ABSTRACTS

RHINITIS OF SWINE VI. TOPICAL APPLICATION OF STREPTOMYCIN IN ARTIFICIALLY INFECTED PIGS. In three experiments on rhinitis, pigs artificially infected with a suspension of infective nasal material were treated with penicillin, streptomycin, penicillin and streptomycin, and saline. Rhinitis developed in the controls, in the saline treated pigs, and in the penicillin treated pigs. Lesions were also noted in the penicillin plus streptomycin treated animals. The nasal passages of the streptomycin treated pigs were normal.

These three experiments were carried out on three litters of pigs. While on a limited scale, these experiments suggest possibilities in the early use of streptomycin in infected herds.

[Gwatkin, R., Dzenis, L., Rhinitis of Swine VI. Topical Application of Streptomycin in Artificially Infected Pigs. Canadian Journal of Comparative Medicine and Veterinary Science. 16: 330—332 (September) 1952.]

A STUDY OF AN ENCEPHALITIS STRAIN OF HOG CHOLERA VIRUS. Postvaccination swine troubles, which were a major problem in 1949 and 1950, have figured noticeably in the annual loss from hog cholera. Considerable evidence has been presented to show that a variant strain of hog cholera virus has been the cause of many of the vaccination failures. Difficulty in maintaining the unstable variant in serial animal passage during serum production explained the lack of protection given by serums which later demonstrated low potency against the variant.

The two main objectives of this investigation were to study the characteristics of the variant strain of virus isolated from pigs dying as the result of a field vaccination failure and to maintain these characteristics over a number of serial passages.

Following is a summary of the experiment:

1. An encephalitic strain of hog cholera virus was isolated and maintained through 16 intracranial passages in pigs without the loss of ability to produce encephalitic symptoms or other characteristics.
2. Encephalitic symptoms occurred just as frequently in subcutaneously inoculated swine as in intracranially inoculated ones.
3. This virus, designated as virus "A," produced a short incubation period as indicated by the increased body temperature of inoculated pigs to 105.° F. or higher 24 to 72 hours following inoculation of the virus.
4. A short incubation period was further indicated by the rapid drop of total white cell counts 24 to 72 hours following inoculation.
5. The course of the disease caused by virus A was short, with deaths occurring as early as three to five days following inoculations.

6. In 100 animals inoculated, there were no recoveries. All animals died or were moribund when destroyed.
7. Incomplete protection against virus A was provided by the Bureau of Animal Industry experimental serum No. 1.
8. Commercial serum did not give complete protection in regulation serum test doses.
9. Thalamic lesions were evident in 100 percent of all cases studied. Severity of lesions appeared greatest in animals dying between the tenth and the fourteenth days.
10. A commercial virus tested in pigs produced almost no lesions of the brain.
11. Hydropic degeneration and proliferation of the vascular endothelium appear to be the primary pathological changes, with hemorrhages and other lesions apparently secondary or the result of these changes.
12. No pathogenic bacteria other than *Pseudomonas aeruginosa* were isolated from the brain, blood or intestine. This organism was isolated from five cases.

[Dunne, H. W., D.V.M., Ph.D.; Smith, E. M., M.S.; Runnells, R. A., D.V.M., M.S.; Stafseth, H. J., D.V.M., M.S., Ph.D.; Thorp, F. Jr., D.V.M., M.S., Ph.D., A Study of an Encephalitic Strain of Hog Cholera Virus. American Journal of Veterinary Research. 13: 277–289 (July) 1952.]

A CYTOCHEMICAL STUDY OF THE NATURE OF NEGRI BODIES. In white mice injected intracerebrally with street rabies virus the following consecutive changes were found.

Within one day of injection, minute, basophilic, Feulgen-positive inclusions were noted. These inclusions subsequently grew in size, often became embedded in a Feulgen-negative matrix, and increased in number. From the sixth day on, a progressively increasing proportion of inclusions became amorphous, eosinophilic and Feulgen-negative.

The Feulgen-positive inclusions were also positive for alkaline phosphatase and cholinesterase, and weakly positive for lipase. The decrease of these reactions paralleled the decrease in basophilia and Felgen positivity.

The findings are considered to corroborate the assumption that inclusion bodies represent virus particle aggregates in which the virus particles multiply up to a certain limit, and then diminish in number.

[Wolman, M., Behai, A., A Cytochemical Study of the Nature of Negri Bodies. The Journal of Infections Diseases. 91:69–71 (July-August) 1952.]

CHLOROMYCETIN (CHLORAMPHENICOL): EFFECT ON HEMATOPOIETIC SYSTEM OF DOGS. Recent interest in the effect of chloromycetin on the hematopoietic system in the human has raised the question of similar effects in animals receiving this wide spectrum antibiotic.

A paper by Gruhzit *et al* appearing in the Journal of Clinical Investigation in 1949 summarized the pharamacologic and pathological properties in animals up to that time as follows: "Chloramphenicol was relatively non-toxic to animals and possessed no cumulative toxic effect on oral dosage of 100 to 200 mgm./kgm. per day to dogs for over a four month period . . . It caused no cumulative toxic effect on hemopoiesis, liver and kidney functions and visceral tissues . . . Gastrointestinal reactions were uncommon, somatic reflexes, ocular and auditory functions remained undisturbed."

A total of 16 dogs have received high doses (50–200 mgm./kgm. twice daily or more) of chloromycetin daily for one month or longer either by mouth or intramuscularly. No animals have shown at any time agranulocytosis or a significant depression of red blood cells or hemoglobin associated with drug administration. Bone marrow examinations have shown no abnormalities.

It is evident from these studies that

dogs receiving dosages of chloromycetin well above those recommended for maximum therapeutic activity for extended periods of time have not shown evidence of any blood dyscrasia.

[Reutner, T. F., D.V.M.; Eads, F. E. Chloromycetin (Chloramphenicol): Effect on Hematopoietic System of Dogs. The Jouranl of Small Animal Medicine 1:115 (September) 1952.]

THE PENICILLIN RESISTANCE OF STREPTOCOCCUS AGALACTIAE ISOLATED BEFORE AND AFTER PENICILLIN THERAPY. Penicillin has been used as an effective agent in the treatment of chronic bovine mastitis caused by *Streptococcus agalactiae,* but numerous reports have revealed few 100 percent cures. This poses the questions: (1) are there penicillin-resistant strains of *Str. agalactiae,* and (2) are penicillin-resistant strains developed during the course of treatment?

This investigation was carried out to substantiate, by the tube dilution method, whether any animals were infected with penicillin-resistant strains of *Str. agalactiae* before penicillin therapy and to determine whether penicillin therapy affected the penicillin resistance of *Str. agalactiae.*

A summary of the investigation is as follows. Two hundred and eighty-one pre-treatment cultures of *Str. agalactiae* were assayed by a tube dilution method, and not one was found "resistant" to penicillin. This substantiates the results obtained by Heishman, who streaked blood agar containing definite concentrations of penicillin with *Str. agalactiae.* Fifty-three post treatment I, 54 post-treatment II, and 67 post-treatment III cultures of *Str. agalactiae* were collected one, two, and three weeks following penicillin therapy and assayed by the tube dilution method. These cultures revealed no tendency to develope a resistance to penicillin during the course of treatment.

[Ford, C. M., and Wilson, J. B., The Penicillin Resistance of *Streptococcus agalactiae* Isolated Before and After Penicillin Therapy. Cornell Veterinarian. 42: 291–295 (July) 1952.]