

1942

## Abstracts

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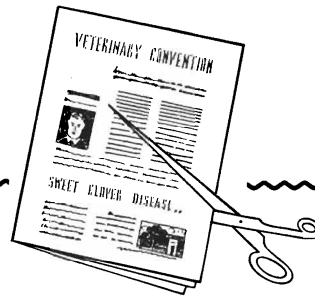
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# ABSTRACTS



**A**N INTERMEDIATE HOST OF THE SWINE INFLUENZA VIRUS. The author found that a disease was set up in the injected pigs while using *Hemophilus suis* vaccines in connection with the prophylaxis of swine influenza. With live vaccines the disease was acute and clinically indistinguishable from swine influenza, but with bacterins prepared from heat-killed cultures a mild disease was produced. He found on further examination by mouse inoculation, that swine influenza virus was present, and recovered pigs were found to be fully immune to the disease.

After several experiments to arrive at the source of the virus the author concluded that "the most likely explanation of the phenomena seemed to be that the animals, though healthy and susceptible, harboured the virus in some unknown manner." The swine used in the experiment were observed to have been infested with lungworms. More experimentation followed this observation.

The results are given in the following summary:

1. The swine lungworm can serve as an intermediate host in transmitting swine influenza virus to swine. The virus is present in a masked non-infective form in the lungworm, however, and to induce infection must be rendered active by the application of a provocative stimulus to the swine it infects. Multiple intramuscular injections of *Hemophilus suis* furnish a means of provoking infection. Swine influenza can be so provoked in properly prepared swine during the autumn, winter, and spring, but not during the summer. The phenomenon, while not regularly reproducible, occurs in over half the

experiments conducted outside the refractory period of summer. No explanation for the failures is apparent.

2. The virus can persist in its lungworm intermediate host for at least two years.

3. Swine infected with swine influenza virus by way of the lungworm intermediate host exhibit a more pronounced pneumonia of the posterior lobes of the lung than do animals infected intranasally with the virus. The situation of the worms providing the virus will account for this.

4. Occasional swine infested with lungworms carrying influenza virus fail to become clinically ill after provocation but instead become immune. In these it is believed that lungworms containing the virus are localized outside the respiratory tract at the time of provocation.

5. In a single experiment swine lungworms failed to transmit hog cholera virus.

(Shope, R. E. 1941. *The swine lungworm as a reservoir and intermediate host for swine influenza virus. Vet. Jour.* 97: 297-299)

**A**BNORMAL LESIONS IN FOOT-AND-MOUTH DISEASE. During the last outbreak of foot-and-mouth disease in Germany, Cohrs met with three cases in which the usual tongue vesicles were absent and instead there were scabby lesions varying in size from that of a linseed to that of a shilling. The scabs were dark brown, leatherlike and were firmly attached. Two of the cases showed the usual blisters on the lips and dental pad, and one of these had scabby lesions on the mucous membrane of the rumen.

On histological examination, the scabby lesions were found to be associated with a "ballooning degeneration" of the deeper epithelial cells, but the usual collection of fluid causing the vesicle was absent. The so-called ballooning degeneration is typical of the ordinary blister lesion and is offered as the main evidence that these abnormal scabby lesions were actually due to the foot-and-mouth disease virus. No attempt to recover the virus was made. Reasons are given for the differential diagnosis from papular stomatitis, necrobacillosis, and injury by a caustic.

Trautmein has reported the same sort of scabby lesion in the footpads of infected guinea pigs.

(Cohrs, P. A. 1940. *Scab-forming, not blister-forming form of foot-and-mouth disease. Vet. Rec. 53:612-163*)

### **ACTION OF HYPOPROTEINEMIA IN FRACTURE RESOLUTION.**

The study was undertaken to determine the effect of hypoproteinemia on the formation of bony callus following fractures in dogs. Medium-sized mongrel dogs from agricultural communities were employed. Hypoproteinemia was induced by a low-protein diet and repeated plasmapheresis. This procedure was carried out until the serum protein level declined to below 4 grams per cent. The type of fracture chosen for the study was Gigli saw section of the ulna. The processes of healing were followed by means of roentgenograms. Dogs which had been used earlier in the experiment were brought to a normal blood protein level and used as controls.

The studies led to the conclusion that severe hypoproteinemia retards the formation of bony callus in fractures produced in dogs by section with a Gigli saw.

(Rhoads, J. E. and Kasinskus, W. 1942. *The influence of hypoproteinemia on the formation of callus in experimental fracture. Surgery 11:38-44*)

### **A STUDY OF THE ESOPHAGEAL REFLEX.**

Observations were made on the course taken by liquids through the stomach of sheep from birth to four years. The course taken by the liquids was determined radiologically. For this

purpose a suspension of barium sulfate was used.

The observations made and conclusions reached were:

1. For the greater part of the period during which lambs suck the ewe, the milk taken passes directly to the abomasum with very few exceptions.

2. The passage to the abomasum of the milk sucked by the lambs is the result of the activation of a pattern of behavior in which eagerness and the efficiency of the act of feeding form an essential part.

3. The passage direct to the abomasum of suspensions ingested by lambs by means of sucking was not determined by the temperature and composition of the suspensions, by the posture assumed by the animal while sucking, nor by the act of sucking itself.

4. From the time the lamb first begins to drink water spontaneously to quench thirst, usually all of it passes to the forestomachs.

5. The passage to the forestomachs of water drunk spontaneously to quench thirst is independent of its temperature and of the posture assumed by the animal while drinking it.

6. Distinct behavior patterns determine the passage to the abomasum of milk ingested by lambs through sucking, and the passage to the forestomach of water drunk spontaneously to quench thirst.

7. The course taken by liquid when given as a drench varies largely with the individual sheep. In some sheep, up to four years of age at least, barium sulfate suspension always passes either completely or partly to the abomasum when given in this way. In others it often passes there, but again in others it rarely does so.

8. The passage of water-barium sulfate suspension to the abomasum when given into the mouth is the result of the reflex response of the esophageal groove mechanism to mechanical, and possibly chemical, stimulation of regions of the mouth or pharynx, or both.

9. The course taken by liquids given as a drench was little influenced by its temperature, by the state of hunger and thirst of the animal, by giving the drench to the animal turned on its back, or by the rate

and pressure with which the fluid was administered.

10. There is little change in the efficiency of the mechanism which provides for the passage of liquid direct to the abomasum with increasing age of the animal up to four years.

(Watson, R. H. 1941. *Studies on deglutition in sheep: a résumé of observations on the course taken by liquids through the stomach of sheep at various ages from birth to four years. Australian Vet. Jour. 17:52-58*)

### **ACTION OF CUPRIC SALTS ON THE ESOPHAGEAL REFLEX.**

The author reports on his studies of the esophageal reflex in sheep with reference to reactions obtained with various solutions introduced into the esophagus. The liquids were administered to the animals, while standing normally, by siphoning through rubber tubing which was introduced into the esophagus through the nose. The path taken by the suspension was determined, in most instances, by immediate fluoroscopic examination. In some cases the actual passage was observed.

The observations made and the conclusions reached were:

1. The passage of fluid direct to the abomasum is facilitated when cupric sulfate solution is administered into the mouth immediately prior to the liquid; a result of the response of the esophageal groove mechanism to chemical stimulation.

2. Cupric acetate and cupric chloride solutions also facilitate the passage of liquid to the abomasum when administered per os.

3. The influence of solutions of cupric salts does not arise from their astringency or hydrogen ion concentration, neither can it be attributed to the anions of the salts, and it is unlikely to be the result of any osmotic effect.

4. Both 0.08 M and 0.40 M solutions of cupric sulfate evoke a response of the esophageal groove mechanism, but the response tends to persist longer if the more concentrated solution is used.

5. A response of the esophageal groove mechanism is usually evoked when 2 ml.

of a 0.40 M solution of cupric sulfate is carefully administered into the mouth, but the response frequently persists longer when 10 ml. of solution is given.

6. The response may not occur for some seconds after the delivery of the copper sulfate into the mouth, but in most instances, the delay is not more than eight seconds.

7. The course taken by liquids administered into the mouth shortly after copper sulfate solution, varies greatly with individual sheep. In most cases, water-barium sulfate suspension almost always passes either completely or largely to the abomasum when given under these conditions; but in some this occurs irregularly.

(Watson, R. H. 1941. *Studies on deglutition in sheep: a résumé of observations on the influence of copper salts on the course taken by liquids into the stomach of sheep. Australian Vet. Jour. 17:137-142*)

### **ANAPHYLAXIS AND HISTAMINE.**

In preliminary studies, it was found that the histamine-content of the blood and tissues diminished during anaphylaxis. The present studies were undertaken to investigate further the fate of histamine during anaphylactic shock in the rabbit. The rabbits were sensitized to either horse serum or egg albumin by four intraperitoneal injections of 2 cc. each, given at two-day intervals.

The following conclusions were reached:

1. During acute anaphylactic shock in the rabbit, there occurs a marked decrease in the plasma-histamine and a leucopenia.

2. There appears to be no correlation between these changes and the symptoms of anaphylaxis.

3. There is a decrease in the histamine content of the lung and spleen of the rabbit following the production of anaphylactic shock.

4. In non-sensitized rabbits, there is little or no change in the histamine content of the blood following the intravenous injection of horse serum. A leucopenia may occur. When egg albumin is injected intravenously, however, a decrease in both the blood-histamine and the white blood cell count occurs.

5. Histamine shock in the rabbit is characterized by a moderate decrease in the histamine content of the blood and a marked increase in the histamine content of the plasma. A moderate leucopenia also occurs. These findings then differ from those which occur in anaphylactic shock in this species.

6. By superimposing anaphylaxis on histamine-shock in the rabbit, it may be shown that not only is the histamine content of the blood diminished, but that there is also some mechanism for the removal of large amounts of histamine from the plasma. It is also shown that a sudden increase in the plasma-histamine may occur under these circumstances.

(Rose, B. 1941. *Studies on the histamine-content of the blood and tissues of the rabbit during anaphylactic shock. Jour. Immunology* 42:161-180)

## BULLETINS

THE following state bulletins may be obtained by writing to the respective state experiment stations, or to the otherwise indicated address.

The U.S.D.A. publications are obtainable from the Supt. of Documents, Govt. Printing Office, Washington, D. C.

### State Bulletins

Necrotic enteritis, an old disorder—a modern name—a new preventive treatment. Mich. Ag. Exp. Quar. B. v23. East Lansing, Mich.  
 Swine Erysipelas in turkeys. N. J. Ag. Exp. Hints to Poultryman. v26 No. 4. New Brunswick, N. J.  
 Enzootic bronchopneumonia of dairy calves. Fla. Ag. Exp. B. 346. Gainesville, Fla.  
 Common diseases of poultry. N. C. Ag. Ext. C. 154. Raleigh, N. C.  
 Diseases of poultry. Alberta Ag. Ext. C. 9. 10c. Edmonton, Alberta, Canada.  
 Prevention and control of poultry diseases. Idaho Ag. Ext. B. 119. Moscow, Idaho.  
 Coryza (colds) of chickens and infectious sinusitis (swell head) of turkeys. Wash. Ag. Ext. Poultry Pointers. Pullman, Wash.  
 Use of disinfection in poultry production. N. C. Ag. Ext. C. 241. Raleigh, N. C.  
 Poultry lice, mites, and bedbugs. Purdue Ag. Ext. B. 218. LaFayette, Ind.  
 Sinusitis of turkeys and its treatment. Utah Ag. Exp. Sta. B. 280. Logan, Utah.  
 Rabies vaccine must pass rigid test. Ore. Ag. Dept. B. 109. Salem, Ore.  
 Poultry diseases and parasites. Neb. Ag. Ext. B. 332. Lincoln, Neb.  
 Screw worms and other maggot infestations. Ore. Ag. Dept. B. 112. Salem, Ore.

Turkeys have own carriers of pullorum; eradication program outlined for breeders. Colo. Ag. Exp. Farm B. v3. Fort Collins, Colo.  
 Undulant fever and its solution. Ore. Ag. Dept. B. 113. Salem, Ore.  
 Healthy horses make satisfied owners; control of parasites. Leaflet 246. 3c. Horse and mule Assn. of Am., W. Dinsmore, sec., 407 S. Dearborn St., Chicago, Ill.  
 Symptoms of respiratory poultry diseases given. Ore. Ag. Dept. B. 85. Salem, Ore.  
 Relative efficiency of spayed, open, and bred heifers in the feedlot. Cal. Ag. Exp. B. 645. Berkeley, Cal.  
 Variations in dairy bull semen with respect to its use in artificial insemination. Mo. Ag. Exp. Research B. 26. Columbia, Mo.  
 Vaccinate against fowl pox. Conn. Ag. Ext. B. 308. Storrs, Conn.  
 New mastitis (garget) treatment developed. Ore. Ag. Dept. B. 114. Salem, Ore.  
 Prevention and control of calf scours. Idaho Ag. Ext. C. 70. Moscow, Idaho.  
 Operation of the remount breeding service. Tech. Manual 10-390. War Dept. Washington, D. C.  
 Animal vitamin deficiencies. Ore. Ag. Dept. B. 110. Salem, Ore.  
 Vitamin D products for poultry. N. J. Ag. Exp. Hints to Poultrymen. v26, No. 6. New Brunswick, N. J.  
 Yield and composition of the milk of dairy cows and goats as influenced by thyroxine. Mo. Ag. Exp. Research B. 317. Columbia, Mo.  
 Growth and development; with special reference to domestic animals; seasonal metabolic and endocrine rhythms in the domestic fowl. Mo. Ag. Exp. Research B. 315. Columbia, Mo.  
 Productive energy of corn meal, alfalfa leaf meal, dried buttermilk, casein, cottonseed meal, and tankage as measured by production of fat and flesh by growing chickens. Tex. Ag. Exp. B. 600. College Station, Tex.  
 Levels of protein in rations for young turkeys. Ind. Ag. Exp. B. 448. LaFayette, Ind.

### U.S.D.A. Publications

Sheep killing dogs. Farmers' B. 1268.  
 Parasites and parasitic diseases of sheep. B. 1330.  
 Foot and mouth disease. B. 666.  
 Cattle lice and how to eradicate them. B. 909.  
 Cattle fever ticks and method of eradication. B. 1057.  
 Communicability of infectious abortion between swine and cattle. Tech. B. 629.  
 Anaplasmosis in cattle. C. No. 154.  
 The horn fly and its control. Leaflet No. 205.  
 Diseases and parasites of poultry. Farmers' B. 1652.  
 Feeding chickens. Farmers' B. 1841.  
 Mites and lice on poultry. Farmers' B. 801.  
 Controlling gapeworms in poultry. Leaflet 207.  
 The national poultry improvement plan. Miscellaneous publication No. 300.  
 Market classes and grades of swine. C. 569.  
 Drug Plants under cultivation. Farmers' B. 663.  
 The American dog tick, eastern carrier of Rocky Mountain spotted fever. C. No. 478.

The letter **B.** indicates bulletins, **C.** indicates circulars.

## TIRES

VETERINARIANS have been placed on the preferred list of automobile tire procurement. In view of the serious shortage of rubber for domestic use, members of the profession should not abuse this privilege. Only by individual sacrifice can the united effort be made to preserve democratic ideals.