

ABSTRACTS



THE THERAPEUTIC EFFECT OF STREPTOMYCIN ON INFECTIOUS CORYZA OF CHICKENS CAUSED BY HEMOPHILUS GALLINARUM III. IN VITRO AND IN VIVO SENSITIVITY OF HEMOPHILUS GALLINARUM TO STREPTOMYCIN. *In vitro* bacteriostatic and bactericidal titers of streptomycin with different strains of *Hemophilus gallinarum* have been presented.

One intramuscular injection of 200,000 units (0.2 Gm.) of streptomycin per chicken yields blood levels adequate for a bactericidal effect against the majority of strains. Inadequate doses are liable to develop streptomycin-fast strains even after one injection.

In vivo experiments proved the sterilization of the pathogen within two hours after the injection of 0.2 Gm. of streptomycin per bird and thus confirmed the results of the *in vitro* tests.

[Bornstein, S., D.V.M.; Samberg, Y., Dr. Vet. Med. The therapeutic effect of streptomycin on infectious coryza of chickens caused by *Hemophilus gallinarum* III. *In vitro* and *in vivo* sensitivity of *Hemophilus gallinarum* to streptomycin. American Journal of Veterinary Research 16: 321-324. (April) 1955.]

AN EXPERIMENT ON THE CUMULATIVE EFFICACY OF PHENOTHIAZINE-SALT MIXTURE AGAINST NEMATODIRUS AND HAEMONCHUS IN LAMBS DURING A SECOND GRAZING SEASON. The continued use of free-choice medication with phen-

othiazine and salt during successive grazing seasons has been shown to be advantageous in controlling combined natural *Haemonchus* and *Nematodirus* infections in lambs. Medicated lambs, as compared to nonmedicated controls, showed lower egg counts, fewer total worms, greater gains, better condition, and higher blood levels during the two trials. The lambs benefited more from the medication than comparable lambs of the previous season, indicating that the regimen achieves progressive decontamination of pastures in successive seasons. All treated lambs survived the exposure whereas 5 of 8 untreated lambs succumbed during the two trials. Comparable lambs, unexposed to gross parasitism and untreated, made the best gains during the two successive years.

[Colglazier, M. L., B. A.; Turner, J. H., M. S. an experiment on the cumulative efficacy of phenothiazine-salt mixture against *Nematodirus* and *Haemonchus* in lambs during a second grazing season. American Journal of Veterinary Research 16: 558-562. (October) 1955.]

VIRUS DIARRHEA IN CATTLE. Two strains of virus diarrhea (VD) virus were obtained from two cows. They antigenically related in cross-immunity proved antigenically related in cross-immunity tests. Inoculation of calves with this virus intravenously or intranasally produced a diphasic thermal response, leukopenia, general malaise in the second phase and diarrhea in about half the calves. Except in an occasional animal,

oral lesions described as typical of virus diarrhea were not seen in experimental calves. One fourth of the calves purchased from dairy farms proved to be immune when inoculated, indicating that the disease may be widespread.

The greatest concentration of virus in the blood and in the spleen was found in the interphase, or four days after inoculation. Smaller amounts of virus were found during the periods of elevated temperatures and none ten days after inoculation when the fever has subsided. Isolations of virus from field cases, therefore, should be attempted before the end of the second-phase.

Transfer of virus to the rabbit was accomplished. After serial passages in rabbits, the virus became modified. Inoculation of susceptible calves in the seventy-fifth transfer produced a slight decrease in leukocytes and a temperature elevation that lasted for one day only. This modified virus immunized against fully virulent virus.

Baker, James A., D.V.M., Ph.D.; York, Charles J., D.V.M., Ph.D.; Gillespie, James H., V.M.D.; Mitchell, Grayson G., D.V.M. Virus diarrhea in cattle. *American Journal of Veterinary Research* 15:525-531. (October 1954).

THE EFFECT OF ANTIBIOTICS UPON THE MOTILITY OF ISOLATED INTESTINAL SECTIONS OF RABBITS AND SWINE. The effects of procaine hydrochloride and of the antibiotic preparations: chlortetracycline, procaine penicillin, potassium penicillin, dihydrostreptomycin, and bacitracin upon the motility of isolated intestinal sections of rabbits and swine have been investigated. Procaine penicillin and procaine hydrochloride decreased the amplitude of rhythmic contractions and at high concentrations, decreased the motility and relaxed the muscle. These two preparations appeared to have a cumulative effect upon the motility of the rabbit muscle. Potassium penicillin had very little effect upon motility except for the production of slight transient contractions. Penicillin independent of procaine or potassium probably does not affect the motility of isolated intestinal

muscle of rabbits or swine. Chlortetracycline decreased the amplitude of the rhythmic contractions and inhibited the motility of rabbit muscle. It had a varied effect upon the motility of swine muscle but in general, decreased amplitude of contractions followed by inhibition of motility. Dihydrostreptomycin decreased the amplitude of contraction, inhibited motility and relaxed swine muscle. Bacitracin appeared to have negligible effects upon isolated muscle. Swine muscle and rabbit muscle differed in their response to antibiotic preparations. In general, higher concentrations of the preparations were required to produce responses in the rabbit muscle than in the swine muscle.

[Reber, Elwood F., Ph.D. The effect of antibiotics upon the motility of isolated intestinal sections of rabbits and swine. *American Journal of Veterinary Research* 16: 553-557. (October) 1955.]

A PRELIMINARY REPORT OF THE IDENTIFICATION OF *VIBRIO FETUS*. A total of 164 cultures of *Vibrio* isolated from aborted fetuses, vaginal mucus of cows, semen and preputial washings from bulls were tested for metabolic end-products and growth characteristics in differential culture media. There appeared to be two distinct types of *Vibrio* on the basis of the catalase test: (1) the catalase-positive *Vibrio* which were thought to be true *Vibrio fetus*; (2) the catalase-negative *Vibrio* which were not incriminated as causing abortion and infertility in cattle. Both types of *Vibrio* reduced nitrates to nitrites. The catalase-positive *Vibrio* did not produce hydrogen sulphide nor grow in deep stab cultures; whereas, catalase-negative *Vibrio* produced large quantities of hydrogen sulphide and grew in deep stabs. Serological tests indicated that there was little or no relation between the catalase-negative and the catalase-positive types.

[Bryner, J. H., A. B.; Frank, A. M., D.V.M. A preliminary report on the identification of *Vibrio Fetus*. *American Journal of Veterinary Research* 16: 76-78. (January) 1955.]