

micro-organisms, provided with a nucleus and refractive ectoderm, have been found in the blood of various animals by more than one observer, but notably by Klebs and Dohle, Lösdorfer and Stassano. Such bodies were at first confounded with degeneration products of the red corpuscles but have been more recently determined with much probability to be protozoan in character. These organisms go by the name of cytorrhcytes and have been found in vaccinia and small-pox (Councilman, Magrath, and Brinkerhoff) and by Siegel in syphilis. Siegel thinks that such bodies can easily be differentiated from the products of cell-destruction. Siegel in 20 cases of syphilis examined found what he calls the cytorrhcytes *luis* in all, not in the first stage, but during the period of cutaneous efflorescence. They disappeared when mercurial inunction was practiced, nor could they be detected in healed cases. The organism could be inoculated into rabbits, and white mice. Siegel was enabled to grow the cytorrhcytes on human blood-bouillon and ascitic fluid bouillon. Apes could be inoculated with the organism and presented the lesions usually regarded as characteristic of experimental syphilis. Weichselmann (*Deutsche med. Woch.*, 1906, S. 219), however, got similar lesions in a macacus monkey when inoculated with the blood of a rabbit not infected with syphilis. He suggests that the lesions were due to the action of a foreign blood, or else to blood parasites existing within the rabbit. Siegel's views are not accepted as yet by any other pathologist of note, nor have his observations been confirmed. Possibly, there may be some relationship between the cytorrhcytes and the *spirochæta pallida*, but this is for many reasons unlikely. No one as yet has made out more than one phase of development in the life history of members of the *spirochæte* family. It would be curious, however, if the popular classification of certain eruptive disease into the "pox" and the "small-pox" should prove to have a scientific foundation.

The place of the *spirochæte* in Nature is still under consideration. We know now, however, that there are a great many of these spirillar organisms, some of which are pathogenic and some not. In the former group we can place the spirillum of Obermeyer, the spironema of Schaudinn, and the *spirochæte* of African "tick-fever." Other *spirochætes* have been found in the skin and mucous surfaces, in ulcers, ulcerating new growths, fæces, and stomach contents, the best known of which is the *spirochæta refringens*, which are apparently harmless, or, as yet, have not been proved to be pathogenic. It is a matter of some interest that a *spirochæte*, resembling the *spirochæta pallida*, has been found in frambœsia or yaws (McLennan: Neisser, Baermann, and Halberstädter), a disease which has many analogies