

# **FATHER OF MICROBIOLOGY**

By

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**Thonius Philips van Leeuwenhoek**, is well known as **Antony van Leeuwenhoek**, and was born at Delft in Holland on 24 October 1632; this year is called by historians as Siege of Maestricht. He died in his native town on 26 August 1723.

**Baptized certificate of Antony Van Leeuwenhoek**

*Volgt de Maent November 1632*  
4. dito. 1. kind Thonis, vader Philips thonis zn, moeder Grietge Jacobs, getuigen Thonis philips zn, Huijch thonis zn, Magdalena, en Catharina Jacobs d'.

REGISTRATION OF LEEUWENHOEK'S BAPTISM  
(New Church, Delft : 4 November 1632). The entry reads :

VOLCHT DE MAENT NOVEMBER. 1632

4. dito. 1. kind Thonis, vader Philips thonis zn, moeder Grietge Jacobs, getuigen Thonis philips zn, Huijch thonis zn, Magdalena, en Catharina Jacobs d'.

[Translation] Followeth the Month of November, 1632

4th ditto. 1 child Tony; father Phillip, son of Anthony; mother Maggie, James's daughter. Witnesses: Tony Phillip's son [L's paternal grandfather], Hugh Tony's son [L's paternal uncle], Madeleine and Catherine daughters of James [L's maternal aunts].



## Career

In 1671 he began his scientific career by assembling magnifying glass and simple microscope. Leeuwenhoek worked as a draper, where he used magnifying glass to see quality of fabrics.

## Microscope

He grinded the lenses of high magnification as 300X and observed the rain water, tooth decay, etc. under it and opened the doors of Microbial Science. He is called as **inventor of microscope**.

## Observations

Leeuwenhoek did observations on bile of cow, clove water, ginger water, nutmeg water, pepper water, protozoa, rain water, river water, sea water, vinegar, and well water.

## Animacules and Drawing

He was first of all to discover, bacteria in June 10, 1675 and he named them as little '**animalcules**' and for the first time made the authentic drawings of microorganisms (protozoa, bacteria, fungi).



## The Shape and Size of Red Blood Cells

In 1674 Leeuwenhoek examined red blood cells, which had been discovered six years earlier by his fellow Dutchman, Jan Swammerdam. With his superior lens, Leeuwenhoek was able to give a clearer description of the cells than ever before and was the first person to accurately determine their size.

## Spermatozoa

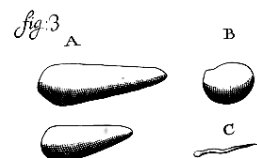
In 1677 Leeuwenhoek discovered spermatozoa, later concluding that eggs are fertilized when entered by sperm.

## Lymphatic Capillaries

In 1683 Leeuwenhoek discovered the lymphatic capillaries, which contained "a white fluid, like milk."

## Protozoa

On 16 July 1683 he gave the pictures of protozoa present in frogs' intestine.



LEEUEWENHOEK'S PICTURES OF THE INTESTINAL PROTOZOA OF FROGS  
From the engravings in the Dutch edition of *Letter 38* (16 July 1683). × 11.  
Fig. A, *Ophelia* (*Copepod*) *diversifera*.  
Fig. B, *Stentor* *coeruleus*.  
Fig. C, a larval *nauplius*.

## Letters:

He wrote 560 of these letters to the Royal Society of London, which was translated from Dutch to English.

## Chronology of Leeuwenhoek's letters to Royal Society

Letter No.	Addressed to	Date	Royal Society Letter No.	Published in Phil. Tr
1	H. Oldenburg	28 April 1673	No.	Vol. VIII, No. 94, pp. 6037-6038, 1673.
2	H. Oldenburg	15 Aug 1673	L.1.1	Vol.IX.No.102, pp21-23 and 23-25, 1674
3	H. Oldenburg	7 April 1674	L.1.2	Vol.IX No. 102, pp 23-25, 1674
3a	H. Oldenburg	16 April 1674	L.1.3	Unpublished
4	H. Oldenburg	1 June 1674	L.1.4	Vol.IX.No.106 pp.121-128, 1674
5	H. Oldenburg	6 July 1674	L.1.5	Vol.IX.No.106 pp.126-131, 1674
6	H. Oldenburg	7 Sept. 1674	L.1.7	Vol.IX.No. 108 pp.178-182
6a	H. Oldenburg	7 Sept. 1674	L.1.6	Unpublished
7	H. Oldenburg	18 Oct. 1674	L.1.8	Unpublished
8	H. Oldenburg	4 Dec. 1674	L.1.9	Vol.X.No.117 pp.378-380, 1675
9	H. Oldenburg	22 Jan. 1675	L.1.10	Unpublished
10	H. Oldenburg	11 Feb. 1675	L.1.11	Unpublished
11	H. Oldenburg	26 Mar. 1675	L.1.13	Unpublished
12	H. Oldenburg	14 Aug. 1675	L.1.14	Vol.X.No.117 pp.380-385, 1675
13	H. Oldenburg	20 Dec. 1675	L.1.16	Unpublished
13a	H. Oldenburg	22 Jan. 1676	L.1.16a	Unpublished
14	H. Oldenburg	22 Feb. 1676	L.1.17	Unpublished
15	H. Oldenburg	21 Apr. 1676	L.1.18	Vol.XI.No.127 pp.653-656, 1676
16	H. Oldenburg	20 May. 1676	L.1.20	Unpublished
17	R. Boyle	28 July 1676		Unpublished
18	H. Oldenburg	9 Oct. 1676	L.1.22	Vol.XII.No.133pp.821-831, 1677
18a	H. Oldenburg	30 Oct. 1676	L.1.24	Unpublished
19	H. Oldenburg	23 Mar. 1676	L.1.25	Vol.XII.No.134pp.844-846, 1677
20	H. Oldenburg	14 May 1677	L.1.27	Vol.XII.No.136pp.899-905, 1677
21	H. Oldenburg	5 Oct. 1677	L.1.29	Extract published in R. Hook lect. & Collect. 1679
21a	Viscount Brouncker	16 Oct. 1677	L.1.22	Unpublished
22	Viscount Brouncker	Nov. 1677	L.1.33	Vol.XII.No.142pp.1040-1043, 1679
23	R. Hook	14 Jan. 1678	L.1.33	Extract published in R. Hook lect. & Collect. 1679
24	N. Grew	18 Mar. 1678	L.1.34	Vol.XII.No.142pp.1044, 1679
25	N. Grew	31 May 1678	L.1.36	Vol.XII.No.140pp.1002-1005, 1678 Vol.XII.No.142pp. 1045, 1679
26	N. Grew	27 Sept. 1678	L.1.38	Unpublished
27	N. Grew	21 Feb. 1679		Unpublished

## References

1. C. Dobell (ed.), *Antony van Leeuwenhoek and his Little Animals Collected* (New York: Dover Publications, 1960)
2. B. J. Ford, *The Leeuwenhoek Legacy* (London and Bristol: Biopress and Farrand Press, 1991).