in their agglutination and growth inhibition tests, at

relatively high dilution. I also found they had at least three common precipitation lines in gel diffusion test.

5) In studying these 30 strains of mycoplasmas I found that their biological activity varied widely, especially the carbohydrate fermentation tests depending on methods used.

6) The thirty strains of mycoplasma isolated from chickens showing signs of CRD were classified into four groups by the gel diffusion test. Three strains of these organisms belong to *M. gallisepticum*, five to *M. gallinarum*, and one to *M. iners*. However, the remaining strains did not form any distinct precipitation lines with the mycoplasmas antiserums.

CLINICAL AND HEMATOLOGICAL OBSERVATIONS OF MORPHINE-PENTOBARBITAL ANESTHESIA IN DOGS

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(Summary of Master's thesis written under direction of Dr. T. SAKAI)

This experiment was carried out to establish the anesthetic effects of Sodium Pentobarbital (Nembutal) combined with morphine in dogs. We carried out our study in three phases:

1) We premedicated dogs with morphine administered intravenously (1 mg, 3 mg and 6 mg per kg of body weight) and recorded our clinical observations and hematological findings (leucocyte count, eosinophil count and acid-base balance).

2) We administered Nembutal intravenous to dogs (8 mg, 16 mg, 20 mg and 25 mg per kg of body weight) and recorded our clinical observations and hematological findings.

3) We used a morphine-Nembutal combination (1 mg/kg of morphine given about 20-25 minutes before and 8 mg, 16 mg, 20 mg and 25 mg/kg of Nembutal) and recorded our findings as before.

A summary of the results follows:

1) Judging from a clinical point of view better results were achieved using 1 mg/kg of morphine as a preanesthetic than using 3 mg/kg or 6 mg/kg.

2) Considerable variation was seen in the hematological observations of the group using just Nembutal whereas with the combination of morphine and Nembutal the results were constant.

3) The morphine-Nembutal combination achieved about twice the anesthetic