U.D.K. 612.08(091)

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FROM THE HISTORY OF TECHNOLOGY OF MICROSCOPY IN THE XIX CENTURY

Summary

The history of the creation and application of various techniques of research of biological objects, the invention of the dyes, used in the manufacture of preparations in the microscopy are observed in the article.

The methods of immersion into fluid for study objects under the microscope in the early nineteenth century were unsatisfactory. Only in the 60's of the XIX century more rational methods of immersing the object in a liquid medium began to be used. Originally used solemn. Then glycerol was and different mixtures were: a glycerin with gelatin, glycerin with gum arabic, clove oil, creosote, and others. These substances give indisputable advantage over the water and in the 60 years of the nineteenth century were widely used.

Also the improvement of methods of fixation is explained. The term "fixation" and its related concepts came into use only in the early 80's of the XIX century.

Up to 80 years of the nineteenth century the histology enriched considerable arsenal of clamps, preserving the structure of tissues; study of tissue of freshly made products faded into the secondary plan; replenished list of reagents used for histological fixation; an increasing number of proposals for fixing the composition

of liquids and mixtures, of which only a small number has firmly established in the microscopic practice.

The fabrication of thin sections from the manual to the design of a special device for obtaining thin sections – microtomes are described. A microtome beginning to find widespread use until the end of the nineteenth century. It completely replaced production cuts by hand.

The use of painting sections made it possible to better study the preparations under the microscope. Originally carmine became the most widespread dye that used in everyday microscope practice. Hematoxylin staining method with iron alum mordant had particular importance. In the 60 years of the nineteenth century aniline dyes became used for coloring microscopic preparations. They had found wide application in the 70–80's years of the nineteenth century.

Microscopy as a research method has been recognized only in the nineteenth century. The forerunner of this was the creation of the cell theory, since it defined interest in the microscopic observations. The microscope has become a widespread tool for the biologist and has made a lot new and specific to biology, and thanks to it special sections of the life sciences – cytology and histology have created.