delayed response tests within the capacity of normal rats. On the other hand, the irreversible cerebral changes in many human cretins may be due not so much to thyroid deficiency as to the coincidence of some other congenital defect⁹. A more detailed experimental study of the effect of replacement therapy in the cretinous rat should reveal the relative importance of genetic and endocrine influence on cerebral maturation.

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Formation of Neurofibrils in the Brain of a Human Foetus 28 Weeks Old

FROZEN sections of formalin-fixed tissue of a human foetus 28 weeks old were impregnated with silver, using Bielschowsky's technique to show neurofibrils, and stained by other methods. Detailed histological findings will be published later.

Very fine and coarser fibrils were numerous in the deepest one-third of the cerebral cortex bordering the central fissure; elsewhere in the cerebral cortex there were a few coarse fibrils. Fine and coarser fibrils were present also in the cerebral white matter and in subcortical centres. Where the production of fine fibrils had occurred in the cortex, nuclei were relatively large, widely spaced and possessed a more mature nucleolar structure than was seen elsewhere in the cortex (Fig. 1). Except in occasional instances deep in the postcentral cortex, perinuclear cytoplasm was not seen either in silver preparations or after staining with azur A at pH 4. The globus pallidus also contained numerous fine fibrils, lying outside nerve cells in the cytoplasm of which neither Nissl substance nor

Fig. 1. Cerebral cortex treated by Bielschowsky neurofibril method. ($\times 1,000$)

Fig. 2. Globus pallidus, same method. ($\times 1000$)

neurofibrils were demonstrable (Fig. 2). The latter structures, although not Nissl substance, were seen in the same preparation within occasional nerve cells in the external reticular nucleus of the thalamus. There was no demonstrable continuity between intra- and extracytoplasmic fibrils.

Extracytoplasmic fibrils were thus already present in large numbers. Centres from which afferent fibres might have originated (to cortex, lateral part of thalamus; to globus pallidus, putamen and thalamus) were, on the other hand, markedly immature. For these reasons the possibility of more than a very few of the observed extracytoplasmic fibrils being axonal terminals could not be entertained.

The histological differentiation of neurones is thought to correspond to the onset of nucleoprotein synthesis by the maturing cells¹. Fibrillogenesis in the central nervous system may therefore be the precipitation of a fibrous protein within an intercellular substance such as exists in membranous connective tissue², elaborated in this instance by developing nerve cells. Ultra-microscopic appearances suggest the presence of a similar ground substance in the adult mouse cerebral cortex³.

The fibres which have been described probably serve as a framework for subsequent neuronal development in the growing brain. Chemical changes attending their production are not known. A study of the metabolic aspects of their origin might form a link between observed histological phenomena and protein synthesis.

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Neurohaemal Organs in Crustaceans

A NUMBER of structures of nervous origin in the higher Crustacea have recently been described under a variety of names, although they show a unity of structure and possibly of function. We wish to propose, tentatively, a common name to denote organs of this type in crustaceans, in order to avoid a needless multiplicity of names for organs which have many features in common. The organs are: the sinus gland of the eyestalk^{1,2}; part of the pars