

blood; these form an integral part of granulation tissue. 2. The cells forming the new tissue are not the leucocytes, but cells which are formed from the tissue cells, and which in an early stage of their formation are capable of changing their position in the tissue, that is, they are capable of combined movement. 3. The leucocytes take no active part in the formation of new tissue. 4. The multinuclear leucocytes which are present in growing tissue are for the most part taken up and destroyed by the developing cells of the tissue; these leucocytes are, in fact, the food of the growing cells. 5. The mononuclear leucocytes pass into the multinuclear form, and are then destroyed by the tissue cells. Professor Grawitz agreed with Dr. Ziegler in so far that he considers that the mononuclear leucocytes, when they become multinuclear, take no part in the new tissue formation; but in acute inflammation of connective tissue there are mononuclear cells which it is impossible to distinguish from the migrated leucocytes; and this being so, it is possible that the leucocytes may play some part in the formation of new tissue. Professor Marchand stated that in acute inflammatory processes which resolve, the leucocytes are either destroyed, or they pass back into the blood stream. He agreed completely with Ziegler in considering that in the healing process the formation of the new vacuolar connective tissue is due to the recently-formed cells of the tissue. The same holds good for inflammation of surfaces, as in the organisation of a thrombus, for example. As the newly-formed tissue cells closely resemble the leucocytes, Marchand would reserve the name "wandering cells" for the latter; or a better name would be "exudation cells," while the tissue cells would be called "tissue-forming cells" or granulation cells (*Bildungszellen*). Where there is prolonged destruction of the normal tissue formation, the tissue-forming cells either die or they become giant cells.

*Pathogenic Microbes.*—On August 5th the morning sitting of the Section was devoted to papers dealing with bacteriological subjects. Some of the points raised were of great interest. MM. Cornil and Babes read a paper entitled *Des Associations Bactériennes dans les Maladies*. This is a suggestive subject, as it deals with the condition where two or more organisms are present in the disease. Their presence complicates the investigation of the disease experimentally. A simple example may be taken in the presence of an acute abscess due to the staphylococcus pyogenes aureus in a patient suffering from tubercle (due to the bacillus tuberculosis). Sometimes the organism which is inoculated after the first has established itself has not time to act, even if it is pathogenic; it thus generally becomes attenuated. This association the author divided into several classes, the chief of which are the following: The two microbes present may be both pathogenic and belong to closely allied varieties or to different varieties. An example of the latter condition is found in the streptococcus and bacillus which have been isolated in diphtheria. Also there may be a septic or a pyæmic organism present in the body which is primarily affected with an infectious malady. The microbe also which is secondarily inoculated may be localised in its action while the body is itself affected generally by the microbe primarily inoculated. A non-pathogenic microbe may be present with a pathogenic microbe, and may produce modified malady. Or a pathogenic microbe may be present with non-bacterial parasites.

*Actinomycosis.*—The paper and demonstration of

Professor Max Wolff on the etiology of actinomycosis were of importance. Dr. Wolff has succeeded in obtaining good cultures of actinomycosis in agar-agar. The first stage of their growth is in the form of rods, like bacilli. These rods then become elongated into fibres. In the animal disease club-shaped masses are formed, excellent examples of which were shown by Dr. Wolff. The inoculation of the culture in agar-agar of the actinomycosis into the peritoneum of the rabbit results in the formation of rounded tumors varying in size from a pea to a walnut, which show the typical club-shaped appearances of the animal disease. These club-shaped masses are then developed from the rods and fibres of the culture in agar-agar. Herr Gross (Cracow) followed later with a communication on the successful vaccination of actinomycosis in the anterior chamber of the rabbit's eye. This paper was interesting in connection with Dr. Wolff's. The case was one of actinomycosis in man, the tumour being situated in the mammary region, and attached to the ribs. It was punctured, and a few drops of blood only were obtained. This blood contained the rod-like forms described by Wolff as occurring in the agar-agar culture, and although Gross was not able to obtain an artificial culture, inoculation into the anterior chamber of the rabbit's eye produced a definite tumour with rosette forms. The eyes were shown, and presented an extremely inflamed appearance. The tumour was definite, and, in one case as large as a sixpence and about one-eighth of an inch thick.

#### SECTION OF PHARMACOLOGY.

The first meeting was held on Monday, August 4th, for the purpose of appointing officers, and Dr. Lauder Brunton was elected one of the Vice-Presidents. The early hour at which it was held prevented a large gathering, but the second meeting on Tuesday was largely attended, Schmideberg, Binz, Feihavc. Kobert, and many other German pharmacologists to be present, as well as a large contingent from other countries.

*Spermin.*—The first paper read was by Professor Pohl, of St. Petersburg, on Spermin. Schreiner many years ago discovered that certain crystals found by Charcot and others in the semen consisted of an organic base, spermin, united phosphoric acid, and Laderberg and Obel two years ago stated

that it is identical with ethylenimin  $\text{CH}_2$   
 $\text{CH}' \text{NH}$ ,

which can be made by warming ethylenediamin. Pohl has extracted spermin from an emulsion of the testical of young animals. He describes it as a colourless, tasteless syrup, capable of forming salts with acid, and showed crystals of the phosphate and hydrochlorate. He affirms that spermin slows and strengthens the heart's action, and stimulates the nervous and genital systems. He suggests the odor of castoreum and musk may be due to the presence of ethylenimin.

*Caffein.*—Professor Petrescu, of Bucharest, who has devoted much attention to the study of caffeine, gave reasons for believing that under some conditions it should be given in much larger doses than have hitherto been used. He had given 60 grains daily with advantage; especially must the dose be large, if it be required to influence the heart muscle. In commenting on this paper, the President remarked on the advantage which would accrue if the effect of varying doses of the older drugs were carefully investigated, instead of so much attention being directed to the new medications.