

Animals Can Get Valley Fever, too

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Many people living in the desert areas of Texas, New Mexico, Arizona and California have had experience with the fungus disease commonly known as Valley Fever. This has varied from a mild and transient influenza-like attack in some to an opposite extreme with prolonged, severe symptoms and even death in others.

Many Are Exposed

Many mild infections pass undiagnosed. Some people may apparently be exposed and suffer no symptoms whatsoever. More severe cases are always associated with chest symptoms initially, though in persons with little ability to resist the disease, the infective agent may spread to any organ or tissue in the body.

Of interest to livestock and pet owners is the little-known fact that the organism that causes Valley Fever in man also infects animals. This organism, technically known as *Coccidioides immitis*, is peculiarly different from most agents of disease in that its growth and multiplication in the body of man or animals varies radically from the process it follows in nature.

Outside the body of a warm-blooded animal the organism, when inoculated on an agar plate, produces a cottony-white mold colony made up of thread-like structures, portions of which undergo differentiation to produce single spores of microscopic size. From each spore a new colony can develop. Evidence that spores survive in the soil has been obtained by culture of soil suspensions.

Presumably, since the mold will grow on agar, it also grows on decaying plant material when there is enough rain on the desert. Spores produced by the mold colony are very infectious and readily produce the disease when inoculated into experimental animals or when inhaled by susceptible humans, as many laboratory workers have learned the hard way.

Once inside the animal or human body, spores of the Valley Fever fungus undergo a change which results in a very different appearance. No thread-like struc-

tures develop in tissue. Instead, the spore enlarges until it is a sphere many times its original size. Differentiation of the contents within the thick wall of the sphere then occurs in such a fashion that the structure is soon filled with many spores about the size of a red blood cell.

Rupture of the wall of the sphere releases the spores into the tissues where each can develop into a duplicate of the parent organism. Spores can be swept throughout the body if natural defenses are incapable of walling off or destroying them.

Let's consider what this invasion does to our animals. Dairy and beef cattle in corrals are constantly subjected to dust churned by many hoofs. Along with the dust inhaled by the cattle comes an occasional spore of the Valley Fever fungus which is carried into the lungs a variable distance, there to multiply as described above. But in cattle no specific symptoms have as yet been attributed to this multiplication.

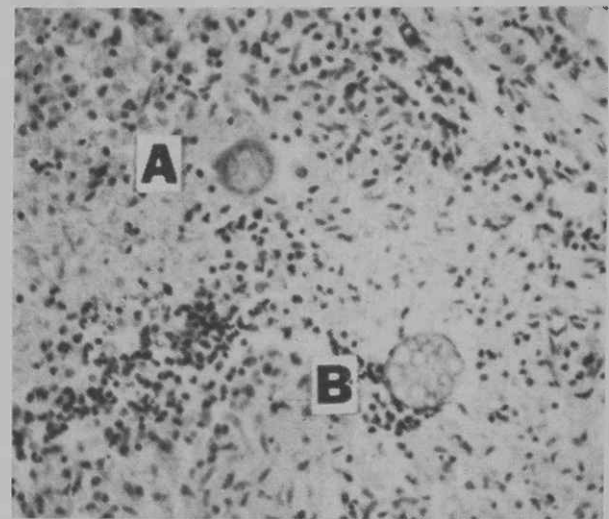
It is known that infection does occur in cattle because at slaughter the lymph nodes of the lungs and thorax show evidence of the battle to wall off the disease. The same process seems, for the most part, to protect sheep. For some reason, infections in horses haven't come to the attention of investigators.

However, our friend the dog isn't so fortunate. In his case, infection is marked by coughing, high body temperatures, loss of weight, occasional painful swellings of bones and joints, and, frequently, death.

Need More Information

Before concluding that Valley Fever is a disease of importance only to man and the dog, consider that many diseases of cattle remain unassociated with any specific causative organism, and that most cattle that die are not autopsied by trained individuals. Only recently have veterinarians learned to diagnose Valley Fever in dogs, and it remains a slow, difficult process to separate it from other diseases in this animal.

Perhaps we will eventually have complete proof that this fungus produces no



Valley fever organism in tissue.

A. Growing sphere.

B. Sphere that has matured and filled with spores.



Valley fever fungus colony growing on agar.

severe damage to the health of cattle other than to the lymph nodes. But it remains possible also that a specific set of symptoms, which we must learn to recognize, may belong to this disease. There is need to investigate the possible role of the fungus in the so-called "dust pneumonia" of feedlot cattle.

At present, treatment of the disease consists of helping the individual in his fight to wall off the infection. There is no proven drug available to assist in treatment at this time.

Control Difficult

Control will always be difficult, considering the dust problem existing in areas where the disease is common, but procedures that reduce dust will decrease exposure to Valley Fever. Fortunately, since environmental exposure to the disease is so common in the Southwest, we need not worry about animal-to-animal or animal-to-man spread, as this is considered the least likely method of incurring the infection.