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and an inner granular layer. The next distinct stage which His distinguishes in the development of the nerve cell is the neuroblast phase. Here an oval nucleus bears a conical cell body, and this in turn is continued into a long process. The nucleus is moderately rich in chromatin of which there are several masses united by a filament. There are no protoplasmic processes and the protoplasm around the nucleus is very scanty. The neuroblasts arise in the inner layer from the germinating cells and pass out secondarily into the mantle layer of the wall. In the transformation of the germinating cells into neuroblasts His distinguishes five stages:

- (1). Germinating cells of round form with a broad protoplasmic body.
- (2). Germinating cells of round form with initial point and broad protoplasmic mantle.
- (3). Intermediate cells of pear shape with little protoplasm around the unclosed nucleus. The cytoplasm is continued into a long process and the cells may still lie close to the internal membrane.
- (4). Intermediate cells of pear shape with closed nucleus, deeply staining, outer cone, but little protoplasm around the remainder of the nucleus.
- (5). Finished neuroblast.

My observations confirm those of His on the origin of the neuroblasts and in addition show the fate of their chromatin, a point not touched upon by His.

Germinating cells occur in the pig from the earliest stage procured by me (7mm.) to that of 18mm. length. If a section of a cord of, *e. g.*, a 10mm. pig, is stained with eosin and toluidin blue, one finds that all the blue-staining substance in the germinating cells is confined to the chromatin of their nuclei. The reactions for iron demonstrate that the cytoplasm is devoid of substance containing this element. At this period all iron-holding material is confined to the chromatin of the nucleus.

These cells are of round or oval shape, (Fig. 12), and are in some stage of mitosis. The cytoplasm is free from iron-holding material, or from material staining with toluidin blue. The cells are sometimes in the loose-skein phase, sometimes in the dyaster stage but most frequently in the equatorial-plate phase. The cells are generally in the equatorial plate phase when the process begins to be formed. As the cone increases the chromatin becomes excentric (Figs. 13 and 14). There is