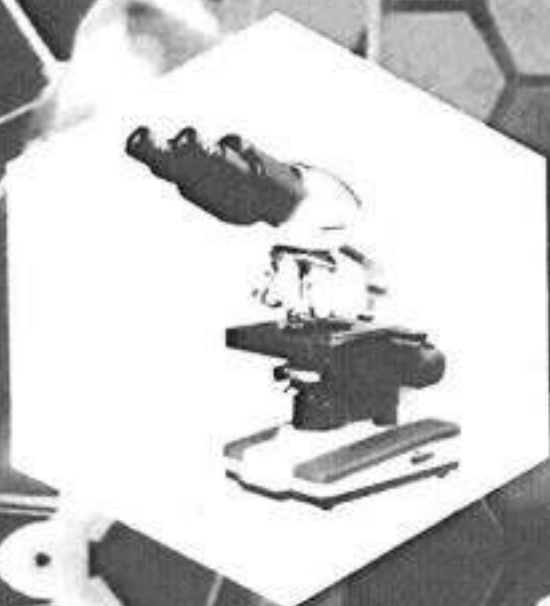


# Methods and Tools in Biosciences



**Editors**  
**Dr. Anita Gajraj**  
**Dr. Reema Srivastava**

*Seema*  
**Principal**

**Kanoria PG Mahila Mahavidyalaya**  
**JALPUR**



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Email: card\_rajasthan@yahoo.com

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*Seenu*  
Principal  
Kanoria PG Mahavidyalaya  
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*Seenu*  
Principal  
Kanhoria PG Mahila Mahavidyalaya  
JAIPUR

# Micrometry : A Technique to Measure the Dimensions of Microscopic Structures

Anita Gajraj\* and Ratna Saxena

Department of Zoology, Kanoria PG Mahila Mahavidyalay, J.L.N. Marg, Jaipur

\*Corresponding author : Dr. Anita Gajraj (Assistant Professor, Department of Zoology, Kanoria PG Mahila Mahavidyalay, J.L.N. Marg, Jaipur) ; Email : anita\_gajraj@yahoo.co.in

## Abstract

Micrometry, the measurement of cells/things seen through a microscope, is important for investigators across a number of disciplines. It is important to know the size of cells/things being viewed and investigated so comparisons can be made. Biologists, geologists and a number of others in diverse areas that use microscopy as a tool have to be able to assess dimensions of, say, microorganisms or crystal inclusions. The present article is an attempt to provide sufficient information on micrometry as an easy and informative read. It will be beneficial for those researchers who are willing to study histological observations.

**Keywords :** Micrometry, stage micrometer, ocular micrometer, calibration

## 1. Introduction

Micrometry is the science in which we have some measurement of the dimensions of an object being observed under the microscope. The method employs some special types of measuring devices which are so oriented that these can well be attached to or put into the microscope and observed (Lewin, 1965). The first reported measurements performed with an optical microscope were undertaken in the late 1600s by the Dutch scientist Antonie van Leeuwenhoek, who used fine grains of sand as a gauge to determine the size of human erythrocytes (Matthew *et al.*, 1800) Since then, countless approaches have been employed for

measuring linear, area, and volume specimen dimensions with the microscope (a practice known as **micrometry** or **morphometrics**), and a wide variety of useful techniques have emerged over the past few hundred years.

All measurements of length are based on a comparison of the object under scrutiny with another of known dimensions, or with a standardized, calibrated scale (Quesnel, 1971). In order to determine the length or width of a wooden board, for example, a ruler or measuring tape is placed in contact with the board and the dimensions are noted by direct comparison to the graduated numerical markings on the ruler.

*Seema*  
Principal