
Enheduanna

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May 9, 2021

To the true woman who possesses exceeding wisdom,
soothing and opening the mouth,
always consulting a tablet of lapis lazuli, giving advice to all lands,
the true woman, the holy potash plant, born of the stylus reed,
applies the measure to heaven and places the measuring-rope on the earth
to Nisaba be praise!

The text written above is a fragmentary part of a Sumerian hymn written over 4000 years ago. The author is the daughter of Sargon of Akkad - the of the founder of the Akkadian Empire in Mesopotamia (modern day Iraq). Often cited as the first recorded author and poet in history, her name was Enheduanna. She writes the poem to the Sumerian goddess of Wisdom, Nisaba, and discusses the roles of “the true woman”.

As a priestess, her roles would have been a mixture of religious and scientific. She would have indeed “measured the heavens”, i.e., made astronomical observations. The moon’s cycles, star charts and Venus’ transit were all vital for the creation of the calendar, timekeeping and mathematics in general. A vast amount of Mesopotamian astronomical tablets have been discovered - even a study on an event now known to be Halley’s comet. “Placing the measuring-rope



Figure 1: Enheduanna, in the centre of the disk with the lined skirt, on a circular tablet. On the left is a stepped structure, possibly her temple. On the back of the tablet is a prayer from Enheduanna to the moon god. *Source: <https://www.penn.museum/blog/museum/ur-digitization-project-item-of-the-month-june-2012>.*

on the earth” almost certainly consists of using pre-Grecian geometry to allocate land and build upon it. Throughout Mesopotamia, mathematics with a base of 60 was developed and many innovations appear in Sumerian and Akkadian texts. They had estimated $\sqrt{2}$, used Pythagorean triples, solved quadratics and cubics, and had a solid understanding of geometry and algebra (thousands of years before the Greeks). It is likely that Enheduanna would have been educated to undertake such mathematical tasks as she highlights.

Enheduanna was not alone; multiple learned Mesopotamian female scribes have been identified. Some named, some anonymous, these female scribes worked in a variety of appointments, such as the judiciary, religious (and hence astronomical and geometrical) and the maintenance and recording of stockpiles of supplies and subsequent taxes (i.e., accountancy and finance).

There is a precedence that female scientists and mathematicians are a relatively recent occurrence. This has been shown, however, to be false. There are numerous recordings in ancient history of women like Enheduanna. Hypatia is an excellent example. A Grecian mathematician based in Ptolemaic Egypt, she is unfortunately not remembered for her work but due to her death. Oft quoted as the “last pagan mathematician”, she was ripped apart by a Christian mob in the streets of Alexandria in 415AD. Another interesting example is that of Ancient Egypt; we have a written example of a female physician called Peseshet. Her description as “Head of Female Physicians” without doubt confirms that there must have been numerous female physicians during that time. We will never know how common female scientists were in ancient Egypt, Mesopotamia or other societies. It is not to say the ratio is high or low; scribes, scientists and mathematicians were oft anonymous, whether they be male or female. For example, we do not know whether the famed Pythagoras existed, or whether “he” was one person or a collaborative effort.

I, myself, work in an area of mathematics where the number of women is low. At times, I have felt uncomfortable at events such as talks and conferences as I feel like I stick out. I do very much admire many of my colleagues in my group, however I feel it important to be able to see someone more senior who you can relate to - someone who makes you think “they are an excellent academic and they look like me”. I came across Enheduanna one day while studying Akkadian. Although 4000 years apart, I immediately felt a strange connection with her. She was obviously paramount to the development of the Akkadian Empire. She was an excellent poet and leader of a temple whose role it was to understand their known universe - her writings implore me to be the best mathematician I can be.

It is unclear on who Enheduanna meant by the “true woman”. Be it the goddess Nisaba, Enheduanna herself or a generalized term for all woman we cannot say - the Sumerian script is too vague. We can, however, be certain that for as long as there has been civilization, there have been women possessing exceeding wisdom, women who consult the academic tablets, and women who study both the skies and the earth.