

## ANTIGENIC CROSS-REACTIONS BETWEEN THE GALACTAN FROM *MYCOPLASMA MYCOIDES* AND POLYSACCHARIDES FROM OTHER SOURCES

By

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### INTRODUCTION

In an earlier paper (Shifrine and Gourlay, 1965a) we mentioned the isolation of a gram positive coccobacillus from apparently normal cattle that had produced strong immediate-type skin reactions on inoculation of lipopolysaccharide from *Mycoplasma mycoides*. Sera from these cattle were also positive to the complement fixation test (CFT) and serum agglutination slide test (SAST) for contagious bovine pleuropneumonia (CBPP). Also in a preliminary publication (Shifrine and Gourlay, 1956b) we reported on the serological relationship between polysaccharides from normal bovine lung and *M. mycoides*. In this paper we give more details of this and further details of the gram positive bacterium. We also report on antigenic cross-reactions between the galactan of *M. mycoides* and polysaccharides from other sources. The significance of these various findings in the diagnosis and pathogenesis of CBPP is discussed.

### MATERIALS AND METHODS

*Strain of M. mycoides.* The Gladysdale strain was used throughout this work.

*Serological methods.* The Campbell and Turner complement fixation test (CFT) was carried out with the modification as previously described (Gourlay, 1965). The tube agglutination test (AT), the slide agglutination serum test (SAST) and the agar gel precipitin test (AGT) were performed as described by Gourlay (1964a) and the skin test by the method of Gourlay (1964b). The indirect haemagglutination test (IHA) used was that described by Perreau, Provost, Regnault and Orue (1964). For use in the AGT organisms A and B were passaged 10 times on nutrient gelatin slopes, then harvested and treated in an ultrasonic disintegrator for 15 minutes before use. The most purified extracts of the various polysaccharides were used for absorptions, AGT and skin tests. Absorptions were carried out with 10 mg. of antigen per 1 ml. of serum at 37°C. for 2 hours, followed by 4°C. for 18 hours. This was repeated 3 times.

*Isolation of the Gram positive bacterium.* Fourteen apparently healthy cattle at Muguga that had had no contact with CBPP were tested by various diagnostic methods and the results are given in Table 1. Five gave strong positive skin tests on inoculation of *M. mycoides* lipopolysaccharide (Shifrine and Gourlay, 1965a), 7 were positive and the rest doubtful to the CFT, 2 were weakly positive to the SAST and 2 had precipitating antigen in their sera. Two of the cattle were killed; one, A67, within a few days of testing and the other, A59, one month later. On autopsy A67 had numerous slight pneumonic lesions on the tips of both diaphragmatic lobes and on the tip of the right cardiac lobe. All other organs appeared normal. A59

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