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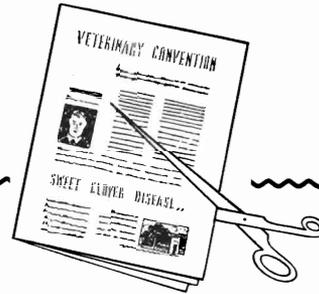
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ABSTRACTS



A STUDY OF LABORATORY INFECTION DUE TO BRUCELLA.

The review of the published records of Brucella infection in laboratory workers indicates the disease is widespread among those engaged in this work. The handling of cultures and of infected blood samples as well as the inhalation of dust containing Brucella organisms are decidedly dangerous as indicated by analysis of seventy-four histories of brucellosis observed among bacteriologists, pathologists, and other workers, who in the course of their duties were exposed to Brucella organisms in the laboratories of the United States. Of these seventy-four cases, sixty-six occurred at the seven main centers of Brucella research in this country. Fifty-five of the seventy-four cases occurred in men and nineteen in women. The identity of the disease was proven by blood cultures and serologic tests in which it was found that all three species of Brucella were involved. About one-half of the affected individuals had an illness of from one to two weeks while the others had a prolonged and serious malady extending over a period of months. A discussion of protective measures presents evidence that up to the present time no successful method of conferring immunity from brucellosis has been evolved.

(Meyer, K. F. and Eddie, B. *Jour. Inf. Dis.* 68:24-32. 1941.)

ANTHELMINTIC EVALUATION AND EFFICIENCY METHODS.

A manufacturer or shipper is responsible for the efficiency claims for anthelmintics un-

der the Federal Food, Drug, and Cosmetic Act of June 29, 1938. The new section on drugs deals solely with the safety attending the use of drugs. For approval of all new drugs an application with accompanying data pertaining to the safety, dosage and frequency or duration of the specific anthelmintic treatment involved must be submitted to the Administrator of the Federal Security Agency.

Tests to determine anthelmintic effectiveness vary with the different parasites and hosts involved. As a rule, a drug will act similarly on related parasites in the same host or a related host, but this generalization should not be accepted unless proven by experimentation.

The best "in vitro" tests give results quite similar to the "in vivo" tests. The "in vivo" tests are based, in general, upon the fundamental research methods—observation, comparison and classification, supplemented by deduction and verification. The three common "in vivo" tests are: (1) the dilution egg-count, (2) the critical test, and (3) the controlled test. Results obtained with the dilution egg-count may be in error because the anthelmintic being tested may only decrease reproduction instead of killing the parasites. The critical test involves the counting of all worms passed in the feces and of those which remain unharmed in the host three days after administration of the drug. The ratio between the number of worms eliminated and those retained determines the effectiveness of the anthelmintic. This test is of little value in determining the efficacy of certain taeniocides. For example, causing the elimination of a high

percentage of strobilae, without their regenerating heads, is no criterion of effectiveness.

The controlled test involves infection of half of the animals being used in the test. The anthelmintic is administered to these infected animals and then they are compared to the normal animals. This test requires the greatest amount of time but is the most reliable of the three tests.

The test methods previously discussed are generally employed, but new methods must sometimes be developed for special conditions.

(Moskey, H. E., and Harwood, P. 1941. *Methods of evaluating the efficiency of anthelmintics. Amer. Jour. Vet. Res.* 2: 55-59)

A FOAL WITHIN? The mucin test, blood or urine examination have been found useful in diagnosing pregnancy in mares. Although no one test is infallible, each has its uses.

In evaluating the three tests used, the blood serum test, dependent upon gonadotropic substance, was found to be of most value between 40 and 120 days of pregnancy. The urine test, dependent upon oestrogens in the urine, was most successful between 120 and 250 days of pregnancy. The mucin test, based upon physiological reaction to pregnancy, was believed to be the most valuable of the three tests and was especially good after 80 days.

The authors describe the technic for the mucin test. The vagina and cervix were examined by means of a speculum and with a long handled paint brush a sample of mucus was obtained and smeared on a slide. The slide was fixed in alcohol, dried and stained 20 minutes in Delafield's hematoxylin or for 1 minute in 1% aqueous methylene blue; the former stain giving the best results.

Estrus: The mucosa varies from a bright pink to light red. The surface is moist and glistening due to the evenly spread mucoïd secretion. The cervix is relaxed, the folds appearing edematous.

Diestrus: The mucosa is pale pink or

blanched, and dry looking. The cervix is constricted, erect, the os plainly visible at its apex, invariably in position on the mid-line and projecting back. The mucoïd secretion is scanty, sticky, and tenacious.

Early Pregnancy: At some time shortly after 25 days of pregnancy the mucosa is very pale, blanched and shows a pearly appearance. Small blood vessels and capillaries are congested but gradually disappear until the whole mucosa appears bloodless. The folds of the cervix are sealed together by a thick, tacky mucoïd secretion; the external os appears to be obliterated. The apex normally turns from the mid-line, generally downward and to one side. The walls of the vagina are closely adherent to each other and the gum-like character of the mucoïd secretion increases as pregnancy advances. The mucus spreads on the slide somewhat like honey.

The mucus from the pregnant mare has an affinity for stains and is very dark and thick whereas the barren mares show globules of mucus (probably mucin or muco-protein). The mucus of the pregnant mare has many so-called pregnancy cells. These are columnar epithelial cells from the cervix, carried forward by the mucus discharge. These cells are pleomorphic, commonly like a bent tin-tack, with dark staining nuclei near the points and a cytoplasm which stains so lightly they appear as a "ghost" cell, especially with the hematoxylin stain.

The barren mare presents no globules of mucous secretion and only a few columnar epithelial cells, usually polymorphonuclear leucocytes, and some other cell types are present.

Pregnancy is based upon the globules of mucous secretion, numerous "pregnancy cells," and the thickness and intensity of staining of the smears.

(Day, F. T., and Miller, W. C. 1940. *A comparison of the efficiency of methods of diagnosing equine pregnancy, with special reference to the mucin test. Vet. Rec.* 52:711-716)