Kellicottia longispina Kellicott, 1879

Most likely ID: n.a.

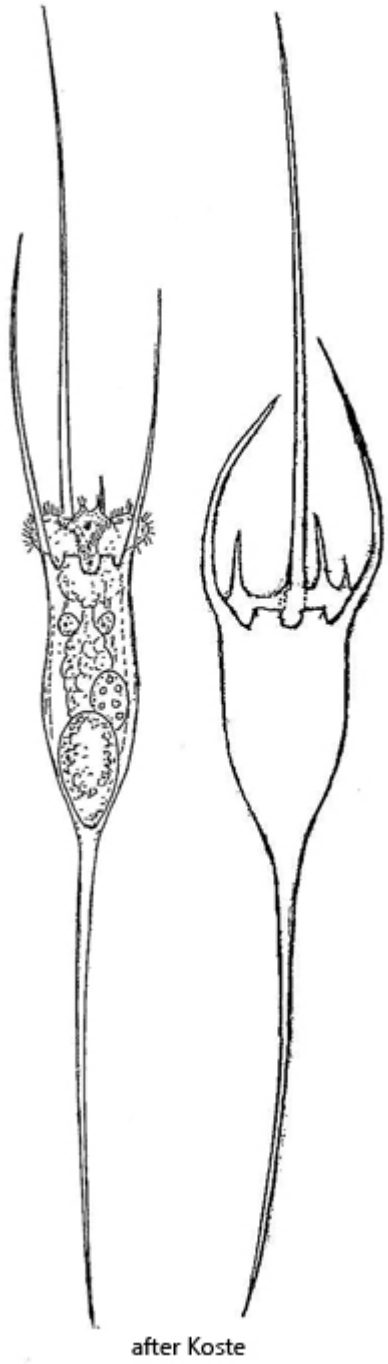
Synonym: n.a.

Sampling location: Lake Constance

Phylogenetic tree: *Kellicottia longispina*

Diagnosis:

- body slenderly concial, dorso-laterally flattened
- anterior 2 long ventral spine, one long dorsal spine
- anterior 3 short spine
- anterior spines with a serrated structure
- the ventral anterior margin with two flexible protrusions
- posterior one long spine
- length up to 690 µm (inclusive spines)
- three-lobed corona (“Euchlanis-type”)
- one dorsal eyespot
- vitellarium with 8 nuclei
- the species is psychrophile (prefer cold temperatures)
- planktonic lifestyle



Kellicottia longispina

I find *Kellicottia longispina* exclusively in the plankton of Lake Constance. The species is psychrophilic, meaning it prefers cold temperatures. The optimal temperature for *Kellicottia longispina* is 15 °C. At higher temperatures, the specimens sink into deeper water layers.

Kellicottia longispina is easy to recognize by its typical body shape with long spines. On the anterior margine of the lorica, there are 6 spines. Of these, 2 on the ventral side and one on the dorsal side are particularly long. Between these long spines are 3 other, significantly smaller spines. All spines on the anterior margin have a

serrated structure. At the posterior end, there is another long spine, which, however, is smooth. The body itself is conically shaped and resembles an ice cream cone. The long spines serve as protection against predation. In many rotifers, there is a correlation between the presence of predators (e.g., *Asplanchna* spec.) and the length of the spines. This correlation has not yet been demonstrated for *Kellicottia longispina*. Instead, it has been found that the spines lengthen as the water temperature decreases (Edmondson, 1952, unpublished).

The corona of *Kellicottia longispina* is trilobed, which, however, is difficult to recognize in free-swimming specimens. According to Koste (1978), the diet consists mainly of small phytoflagellates such as *Mallomonas* and *Dinobryon*. In larger bodies of water, the species can be found throughout the year. In smaller bodies of water, mainly in spring.

The lorica of *Kellicottia longispina* is described by Koste (1978) as smooth and without structure. In my population, however, I was able to observe a delicate longitudinal striation on the dorsal side (s. fig. 4).

Kellicottia longispina can easily be confused with the similar species *Kellicottia bostoniensis*. However, this species has only 4 spines at the apical margin and, with a total length of about 360-380 µm, is also significantly smaller.

More images and information on *Kellicottia longispina*: Michael Plewka-Freshwater life-*Kellicottia longispina*


Kellicottia longispina
Obj. 40 X
AE
© Martin Kreutz

Fig. 1: *Kellicottia longispina*. L = 560 µm. A freely swimming specimen with an amictic egg (AE). Obj. 40 X.


Kellicottia longistina
Obj. 40 X
© Martin Kreutz
a
AE
b

Fig. 2 a-b: *Kellicottia longispina*. L = 560 µm. Two focal planes from ventral of the same specimen as shown in fig. 1. AE = amictic egg. Obj. 40 X.


Kellicottia longispina
Obj. 40 X
© Martin Kreutz

Fig. 3: *Kellicottia longispina*. L = 670 µm. A slightly squashed specimen from ventral. Obj. 40 X.

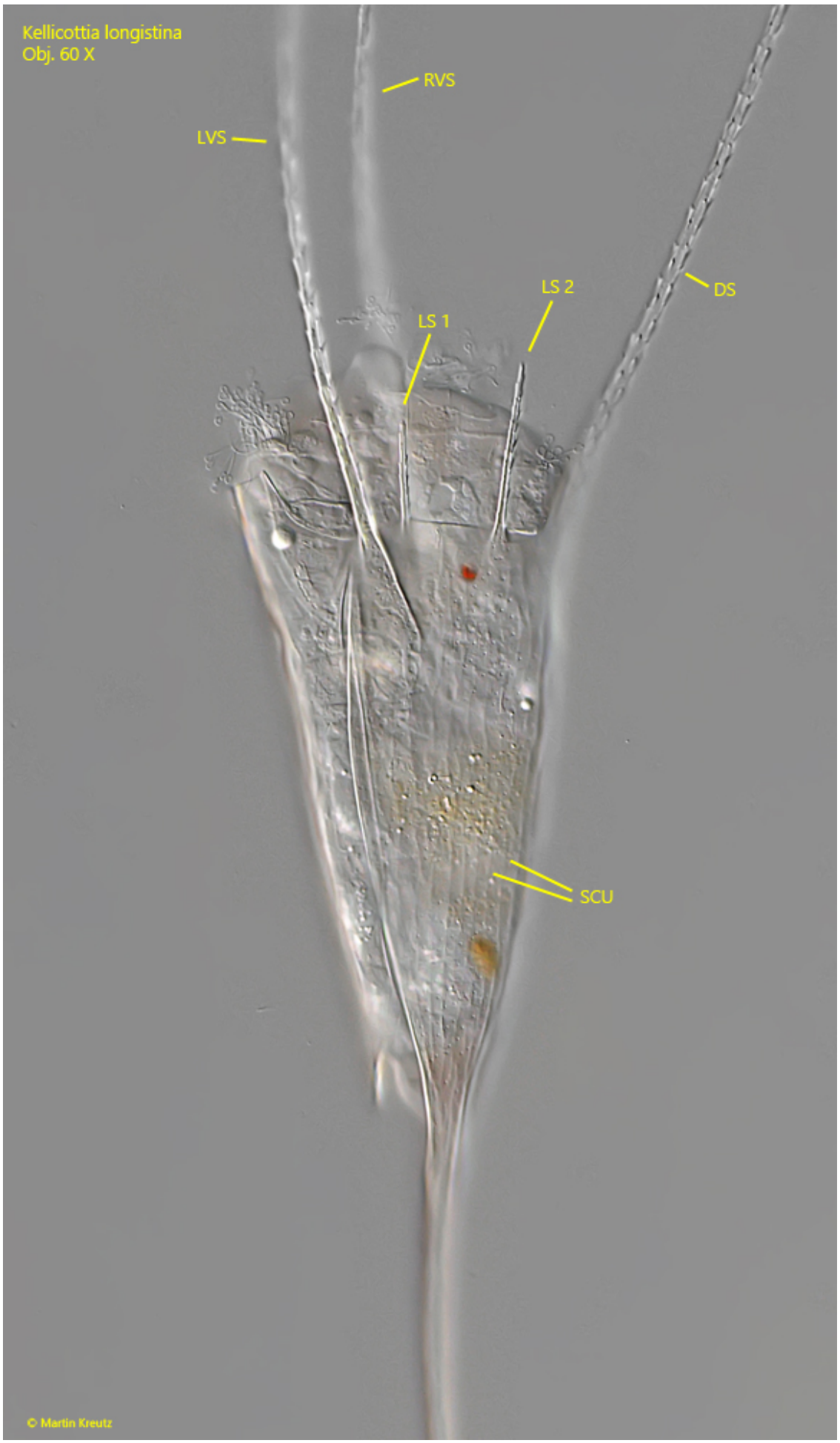

Kellicottia longistina
Obj. 60 X
RVS
LVS
LS 2
DS
LS 1
SCU
© Martin Kreutz

Fig. 4: *Kellicottia longispina*. A slightly squashed specimen from left. Note the slight longitudinal striation of the dorsal part of the cuticle. DS = dorsal spine, LS 1 + 2 = lateral secondary spines, LVS = left ventral spine, RVS = right ventral spine, SCU = striation of the cuticle. Obj. 60 X.

Fig. 5: *Kellicottia longispina*. A slightly squashed specimen from left. One of the two ventral projections (VP) of the anterior margin is visible. LVS = left ventral spine.

Obj. 60 X.

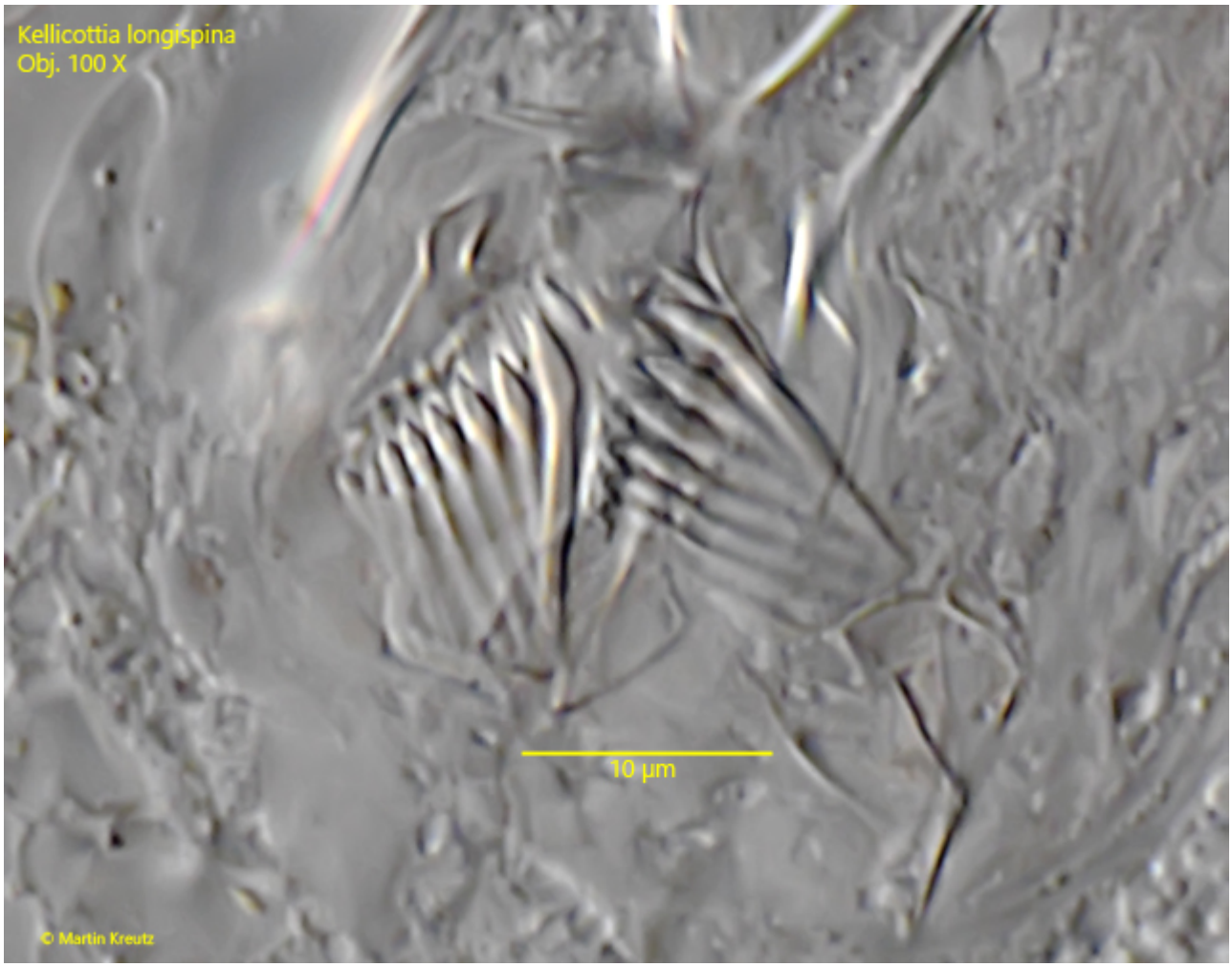


Fig. 6: *Kellicottia longispina*. The trophi in a strongly squashed specimen. Obj. 100 X.