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Study of Bacteria Found in Eighty Cases of Non-Tuberculous Infections of the Urinary Tract.

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A single bacteriological examination of a catheterized specimen was made in each of 80 cases of urinary tract infection consisting chiefly of pyelitis. Only 3 cases failed to yield positive cultures. From the remaining 77 cases a total of 90 cultures was isolated. In 63 cases one organism only was found. In 12, two were present, and in 1, three different species were obtained. Among the 90 cultures 13 different species were represented as follows:

	Frequency	%
Staphylococcus aureus	19	21.1
Staphylococcus albus	18	20.0
B. coli	29	32.0
B. pyocyaneus	6	6.6
Streptococcus hemolyticus	3	3.3
Streptococcus viridans	3	3.3
B. alcaligenes	4	4.4
Non-hemolytic streptococcus	3	3.3
Enterococcus	1	1.1
B. pseudotetanicus	1	1.1
B. proteus	1	1.1
M. catarrhalis	1	1.1

It is interesting to note from the above data that the staphylococci were the most numerous group found and that the total Gram negative cocci outnumber the total Gram negative bacilli. The former represented 51.1% of the total, and the latter 46.6%.

That only 69% of the Gram negative bacillus group proved to be *B. coli* shows that the error in making diagnosis purely on the basis of a Gram stain of the urinary sediment may be very large.

A detailed cultural study of all the organisms was made, but it seems pertinent to mention here only certain results of this study.

A study of the hemolysing properties of the cultures revealed 1 hemolytic *B. coli*, 6 hemolytic *Staphylococcus aureus* and 2 hemolytic *Staphylococcus albus*.

Dudgeon[1] has called attention to a group of atypical colon bacilli that are characterized by their slow fermentation of lactose. In the above series 2 such cultures were encountered. Both belonged to the *B. coli communis* group and showed the presence of gas on lactose only after 4 days incubation.

All the *B. pyocyaneus* cultures were typical regarding their production of pigment and the liquefaction of gelatine. One of the 6 strains, however, deviated from the usual behavior of this organism in its acid production from the sugars. Glucose, lactose, and maltose were rapidly attacked by this strain, the Andrade's indicator of the medium showing a strong acid reaction in 24 hours. This is the first lactose fermenting *B. pyocyaneus* ever encountered in this laboratory. Sherwood[2] mentions one such strain.

B. pseudotetanicus is a large Gram negative aerobic bacillus with sub-terminal spores. It is generally credited with being of soil origin. The only other reference to this organism as a urinary tract infectant is in the paper of Caldwell[3] who found it 12 times in 112 cultures of Gram negative bacilli. In a subsequent examination of this case this organism was not found.

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Ephedrine-Epinephrine Antagonism.

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Antagonism of epinephrine action by high concentrations of ephedrine (1:9000-1:6000) has been described by several European workers,[1] using Magnus preparations of excised small intestine of rabbit and cat and of excised guinea pig uterus. In extending the study of the ephedrine-epinephrine antagonism to Magnus strip preparations of small intestine, colon and uterus of various species (cat, rabbit, dog, rat, guinea pig) I have found that it occurs with all these organs. Furthermore, not only did high concentrations of

[1] Dudgeon, L. S., and Pulvertoft, R. J. V., *J. Hyg.*, 1927, xxv, 285.

[2] Sherwood, N. D., Johnson, T. L., and Radotinsky, I., *Univ. Kansas Sci. Bull.*, 1926, xvi, 91.

[3] Caldwell, J. A., *J. Inf. Dis.*, 1928, xliii, 353.

[1] Nagel, A., *Arch. exp. Path. Pharm.*, 1925, cx, 128. Kreitmair, H., *Arch. exp. Path. Pharm.*, 1927, cxx, 189. Reinitz, N., *Compt. rend. soc. biol.*, 1928, xcviii, 809.