SCIENTIFIC PROCEEDINGS

ABSTRACTS OF COMMUNICATIONS.

Seventy-fourth meeting.

Presbyterian Hospital, March 15, 1916.

President Loeb in the chair.

55 (1119)

The cytology of the exudate in the early stages of experimental pneumonia.

By **FRANK A. EVANS** (by invitation.).

[*From the Department of Pathology of the Presbyterian Hospital.*]

The cells have been studied in the early exudate of pneumonia produced in rabbits by intrabronchial injection of pneumococcus group I, group IV, and by an attenuated strain of pneumococcus furnished by Dr. Carrol G. Bull's laboratory at Rockefeller Institute; by streptococcus hemolyticus and by a streptococcus isolated from the mouth of a normal individual by Miss Olmstead of Presbyterian Hospital; and in the exudate in reaction to intrabronchial injection of 33 per cent. egg yolk in neutral broth. The early exudate in three cases of human pneumococcus pneumonia has also been available for study.

In all of these lesions, although many polymorphonuclears were often present, in many of the alveoli the cytology of the exudate was predominantly mononuclear in character. These mononuclear cells may be classified as follows: a few typical small lymphocytes of the blood; a few epithelial cells from the alveolar walls; relatively many oxydase-containing large mononuclears greatly resembling the so-called transitional cells of the blood; and almost as many non-oxydase containing large mononuclears of

the blood or closely related forms. In pneumonia induced in animals heavily stained with lithium carmine, no cells stained with carmine took part in the formation of the exudate. No plasma cells were seen.

56 (1120)

Technique of cultivating human tissues in vitro.

By R. A. LAMBERT, M.D.

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Several difficulties have been encountered in the cultivation of human tissue in vitro.

In the first place human fibrin is readily liquefied by fresh tissue, so that when human plasma is used as a culture medium the cells find no framework on which to grow. Losee and Ebeling overcame this difficulty by transferring the tissue fragments at frequent intervals before liquefaction took place. We have solved the problem in another way which does not necessitate frequent transfers. The method consists in using as a culture medium chick plasma, the fibrin of which resists digestion, with the addition of an equal quantity or more of human serum. In this medium the cells grow much more actively than in pure chick plasma. Since there is no liquefaction it is not necessary to make subcultures oftener than every 5 to 7 days.

That fresh human tissue cannot always be obtained when wanted has appeared to be another difficulty in the study of human tissues in cultures. We have found, however, that human tissues, just as those of lower animals, may be preserved for 5 to 10 days before using, if cut into small pieces, covered with salt solution and put aside in a cool place. Serum and Ringer's solution possess no advantage over ordinary salt solution and a temperature of 15° C. appears to be as satisfactory as a lower temperature. Tissues obtained at autopsy may be used though often infected. We have obtained good growth of connective tissue from pieces of liver and testis taken from a body six hours after death.

The sterilization of infected tissues constitutes a problem which we have not yet solved satisfactorily. Skin, which is