

immediate neighborhood of the bile capillaries, and here again there is the same reaction with ammonium sulphid, and by means of Perl's test with potassium ferrocyanid. Examining a series of livers from cases of pernicious anemia, I find in them identically the same condition, namely, that whereas under the ordinary high power, or even the ordinary 1/12 oil-immersion, all that one sees is an irregular massing of fine granules in the liver cells, if one examines carefully and conscientiously by means of a yet higher power of immersion-lens, these irregular granules resolve themselves into irregular clumps of stumpy ovoids, as again of minute diplococci, and again into isolated diplococcoid bodies which may or may not show a fine halo round them, situated in the liver cells. Nay more, in advanced cases of pernicious anemia, one finds the same bodies also crowded in the very much swollen endothelial cells. In both positions these take on a reaction for iron, but even when stained for iron, as by Perl's test, the diplococcoid nature can be made out in a large number of the isolated masses on careful focusing.

I do not mean to say that all show themselves as diplococci; there are numerous isolated granules as again bodies of a more oval shape, and again certain bodies, roughly the same diameter, which often appear to be definitely bacterial in form. But on careful study the number of double bodies, of dots of the same size, is so remarkable and so frequent that the diplococcoid nature of the granules is their especial characteristic.

It is now more than a year since my attention was called to the fact that the colon bacillus when virulent is especially liable to set up hemorrhagic inflammation in the lower animals, as again in certain cases in man, so that in hemorrhagic peritonitis we very frequently come across abundant cultures of this form. As Sidney Martin has pointed out, parallel inoculations in lower animals, of the closely allied typhoid bacillus, lead to a non-hemorrhagic disturbance. Thinking over this it occurred to me that very possibly the toxins of the colon bacillus might have some peculiar action on the blood and on the vessels, and by following this train of thought