parts of sublimate saturated in ninety-five per cent. alcohol and of a two per cent. solution of potassium bichromate in water. Small pieces were left in the freshly prepared mixture for two to four hours, washed in fifty per cent. alcohol, and then passed through the grades of alcohol. Material intended for chemical investigation was fixed in alcohol. The cells obtained from alcohol fixation are not materially different from those obtained with other fluids. The cone of origin and the process of spinal ganglion cells have nearly the same appearance in well preserved alcohol tissue that they have in sublimate material. Flemming's failure to get good results with alcohol may have been due to the circumstance that he did not leave his tissue in the alcohol for a sufficient time. Three days in alcohol as in Flemming's[15] method is not enough to insure complete coagulation of the proteids of the cell.

After fixing and hardening the material was imbedded in paraffin, using oil of bergamot for infiltration. Sections were attached to the slide by the distilled water method and stained.

I.—The Structure and Micro-Chemistry of the Nerve Cells of Mammals.

It is generally believed that three substances enter into the formation of the body of nerve cells: (1) the Nissl granules, (2) a spongioplasm that is generally believed to be fibrillar but which may be reticular, and (3) a hyaloplasmic ground substance in which the two former are embedded. As this structure is found in the nerve cells of mammals and the nerve cells of this class have been most frequently studied, they will form the subject of this section.

Material was used from the following animals:—man, ox, pig, sheep, dog, cat, rabbit, guinea pig and mouse. In most cases pieces from the cortex, cerebellum, cord, spinal and sympathetic ganglia were obtained and fixed in various fluids, but by preference in alcohol and the bichloride-bichromate mixture. The shape and distribution in the cell of the Nissl granules are best demonstrated by staining sections fixed to the slide for a few minutes in an aqueous solution of toluidin blue or methylene blue, but preferably in toluidin blue, which v. Lenhossek regards as a specific stain. After staining, the sections are differentiated in a mixture of aniline and alcohol, cleared in oil of bergamot and mounted in balsam. The results obtained with this method are similar in every respect to those obtained with the more laborious process of Nissl.

[15] L. c., p. 385.