

# AMERICAN VETERINARY REVIEW.

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EDITED AND PUBLISHED BY

**Prof. A. LIAUTARD, H.F.R.C.V.S.,**

*Foreign Corresponding Member of the Central Society of Veterinary Medicine (Paris).*

ASSISTED BY

C. B. MICHENER, D.V.S., NEW YORK,

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We have in this REVIEW completed an article of his on the important question of the production of immunity by inoculation with diluted virus, which will, no doubt, show that Dr. S. is quite master of the subject, and that the appointment which he has just received from the Commissioner of Agriculture was well deserved, and will prove but another opportunity for him to continue in the completion of this interesting work.

We also publish an article from M. Chauveau, presented to the Academy of Sciences, on a new method for the preparation of attenuated viruses, the process being no longer carried on by the influence of oxygen, as in the mode of Pasteur, or by dilution, as in that of Salmon, but by the action of heat, a process which seems, for many reasons, likely to take precedence in general practical application over that which is now generally in use on the continent of Europe.

It will be gratifying to the veterinary profession of America to learn that, young as she is in the field, she is already making her mark in the most important department of their calling, viz., that of the prophylaxy of contagious diseases.

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## REPORT OF CASE.

### HYDROTHORAX—TUBERCULOSIS IN A RHINOCEROS.

BY A. LIAUTARD, M.D., V.S.

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Mongo was a huge female rhinoceros, which since the age of three years had been one of the attractions of the "greatest show on earth," the property of Barnum, Bailey, Hutchinson & Co. Aged 16 years and weighing about 5,000 pounds, she had always enjoyed apparent good health. She was of a kind disposition, had always fed well, never coughed; drank about five pails of water a day. All that was noticed about her was that for the last three months she had a peculiarity of resting her throat over the edges of her cage, breathing then with difficulty, remaining in that position for a few moments, going about in her cage, to resume again the same position. This winter she has seemed somewhat delicate in feeding, eating about 10 quarts of oats and meal a day, a dozen of carrots, a couple of loaves of bread, and

about 50 pounds of hay sprinkled with water. She came from the winter headquarters at Bridgeport to the Madison Square Garden on Wednesday morning, the 19th of March. In the evening, at eight o'clock, she looked as usual, and was fed. The next morning, when her keeper opened her cage, he found her lying down, dead, in a position indicating that she had succumbed almost without a struggle, her bedding not being disturbed in the least, and no special noise having been noticed during the time by the watchmen.

She was brought in her cage to the hospital of the American Veterinary College, where a post-mortem examination was made by me, assisted by Dr. Coates and the two house surgeons, Drs. Kay and Critcherson.

On the opening of the cage the animal is found lying on her right side, the legs folded under the body, in her usual position, the head resting on the floor; the body is in good condition. A bloody mucus discharge escapes from both nostrils. Dragged outside of her cage by a number of men with ropes and pulleys, she was lowered on two dissecting tables, placed on her back, and her extremities secured to standards at each corner of the table.

An incision was then made on the median line of the body, from the chine down to the pubis, and the skin, which was found more than an inch thick, was dissected from the body. The abdominal muscles being removed, the internal viscera were exposed and taken out. The entire mass of the small intestines seems to be healthy, except in the anterior portion, and contain a bloody fluid; the mucous membrane is somewhat congested, and in some parts of a dark color and softened. This condition exists principally at the anterior extremity, or about a foot and a half from the pylorus. The large intestines are filled with fecal matter, the mucous membrane being slightly congested and softened.

On removing the stomach, a large nodulated tumor shows itself, between the œsophageal and pyloric openings, at the small curvature, filling it in its whole extent, round in its principal mass, and showing shoots of hard masses running alongside of the small curvature of the pyloric portion of the small intestine. This tumor is a tuberculous mass, hard, indurated, which on section shows a dense, fibro-granular aspect. In the single stomach

was found a certain quantity of food. The mucous membrane of the cardiac portion is normal, and covered with the porcelain-like structure, continues to the œsophagus. The pyloric portion presents three ulcerated patches; one about the size of a twenty-five cent piece, with well-defined, indurated edges, the center of the ulcers being flattened, soft, and of a pale reddish color.

The spleen is apparently perfectly healthy, presenting, however, towards the lower extremity, a few tuberculous deposits, situated in the fissure of the organ. One of them, about the size of a large walnut, is held in place between the layers of the great omentum.

The liver presents four lobes, is normal in color, perhaps a little softened, and offers on its nodulated surface a few tubercles, scattered irregularly. In the center of the hepatic structure is found a large tubercle, near the right lobe. The kidneys are lobulated, of dark color, slightly softened. The suprarenal capsules are enlarged and hardened, and also contain tubercular deposits. The mesentery and other parts of the peritoneum look normal. In the pelvic cavity a large mass of whitish-opaque albumoid, homogenous jelly-like structure is found, weighing about two pounds. The ovaries are large and healthy. The bladder contains but little healthy urine. In removing the uterus, the large mass shows the horns and the body of the organs covered by a large number of tuberculous masses, the largest about the size of a lady-apple. The mucous membrane slightly colored.

The sternum was then removed by section of the costal cartilages. In doing so, a large quantity of a clear, serous effusion escapes into the then empty abdomen. Measured, it is found that the thorax contains about twenty-eight gallons of this fluid, which has filled the cavity of the chest to nearly three quarters of its extent, squeezing the lungs in the upper portion of the chest, and producing a carnified condition of those organs. The lungs are adherent to the thoracic walls by strong fibrous bands of a dark bluish color. The right lung is in a hyperstatic condition, the anterior lobe of that lung being extensively emphysematous along the lower border. The surfaces of both lungs are filled with tubercular deposits, very heavy and dense. On section, the lungs allow the escape of a reddish fluid, which is

oozing from the divided surface, and numerous miliary tuberculous deposits are found in the whole pulmonary structure. The mucous membrane of the bronchii is congested, of a livid color, and their cavity is filled with frothy mucus.

The heart weighs about fifteen pounds. Its external appearance is healthy. The two ventricles are empty. There is a certain atrophy of the walls, and small calcareous deposits on the tricuspid and semi-lunar valves. The pericardium is adherent to the pleura and to the lungs by strong fibrous valves. The pericardiac and cardiac lymphatic glands are greatly enlarged and indurated, and slightly nodular on the surface. Three large tubercles are attached to the superior face of the sternum. The axillary lymphatic glands of both sides are very much enlarged, as are the pectoral, propectoral and lymphatic glands of the neck.

Microscopical examination of some of the glands, made by Dr. Peabody, pathologist at the New York Hospital, is reported as follows:

“I have just examined sections from the lymphatic glands, liver and skin of your patient, the female rhinoceros. I have never seen more typical or more beautiful illustrations of tuberculosis than the two former present. There are relatively few areas of caseous degeneration in my sections. I have never seen more perfect giant cells than these sections show, nor have I ever found them so numerous in any human tubercle. The skin is normal, so far as I have cut it.

“Very truly yours,

“NEW YORK, April 14, 1883.”

“G. L. PEABODY.

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## EXPERIMENTAL PHYSIOLOGY.

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### DIRECT AND RAPID ATTENUATION OF VIRULENT CULTURES BY THE ACTION OF HEAT.

BY M. A. CHAUVEAU.

The present subject has perhaps a great practical importance I will explain further on. For the present it treats principally of the general physiology of viruses, in the study of which I have