

Chapter XX

מסכת ברכת פרק שלישי משנה ה

...אָבֵל לֹא יִתְכַסֶּה, לֹא בְּמֵי הַרְעִים וְלֹא בְּמֵי הַמְּשֻׁרָה...

"...But he may not cover himself, neither in foul water, nor in water in which flax soaked..."

What are **מי המשורה** (water in which flax soaked) and why would it be a problem to submerge in it while saying Shema?

Flax is the plant used to make a type of fabric called linen. Linen is light, strong, and flexible and has been used for making fine cloth for thousands of years. At the time of the Mishna, it was used for making **sails** for ships (Fig XX.1) and clothing (Fig XX.2). Today, linen is mostly used for tablecloths and bedding (Fig XX.3).

		
<p>Fig XX.1 <b>Mosaic</b> of a Roman warship showing the sails, which were most likely made of linen</p>	<p>Fig XX.2 Roman statue of a man dressed in a linen garment called a toga</p>	<p>Fig XX.3 A modern-day fine linen tablecloth, showing the weave</p>

	<p>The flax plant is shown in Fig XX.4. As you can see, the flax plant is long and straight with few branches. It can grow up to 1m (3 feet) tall.</p> <p>Flax is an annual plant, which means it only lives for one growing season and then the whole plant dies including the roots. New seeds need to be sown every year. From seed-planting, it is ready to be harvested in about a hundred days.</p>
<p>Fig XX.4.</p>	

Inside the flax plant are long, straight fibers that are used to make linen. They extend through the full length of the flax plant, so when flax is harvested, it is pulled up with its roots (Fig XX.5).



Fig XX.5.

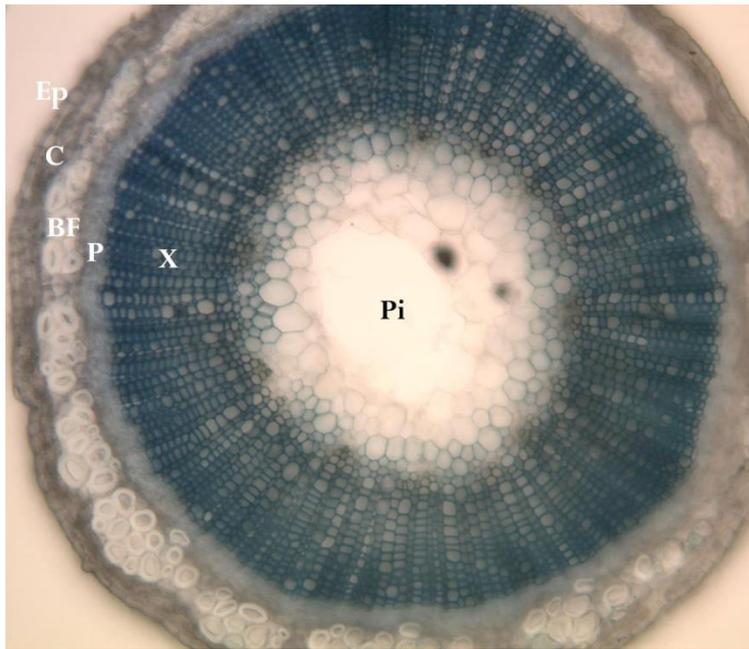


Fig XX.6

Fig XX.6 shows what a slice of a flax plant looks like when viewed under a microscope. The many small rings are cross-sections of tubes that travel the whole length of the plant. The thickest ring of small dark tubes, labeled with the "X", are the plant's **xylem**. The grey tubes around the xylem, marked with the "P" are the plant's **phloem**. You can think of the xylem and phloem as the plant's veins. Essentially all plants have these. The xylem absorb water and **minerals** from the ground, through the plant's roots. The xylem transport that water up to leaves and flowers. The phloem distribute the **nutrients** produced by the leaves back down and around the plant. The xylem and phloem perform their functions well, but they aren't strong, and cannot hold up the plant. The white tubes marked "BF" (for "bast fiber") serve that function. These fibers are designed to provide strength, so that it is able to stand straight, and flexibility, so it can bend in the wind without breaking. It is from these strong, flexible fibers that linen is made.

As you can probably tell from Fig XX.6, the fibers of the flax plant are all “glued” into the plant. Getting the fibers out to make linen takes some work. The first step is soaking the flax stalks in a pond for a few days. The water is absorbed through all the layers in the stalk, and especially into the xylem, which as mentioned above, are water-absorbing specialists. The xylem expand from all the water, until they break open, which breaks apart the whole stalk.

Figure Fig XX.7 shows modern day workers placing bundles of flax under black pipes to hold them down beneath the water, so they will absorb water till they burst.



Fig XX.7

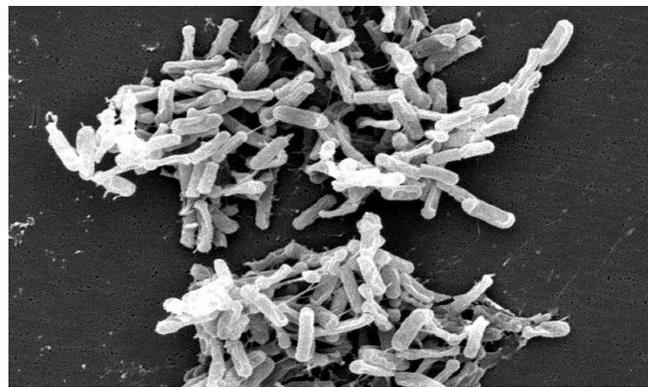


Fig XX.8

Now comes the smelly part! **Bacteria** that are always found in pond water can now get to the “glue” surrounding the fibers, which they eat as food. As the bacteria **digest** this glue, they release two foul **gases** – butyric acid (the smell of rancid butter) and hydrogen sulfide (the smell of rotten eggs).

Fig XX.8 shows a picture of clumps of the bacteria as viewed with a microscope. They are so small that you could line up 20 of these bacteria end to end across the width of one of your hairs!

After a few more days of decomposing in the pond, the flax stalks are removed and left in the sun to dry. The drying process may take a few weeks, but when it is done, the flax fibers are ready to be combed to remove all the bits of the plant still stuck to the fibers (Fig XX.9).

Once combed, the longer fibers are separated and ultimately woven into linen cloth.



Fig XX.9

So now we know why *מי המִשְׁרָה* (water in which flax soaked) stinks: smelly gases are released by bacteria as they eat the glue that holds the flax fibers together, transforming the pond water in which they had soaked into a reeking pool. The Torah (*Devarim 23:14-16; Berachos 25a*) requires one’s personal **environment** to be free from filth such as excrement and other foul-smelling rotting organic matter, in order to participate in sanctified activities (*devarim she’b’kedushah*). Since reciting Shema, like learning Torah and praying, are such sanctified activities, it is forbidden to recite Shema in the presence of *מי המִשְׁרָה* .

Sources:

<http://www.reshafim.org.il/ad/egypt/timelines/topics/flax.htm>

[https://en.wikipedia.org/wiki/Clothing\\_in\\_the\\_ancient\\_world](https://en.wikipedia.org/wiki/Clothing_in_the_ancient_world)

<https://www.decktowel.com/pages/how-linen-is-made-from-flax-to-fabric>

[https://en.wikipedia.org/wiki/Bast\\_fibre](https://en.wikipedia.org/wiki/Bast_fibre)

<https://en.wikipedia.org/wiki/Retting>

<https://en.wikipedia.org/wiki/Clostridium>

[https://www.researchgate.net/publication/260112688\\_Combined\\_Treatment\\_of\\_Retting\\_Flax\\_Wastewater\\_using\\_Fenton\\_Oxidation\\_and\\_Granular\\_Activated\\_Carbon](https://www.researchgate.net/publication/260112688_Combined_Treatment_of_Retting_Flax_Wastewater_using_Fenton_Oxidation_and_Granular_Activated_Carbon)

Pictures

<https://en.wikipedia.org/wiki/Trireme#/media/File:Romtrireme.jpg>

[https://en.wikipedia.org/wiki/Clothing\\_in\\_the\\_ancient\\_world#/media/File:Delos\\_House\\_of\\_Cleopatra.jpg](https://en.wikipedia.org/wiki/Clothing_in_the_ancient_world#/media/File:Delos_House_of_Cleopatra.jpg)

<https://sep.yimg.com/ay/italianfinelinens/perugia-linen-tablecloth-3.gif>