that the primary and secondary syphilitic lesions contain this organism either constantly or in the majority of cases.

The spirochæta pallida is described by its discoverers as measuring in length from 4 to 10 microns, the average length being 7 microns. In width it varies from unmeasurable thinness to ½ micron. It possesses from three to twelve, sometimes more, curves, which are sharp and regular and resemble the curves of a corkscrew. The poles are sharpened, and the organism is motile, the motions consisting of rotations on the long axis, forward and backward movements, and bending of the entire body. The organism has also been shown to be flagellated.

The spirochæta pallida stains with difficulty and is seen only with the highest powers of the microscope. A second form of spirochæta, called by Schaudinn and Hoffmann the spirochæta refingens, has been described several times, especially in inflammatory venereal processes. It is a larger spiral with fewer curves, more wavy than corkscrew in shape, more refractile, and stains more distinctly than the pallida. This second form occurs in decomposing secretions about the genitals and is saprophytic in character like the smegma bacillus.

In examining for the spirochæta pallida, a number of staining methods have been used, but those most usually employed are Giemsa's method as used by Schaudinn and Hoffmann, Oppenheim and Sachs's method, and DeMarino's method.

*Giemsa's Method.*—The slides are fixed in absolute alcohol for half an hour, and are then immersed for twenty-four hours in the following solution :—

1. Twelve parts of a solution of eosin (2.5 c.c. of a one per cent. solution of eosin in 500 c.c. of water);

2. Three parts of Azur 1 (one part of Azur 1 dissolved in one thousand parts of water).

3. Three parts of Azur 11 (a solution containing 0.8 parts of Azur 11 per one thousand parts of water).

The stained preparations are washed in water, dried in the air, and examined with the highest power available (1-12 or 1-16 oil immersion lens of Leitz).

*Oppenheim and Sachs's Method.*—The slides are dried in the air and then placed in the following solution without fixation :

1. One hundred c.c. of a five per cent. solution of carbolic acid in water.

2. Ten c.c. of a concentrated alcoholic solution of gentian violet.

The slide is then dried slowly by very gently heating it over the Bunsen flame until it begins to steam. Some writers advise that the stain be heated on the slide until it begins to boil.