LETTERS TO THE EDITOR

Note on Streptococcus agalactiae

To the Editor:

In Number 4 of Volume 3 of the International Bulletin, Dr. J. Howard Brown has presented two articles on the classification of streptococci. I think he has made a very useful contribution to this subject which must have vexed many bacteriologists.

I should like to add a few comments based on findings over 20 years when streptococci, mostly from bovine mastitis, were investigated.

Cultural and biochemical tests on 6,310 streptococci known to be Group B Lancefield revealed that 92.6 per cent gave the following reactions regarded as characteristic for S. agalactiae: Hydrolysis of sodium hippurate, growth in MacConkey's (40 per cent bile salt) agar, acid and clot in litmus milk within 24 hours at 37°C., acid not produced in mannitol, aesculin not hydrolysed. Final pH in glucose broth came within 4.01 and 4.40 for the majority of the strains although some gave values below 3.80 and some above 5.01. Nearly 1/3 of the total number was strongly haemolytic on ox blood agar. Those producing haemolysis were predominantly of (Stableforth's) serological Type 3: members of this type failed to produce acid in salicin much more frequently than did those of Type 1 or Type 7 (the only other serological types encountered).

There were 463 isolates which deviated from the pattern just outlined. The majority (343) of these were aberrant only towards litmus milk, viz. acid production or clotting delayed or absent. However, 48 did not hydrolyse sodium hippurate, 68 grew poorly or not at all in MacConkey's agar, 69 produced acid in mannitol and nine slightly hydrolysed aesculin. Repeated testing gave the same results and the strains appeared to be pure.

A total of 69 strains gave the standard reactions for S. agalactiae, but were not of Lancefield's serological Group B.

Of 2,547 strains tested in methylene blue milk (1:20,000 final concentration) 97.5 per cent gave reduction and clotting.

All strains were freshly isolated and tested immediately purity had been established.

I also had an opportunity to test 6,415 subcultures from 66 strains, some freshly isolated, some deliberately maintained under adverse conditions, for their reactions on sodium hippurate using Zwikker's reagent (copper sulfate and pyridine) to demonstrate benzoic acid. The strains came from milk from cows with subclinical and hyperacute mastitis, from cows before and after treatment with penicillin.

There was no evidence of nonhydrolyzing variants.

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