stained, have observed. Dogiel,[85] however, finds the cone of origin and axis cylinder itself are finely granular, and considers the Nissl granules are formed by the running together of these fine grains. Dogiel's method consists in staining the fresh material in methylene blue, fixing in ammonium picrate, and transferring to a mixture of ammonium picrate in glycerine, where the tissue remains for some time, in order to get sufficiently transparent for examination.

Using this method on the retina, and spinal and sympathetic ganglia, one obtains figures of cell-structure exactly resembling the figures of Dogiel. In this way spinal ganglion cells were obtained with the cone of origin, and the process filled with bluish-black grains resembling some of Dogiel's figures. This structure must be considered entirely artificial, for these grains occur more or less uniformly throughout the whole preparation, and the examination of tissue before and after fixation shows that they are formed by the precipitation of uncombined colouring matter. Examining the cells, stained in methylene blue, but not fixed in the picrate, one sees they are either granular, *i.e.*, the Nissl granules only are stained or they are uniformly stained, *i.e.*, the intergranular substance is stained as well as the granules, but if one puts the same cells through the fixing process, one finds fine dots of precipitated colouring matter all over the cells. This can be most easily followed in the retina, as little or no teasing of the preparation is necessary, and errors from that source are avoided. If one stains a retina with methylene blue, and examines it after washing as much of the colour as possible out of the preparation, one will find the nerve fibres are uniformly stained ; but, if one puts the same retina through the fixing process, and then examines again, one sees the nerve fibres are filled with spindles and round masses resembling what Dogiel figures. The same change may be followed in sympathetic and spinal ganglia, in which uniformly stained cells become covered with precipitated colouring matter in the process of fixation. The Nissl granules have, in the fixed preparations, a different tint from this precipitated colouring matter, and could not be formed by the running together of these masses, even if the latter were elements of the cell. From my observations on preparations stained by Dogiel's process, I have concluded that his method is one of the best to show the morphological connections between the

85 Dogiel, A. S., l. c. and "Die Structur der Nervenzellen der Retina," Archiv. f. Mik. Anat., XLVI, p. 394, 1895.

Also : "Zur Frage uber den feineren Bau des Sympathischen Nervensystems bei den Säugethieren," Arch. f. Mik. Anat., XLVI, p. 305, 1895.

Also : "Zur Frage uber den feineren Bau der Spinalganglien und deren Zellen bei Säugethieren," Inter. Monat. f. Anat. u. Phys., XIV, p. 73, 1897.