

sections are washed in water, dehydrated, cleared in oil of cloves and mounted in balsam. The preparations show that in the parts in which organic iron is present phosphorus occurs, and that a fainter reaction for phosphorus obtains in the spongoplasm.

Held³¹ found the Nissl granules are not digested in pepsin and hydrochloric acid solutions. This is correct, but the oxyphile nuclear substance also digests and the nucleolus under certain circumstances disappears. This is an important fact and is the chief objection to calling the oxyphile nuclear substance oxychromatin, for chromatin is always considered to be indigestible. Held's figures seem to show that he obtained the same result on digestion. No mention is made of this in his text, but in the description of the cells given under his plate he adds, "Nucleolus und ein Theil der Kernmasse noch nicht verdaut," thus indicating that he considered it an ordinary circumstance for nuclear parts to digest.

The oxyphile nuclear substance digests very readily indeed, but it is doubtful if the disappearance of the nucleolus is really due to the digestion of its substance. I shall show later that the nucleolus has an oxyphile centre and it is probable that this centre would digest, thus liberating the whole nucleolus, if it were attached to the slide only by its centre. If on the other hand, the nucleolus is attached by its periphery it will not be removed. Sometimes the nucleolus, after digestion, appears as a shell. The nucleolus is also very loosely attached to the nuclear network, a feature to which v. Lenhossek³² has called attention and which will afterwards be discussed. After digestion the deepest iron-alum stain of Heidenhain or any other stain, will not show a reticulum in the nucleus, consequently there would be nothing to hold the nucleolus in its place in material digested in bulk. Considering everything, it is probable that the peripheral or basophile portion of the nucleolus is never digested. It is not the weak acid that affects the oxyphile nuclear substance, for one may leave loose sections in weak (0.2 per cent.) hydrochloric acid for days at 37° C. and yet the nucleus will contain oxyphile substance.

In the digestion experiments fresh material was sometimes first submitted to digestion and then hardened and imbedded, but generally the tissue had been fixed in alcohol beforehand. The material employed was in the form of sections attached to the cover glass or in thin pieces which were afterwards dehydrated and then imbedded.

³¹ Held, Arch. f. Anat. u. Phys., Anat. Abth., 1895, p. 396.

³² v. Lenhossek, M., Arch. f. Psych., XXIX, p. 373.