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The mode of occurrence of these granules in embryonic and foetal cells has evoked considerable interest. Vas⁸ and Eve found the chromophilous substance uniformly distributed in the nerve cells of foetal rabbits, and Szczawinska⁹ observed the same for embryonic cells of selachians. Bühler noticed that the granules were entirely absent from the nerve cells at an early stage. Timofeew¹⁰ observed that in the interval between the fourth and sixth day of incubation in the chick, the chromophilous substance increased markedly in amount and was uniformly distributed.

None of the above observers seem to have suspected any other than a cytoplasmic origin for this substance and none of them have followed out in detail the appearance of this substance in the cell. The nucleoproteid nature of these bodies suggested the nucleus as a possible source of the substance forming them, and this inference has been confirmed by a series of observations made on mammalian and avian embryos. Further evidence in support of the nuclear origin of these bodies is found by the examination of the structure of the nerve cells of animals in which no Nissl granules occur. These observations will form Parts 2 and 3 of the present memoir, while Part 4 will be devoted to the discussion of certain general considerations with respect to the structure of the nerve cell that have recently been the subject of much investigation.

The question of a good fixing agent for nerve cells has been discussed by many writers but more particularly by Flemming,¹¹ v. Lenhossek¹² and Held.¹³ Flemming, v. Lenhossek and with them many others find that saturated aqueous sublimate is the most satisfactory fixing fluid for nerve cells. Held, believing in the foam-like structure of protoplasm, does not consider it as good as other fluids. Besides sublimate, Carnoy's fluid, Flemming's fluid and picrosulphuric acid are generally found to give good results. With all these fluids fair results were produced, but the sharpest granules and the clearest intergranular substance were obtained by using the modification of Foa's fluid as recommended by Bensley,¹⁴ viz., equal

⁸ Vas, Friedrich, "Studien über den Bau des Chromatin in der Sympathischen Ganglienzelle," Arch. f. Mik. Anat., XL, p. 375, 1892.

⁹ Szczawinska, W., "Recherches sur le système nerveux des Selaciens," Arch. de Biologie, XV, p. 463, 1897.

¹⁰ Timofeew, D., "Beobachtungen über den Bau der Nervenzellen des Spinalganglien und des Sympatheticus beim Vogel," Inter. Monat. f. Anat. u. Physiol., XV, p. 239, 1898.

¹¹ Flemming, W., "Ueber den Bau der Spinalganglienzellen bei Säugethieren, und Bemerkungen über den der centralen Zellen," Arch. f. Mik. Anat., XLVI, p. 379, 1895.

¹² v. Lenhossek, M., "Ueber den Bau der Spinalganglienzellen des Menschen," Arch. f. Psychiatrie, XXIX, p. 345, 1897.

¹³ Held, H., l. c. and Arch. f. Anat. u. Phys., Supp., p. 273, 1897.

¹⁴ Bensley, R. R., "Mammalian Gastric Glands," Proceedings of Canadian Institute, Vol. I, Part 1, p. 11, 1897.