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# Cultivation of Pleuropneumonia-Like Organisms from Female Genital Organs.*†

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The technic formerly described for staining bacterial cultures *in situ* on the surface of agar was employed in studying routine plates submitted for gonococcus examination.[1] In the course of 2 months pleuropneumonia-like organisms were demonstrated in the cervical secretions of 5 patients. The medium used for the gonococcus is similar to the medium employed formerly in cultivating *Streptobacillus moniliformis* and pleuropneumonia-like organisms.[1] It is essentially a sedimented boiled blood agar to which is added 30% buffered ascitic fluid. The plates are incubated for 2 days in partial $CO_2$ tension.

Pleuropneumonia-like organisms were present in the genitals of about one-third of the females. Thus far similar organisms have not been found in plates inoculated with secretions from the urethra or prostate of males or from eyes of babies suspected of gonococcus infection. However, the female and male material examined was not comparable. The majority of female patients had pelvic infections, while the cultures from males were mostly release cultures from treated gonococcal patients. Women without pelvic disease were not studied.

The group of pleuropneumonia-like organisms is characterized at present by purely morphological criteria. The organisms cultivated from the female genitalia are indistinguishable in morphology and in the appearance of colonies from the strains isolated from rats and mice.[2] The young colonies consist of very small pleomorphic granules and filaments which grow into the medium and are stained deeply *in situ* with methylene blue. The surface of fully developed colonies consists of large bodies (3 to 10 microns) which are at first deeply stained but which later become vacuolized and produce a foam-like structure. After 48 hours the colonies are often only

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1 Dienes, L., *J. Inf. Dis.*, 1939, **65**, 24.

2 Dienes, L., and Sullivan, E. R., PROC. SOC. EXP. BIOL. AND MED., 1939, **41**, 424.

10 to 20 microns in diameter. In transplant they develop to a considerably larger size. Four strains were isolated in pure culture and their properties will be more closely studied.

The tiny colonies were present in abundance in all cultures except one. In 2 cases they were associated with the gonococcus; in 3 they were found in the absence of gonococcus. In one case they persisted in the cervical smear even though the gonococcus disappeared following the administration of sulfanilamide.

In a previously described case a similar organism was isolated in pure culture from a suppurated Bartholin's gland.[3] At that time, it was thought the patient's contact with rats might have been responsible for the infection. With the knowledge that similar organisms occur frequently in the female genitalia it seems more probable that the previously observed suppuration was caused by a human strain and that such strains are potentially pathogens. Unfortunately, the strain isolated from the suppurative lesion was lost, therefore its origin cannot be established. According to Sabin's observations, mice often harbor pleuropneumonia-like organisms in the conjunctiva.[4] These organisms, although usually harmless, may under appropriate conditions become pathogenic. The pathogenicity of the cattle, goat and rat strains is well known. It is of special interest that all members of the pleuropneumonia group produce acute or chronic joint lesions.

At present, it is impossible to state whether the strains isolated from female genitalia are potentially pathogenic although the above mentioned single observation suggests that they may be. They may only represent another variety of the many unknown saprophytic microörganisms of the mucous membranes. The frequent presence of a member of the pleuropneumonia group of microörganisms in human beings certainly deserves further study.

[3] Dienes, L., and Edsall, J., PROC. SOC. EXP. BIOL. AND MED., 1937, **36**, 740.

[4] Sabin, A. B., *Science*, 1939, **90**, 18.