BOOK REVIEW


The present is the last of Professor Cone’s series on the subject of the human cerebral cortex. For the first time, the investigator has been able to deal with the cortex of the living infant. Three brains at age 15 months were available and weighed 1008, 1050, and 1034 grams. Six other brains (999 grams, 12 months; 990 and 991 grams, 13 months; 944 grams, 14 months, and 941 grams, 15 months) were available for study. For one 14-month available brain no weight is given. The relatively small brains came from underdeveloped infants.

The scheme of parcellation followed by Cone is that of Economo and Koskinas and he finds that his material, including the 12, 13, and 14 month specimens, is in agreement with their plan for the adult. Cone observes “the general pattern of the microscopical structure of the cortex is the same in all these ages” and that “in all the ages previously described in volumes I, II, III, and IV this series of monographs, any changes which occur in structures with advancing age are a matter of degree rather than kind. No new elements of structure are introduced in the course of development.”

The features studied by Cone for comparison with regard to degree of difference between the 15 and sixth month infant are: 1) width of cortex, 2) number of nerve cells, 3) size of nerve cells, 4) condition of chromophil substance, 5) neurofibrils, 6) size, compactness of structure, and length of the processes of nerve cells, 7) pedunculated bulbs, 8) size and number of myelinolous fibers, 9) state of myelinolysis.

Depth would appear not to yield incontrovertible proof of degree of development since Cone finds that development may proceed in such a manner as to increase the total surface area of the cortex rather than its depth. There is, however, an increase in the width of layer IV in all areas studied and layer VI shows an increase in a large number of regions. Layer V shows an increase in relatively few regions.

The number of cells per unit area shows a uniform decrease indicating that expansion of intercellular spaces has gone on very generally regardless of whether the depth of any given layer or region has increased. The rate of growth would appear to have been most rapid in the temporal, insular, and cingulate cortex and least so in the frontal region.

The size of myocytes is most consistently increased in layers II or IV.

Cone has previously described his method of comparing degrees of development of the chromophil substance. It is not easy to abstract his findings in this regard and the present reader is referred to the monograph for the details.

In the cortex of the 15 month infant neurofibrils are only present in the layer V and the large pyramidal and spindle cells of layer V and the large pyramidal cells of III b and c.

Between the sixth and fifteenth month there has been an increase in size and structural compactness in the dendrites and axons. The number of terminal branches in layer I has increased and many other special features which characterize the transition from the globular cells of the immature cortex to the telodendronous forms of maturity have appeared. These alterations are too numerous and specialized to be mentioned here and form a considerable portion of the material of the book.

In all cortical areas myelination is present in the 15 month infant and can be observed in small and intermediate sized as well as large fibers. Myelination does not extend to the very ends of the fibers but extends farther in the 15 month than in 6 month brain. In the frontal lobe area FA gamma exhibits the largest, most numerous and most darkly stained fibers. The band region myelination is most pronounced in accordance with the following sequence of regions: hand, trunk, head, lower extremity.

Cone devotes little time or space to speculation. His monograph is a straight descriptive anatomical account which will doubtless be widely employed by present and future.
ANNOUNCEMENTS

The next Annual Meeting of the American Association of Neuropathologists will be held at the Hotel Claridge in Atlantic City, N. J. on Sunday, June 17th, 1956 beginning at 9 A.M.

The program will include a special Symposium on the very important and timely subject "Radiation."

The Annual Meeting of the American Neurological Association will begin on June 18th, 1956 at 9 A.M. at the Hotel Claridge in Atlantic City, N. J.