be seen that a single neurone may make connection with a large number of other neurones, a fact which it is obvious must be of great



FIG. 4. An axone with a greatly branched axis cylinder pr. cyl. (after Van Gehuchten).



FIG. 5. A longitudinal sagittal section of the posterior column of the spinal cord of cat 15 days old (after Ramón y Cajal) by the Golgi method. A, nerve fibres or axones of posterior column; B, collaterals; C, groups of collaterals running towards the grey matter; D, end arborizations of collaterals in the dorsal horn; E, axis cylinder of a neurone.

physiological and possibly also psychological importance.

Figure 6 shows how abundant the branches of axones may be which surround a single cell body, making in this case what is termed a *basket*.

In figure 7, the neurones are represented in different stages of development. In the portion on the left hand which depicts the spinal cord in a chick on the third day of incubation, we may notice cells in process of great activity (*mitosis*) and others (*neuroblasts*) that are in a somewhat later stage of development which is carried still further in what is shown on the right representing a chick embryo two days older.

Figure 8 is a truthful representation of an unusually happy transverse section of the spinal cord in an early chick embryo. Outside the cord one sees the spinal ganglia on each side; one set of axones proceeding towards the cord as the

posterior root, the other outwards and joining with the anterior root to form the. mixed nerve. Within the cord terminal arborizations are abundantly present. The motor neurones of the anterior horns are sending out their axones to form the anterior root which being continued, constitutes the motor nerve, or the motor portion of the mixed nerve. All the facts go to show that the cell body is the trophic or nutritive centre of the whole neurone; hence it follows that if an anterior root be divided, degeneration is towards the periphery and constitutes secondary or Wallerian degeneration. If the section be made in an afferent or sensory neurone on either side of the cell-body, degeneration follows beyond the point of section, so that what could not be adequately explained at all a comparatively few years ago is now so simple that no effort is required to remember the ordinary laws of degeneration.

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