

The circulatory. (3) The nervous. (4) The blood theory; and quotes the results of the work of various authorities, viz., Virchow, Grandidier, Sahli, Kidd, Wright, Weil and others, and after a careful consideration of the results of the work of these investigators, concludes that the only theories to be considered are (1) the vascular, and (2) the blood.

Wright, Sahli and Weil have studied the coagulation of the blood most thoroughly. According to Wright, the blood of hemophils is low in clotting power, being deficient in calcium salts, thus causing the persistence of the hemorrhages. Sahli and Weil differ considerably in their views. Weil holds that there are two distinct types of hemophilia: (1) the hereditary, and (2) the sporadic; and states that while the blood in both types is deficient in plasma, owing to the lack of salts of calcium, there is in the hereditary type an anti-coagulation substance present. He has demonstrated by intravenous injections of human blood serum that the hemorrhage from the sporadic or occasional bleeder is readily controlled, while the same procedure has no effect on the hereditary type. Animal serum is less efficacious than human serum. Sahli attributes the deficiency of the plasma to some derangement of the vascular walls, whilst physiologically the cells of the vascular walls secrete special substances (Trombo kinase or zymoplastic substances), destined to set the plasma actively in motion. In hemophils this substance is lacking.

Labie suggests a type of hemophilia due to lack of contractile power of the capillaries—a very old theory, and one of which much may be said in its favor.

*Morbid Anatomy.*—Various changes have been reported.

*In the heart.*—Virchow and others have found a thinness of the walls of the ventricles and interventricular septum, also fatty degeneration.

*In the blood vessels.*—Blagden, as far back as 1817, reported an extreme thinness of the walls of the blood vessels. In some of the vessels there were very few muscular fibres.

Dr. Percy Kidd reported observing abnormally thin blood vessels and fatty degeneration of the heart.

*In the joints.*—Legge very fully describes the changes found in joints. In a joint that had been recently affected and for the first time, apart from the presence of a small amount of blood, there was nothing abnormal. In later or more chronic cases, where there had been repeated hemorrhages, the synovial lining was thickened and discolored. The cartilages were thin, roughened and worn out, especially where there had