

Der Krakenciliat *Teuthophrys trisulca*

Beitrag von Holger Weis

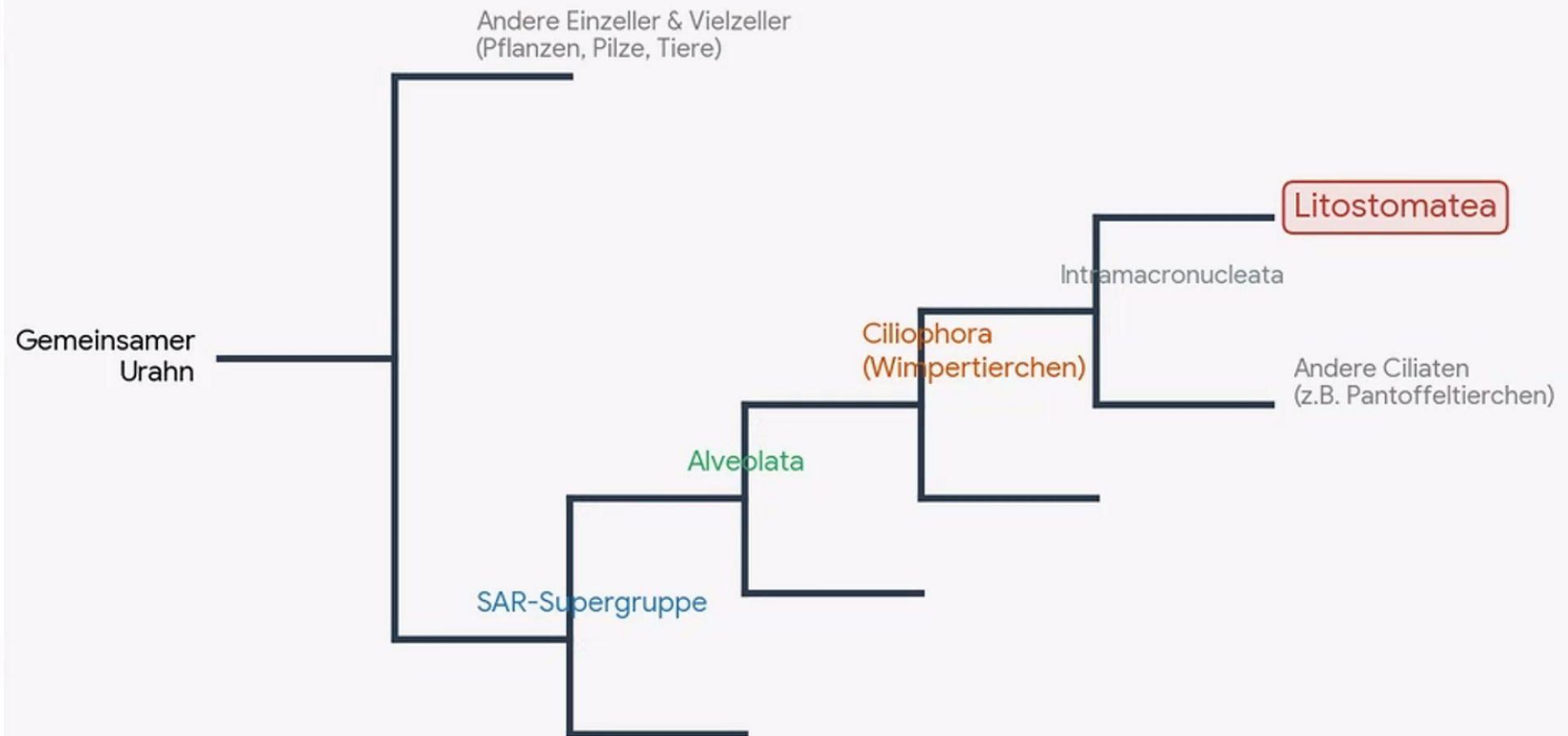
beim Tübinger Mikroskopischen Stammtisch
am 13. September 2026

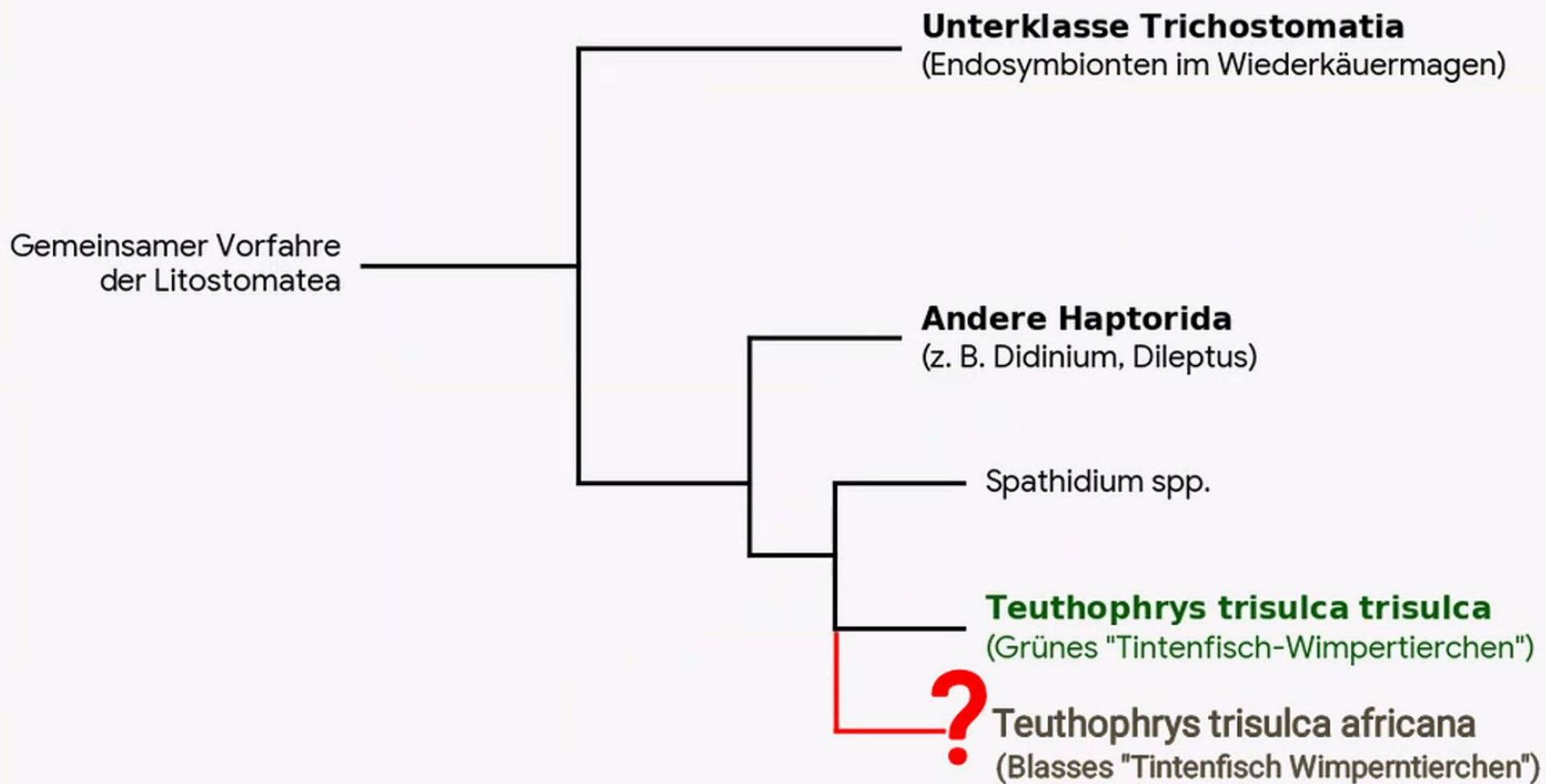


Triradialsymmetrie



Phylogenetischer Weg von den Einzellern zu den Litostomatea





**Exemplar
ohne
Zoochlorellen**

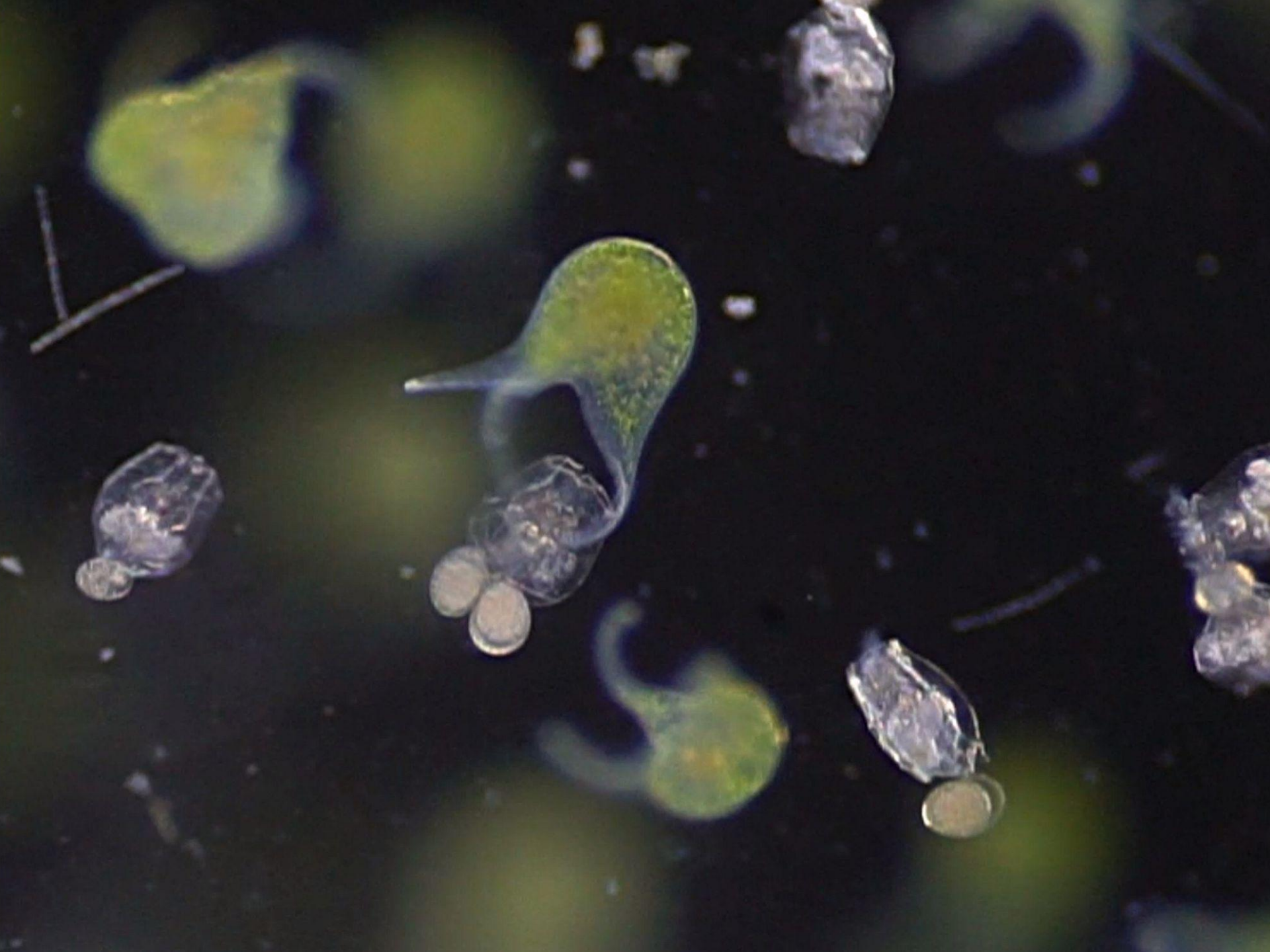




Rotatoria

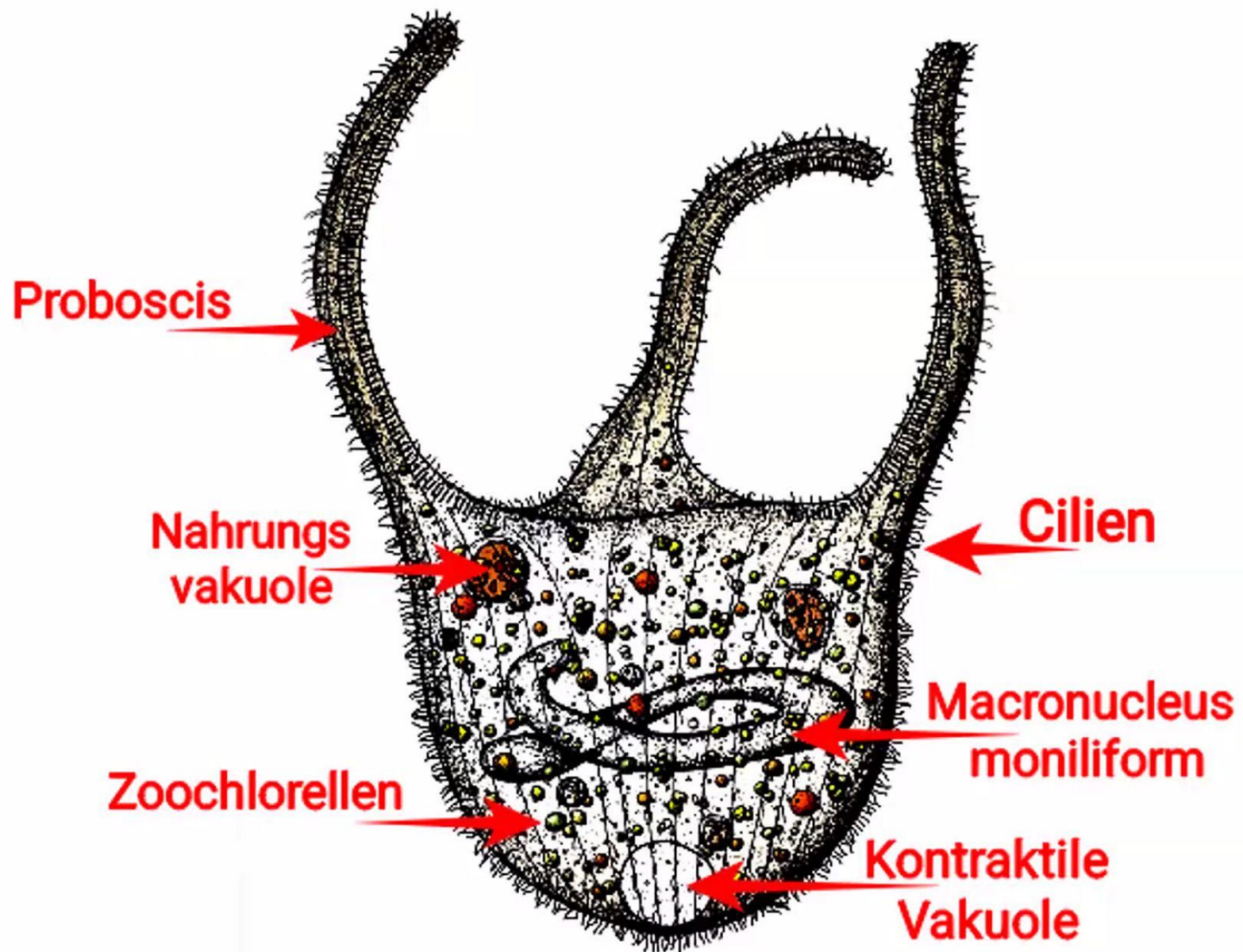


Zoochlorellen

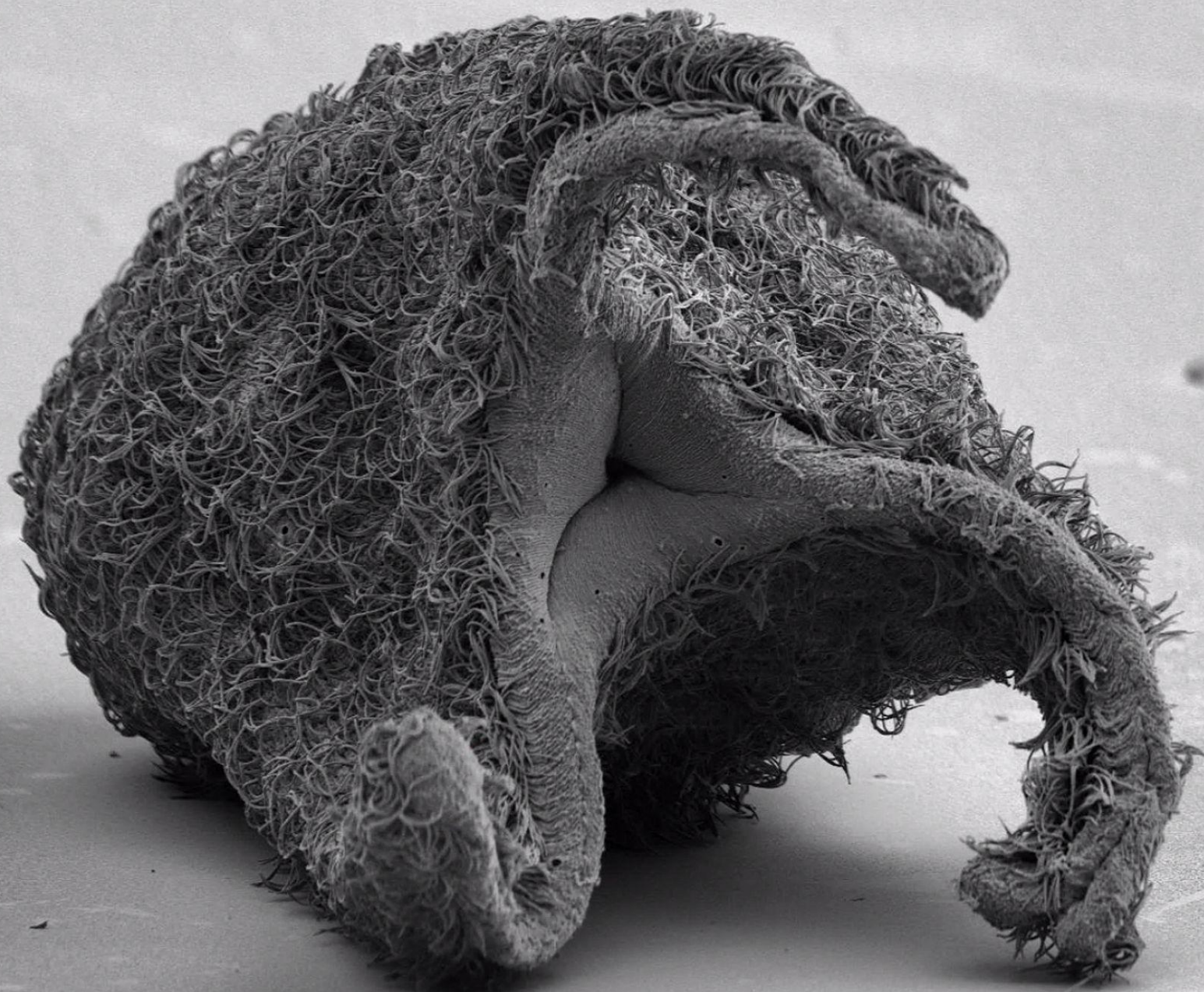




(Aufnahme: Sebastian Hess)



Teuthophrys trisulca
Spathidiidae

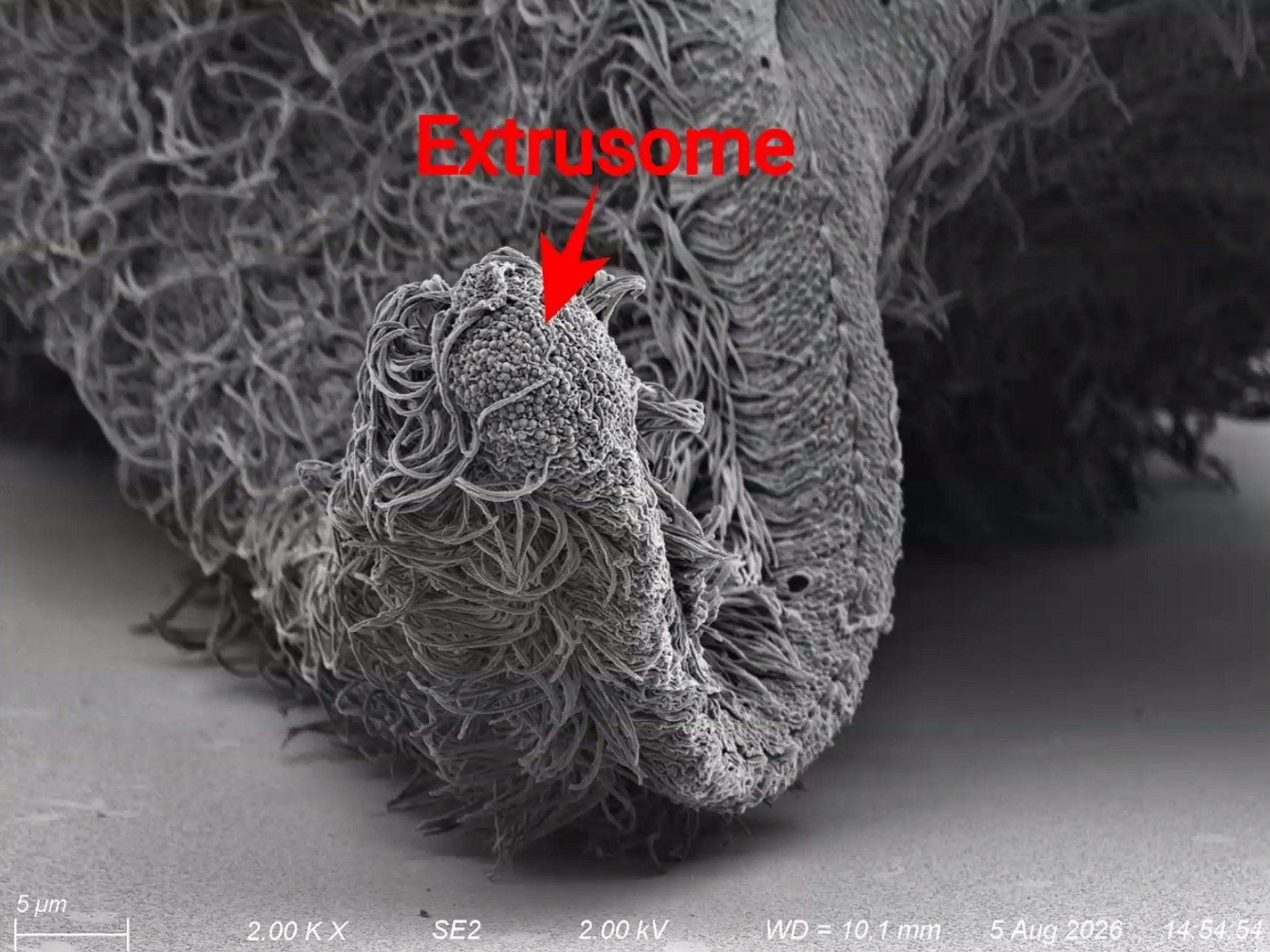


ufnahme: René van Wezel)



Extrusome

Extrusome



5 μ m

2.00 K X

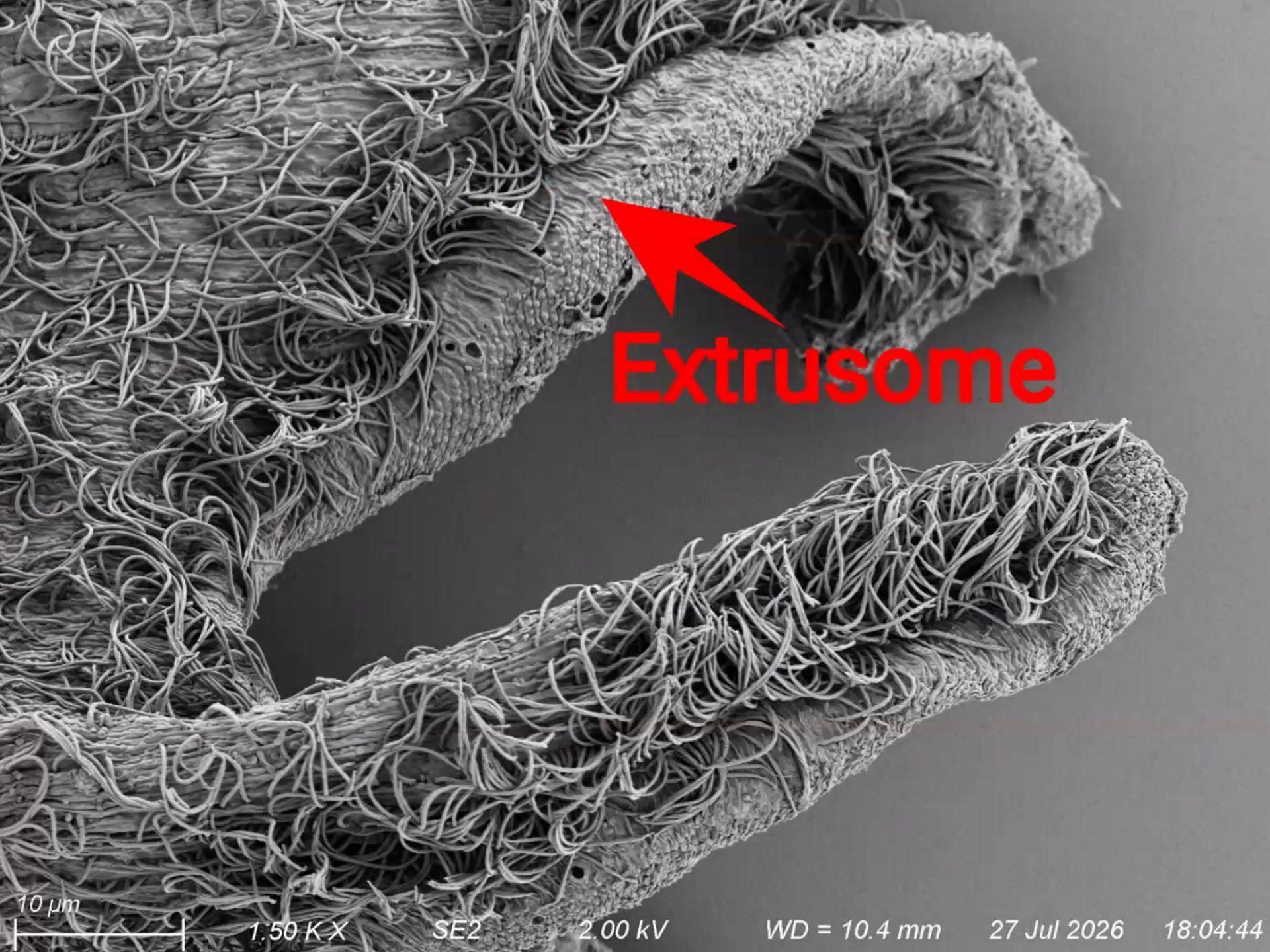
SE2

2.00 kV

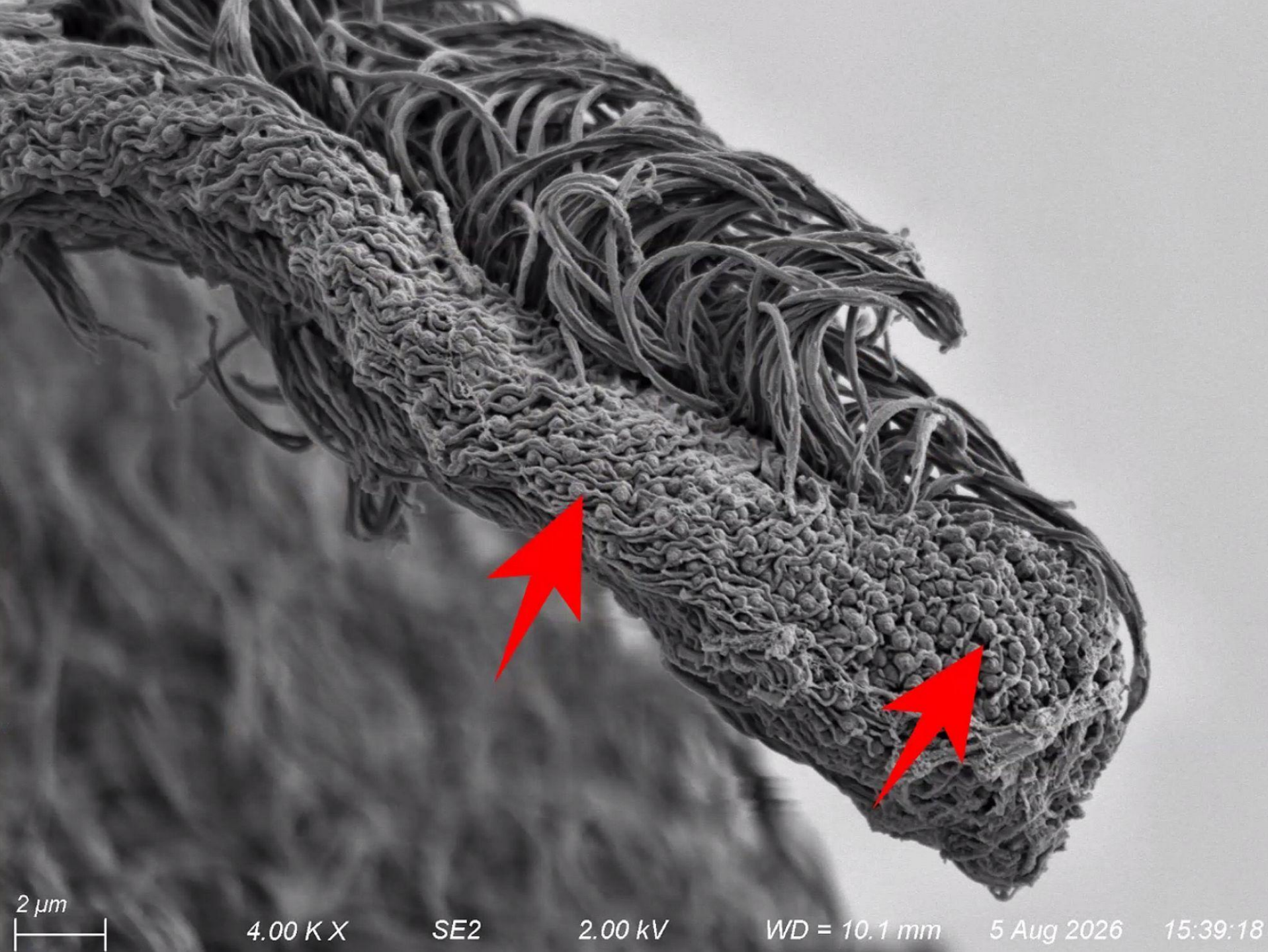
WD = 10.1 mm

5 Aug 2026

14:54:54

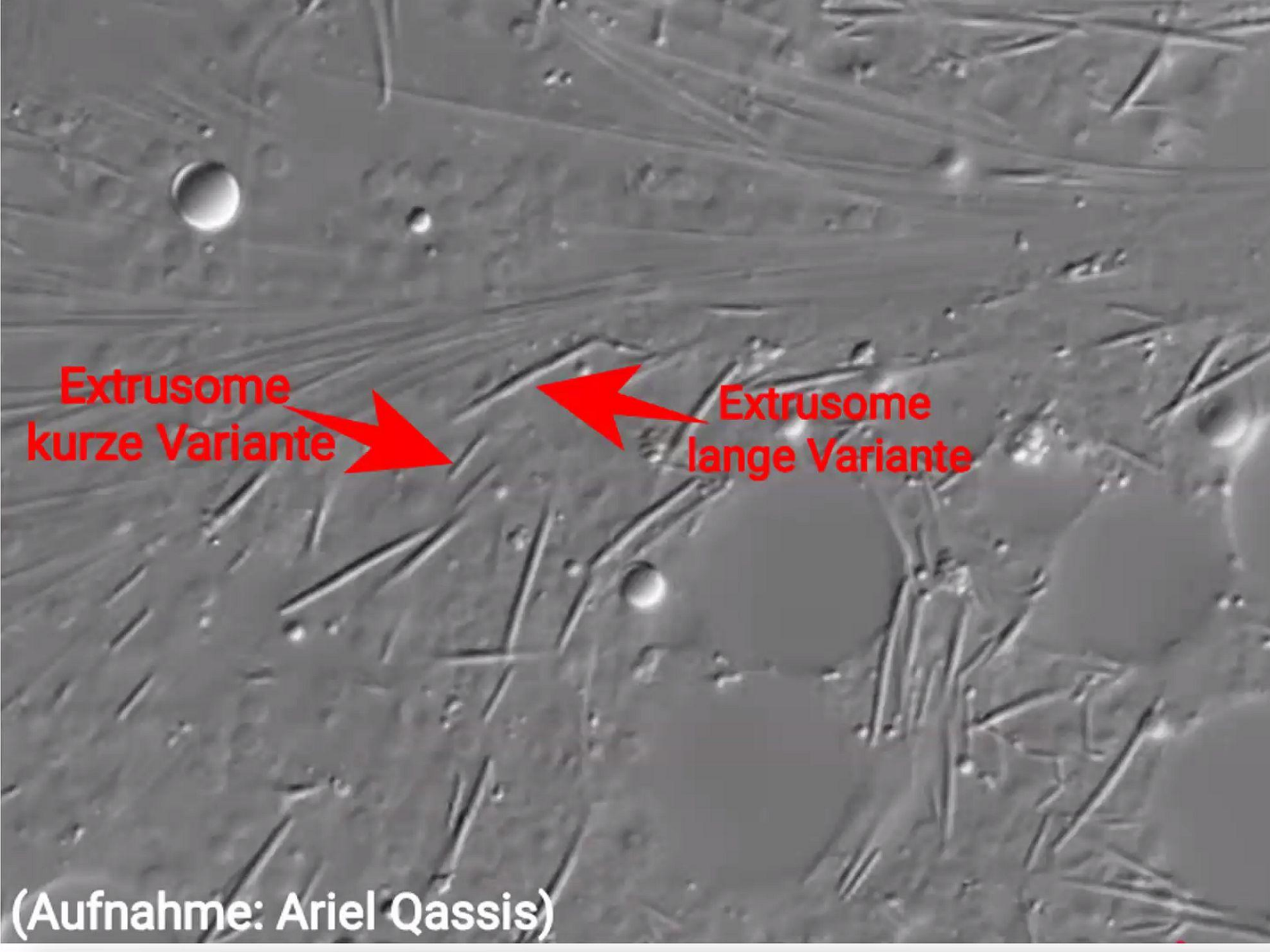


Extrusome





(Foto: Michael Butkay)



Extrusome
kurze Variante

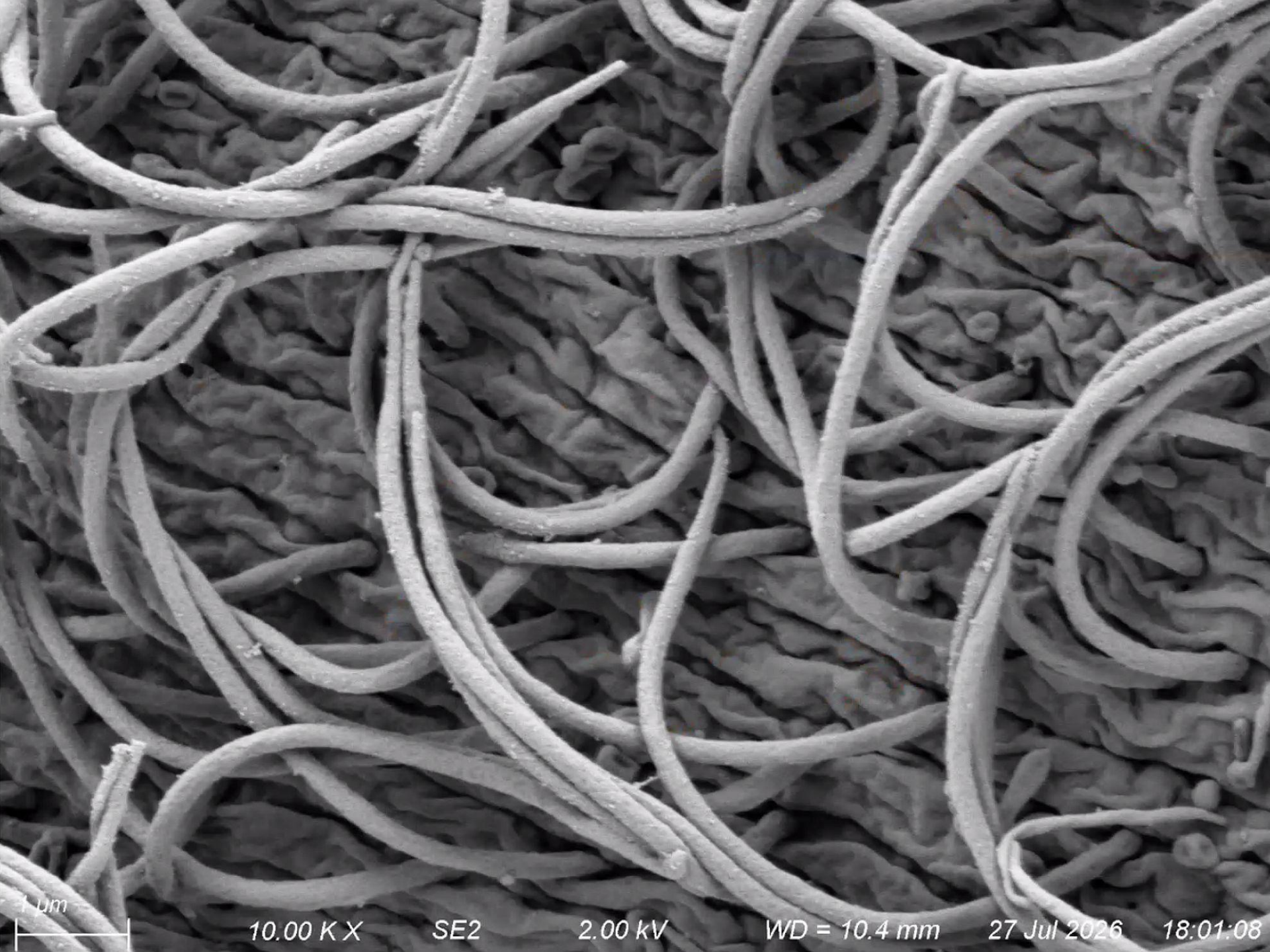
Extrusome
lange Variante

(Aufnahme: Ariel Qassis)

"Entladene" Extrusome

30 μ

(Foto: Ariel Qassis)



1 μm

10.00 K X

SE2

2.00 kV

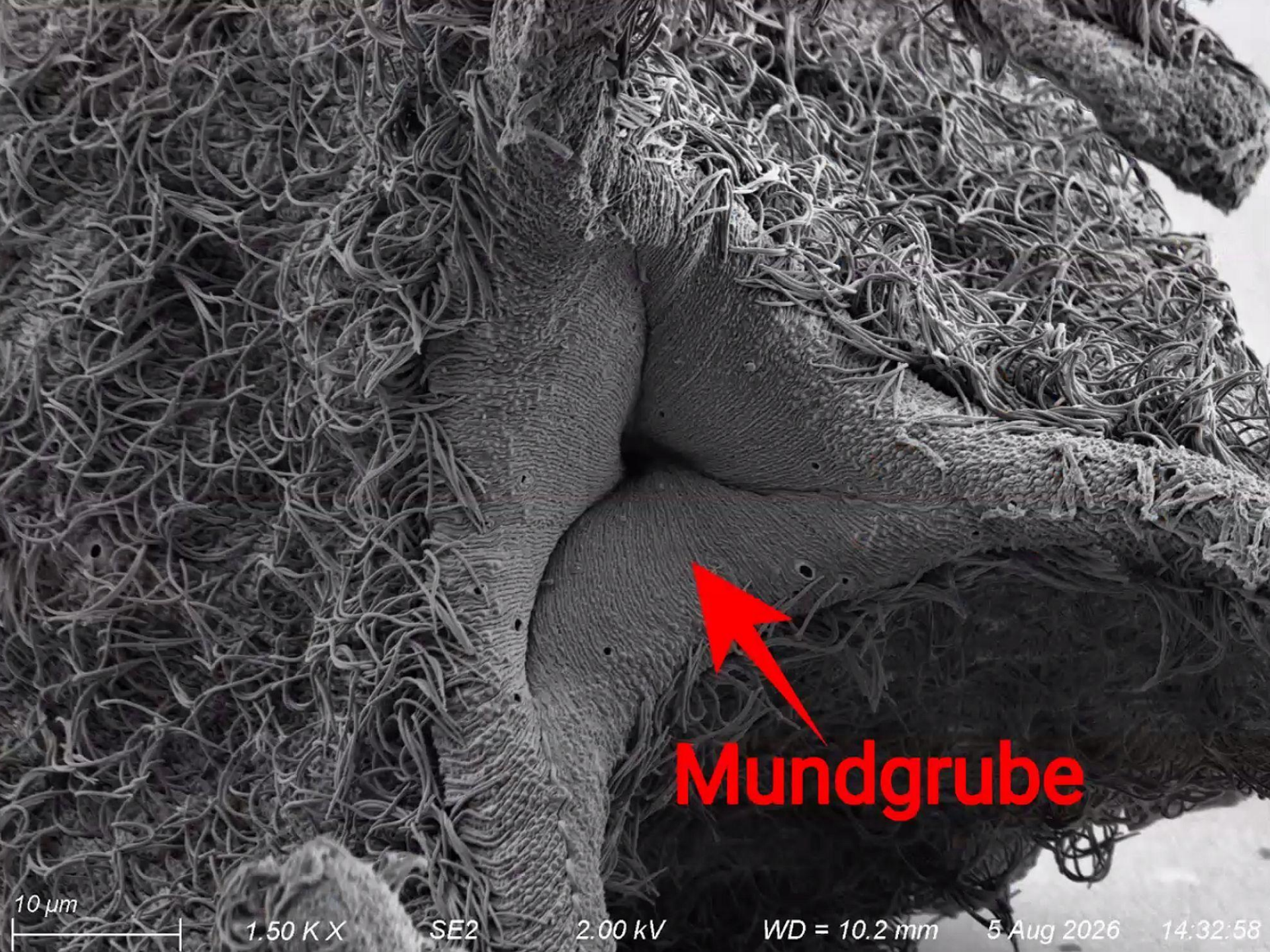
WD = 10.4 mm

27 Jul 2026

18:01:08



**Oral
Bürste**



Mundgrube

10 µm

1.50 K X

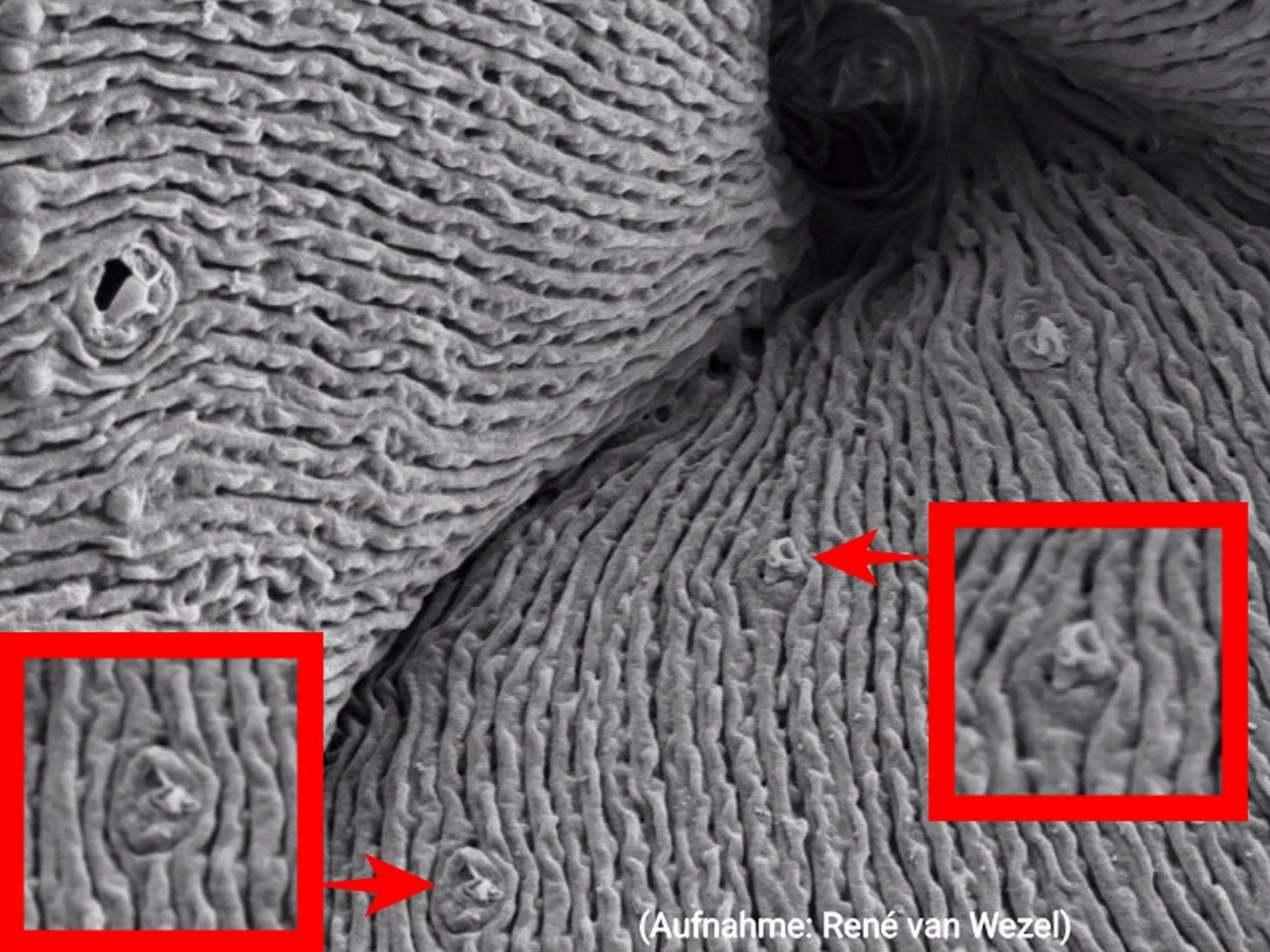
SE2

2.00 kV

WD = 10.2 mm

5 Aug 2026

14:32:58

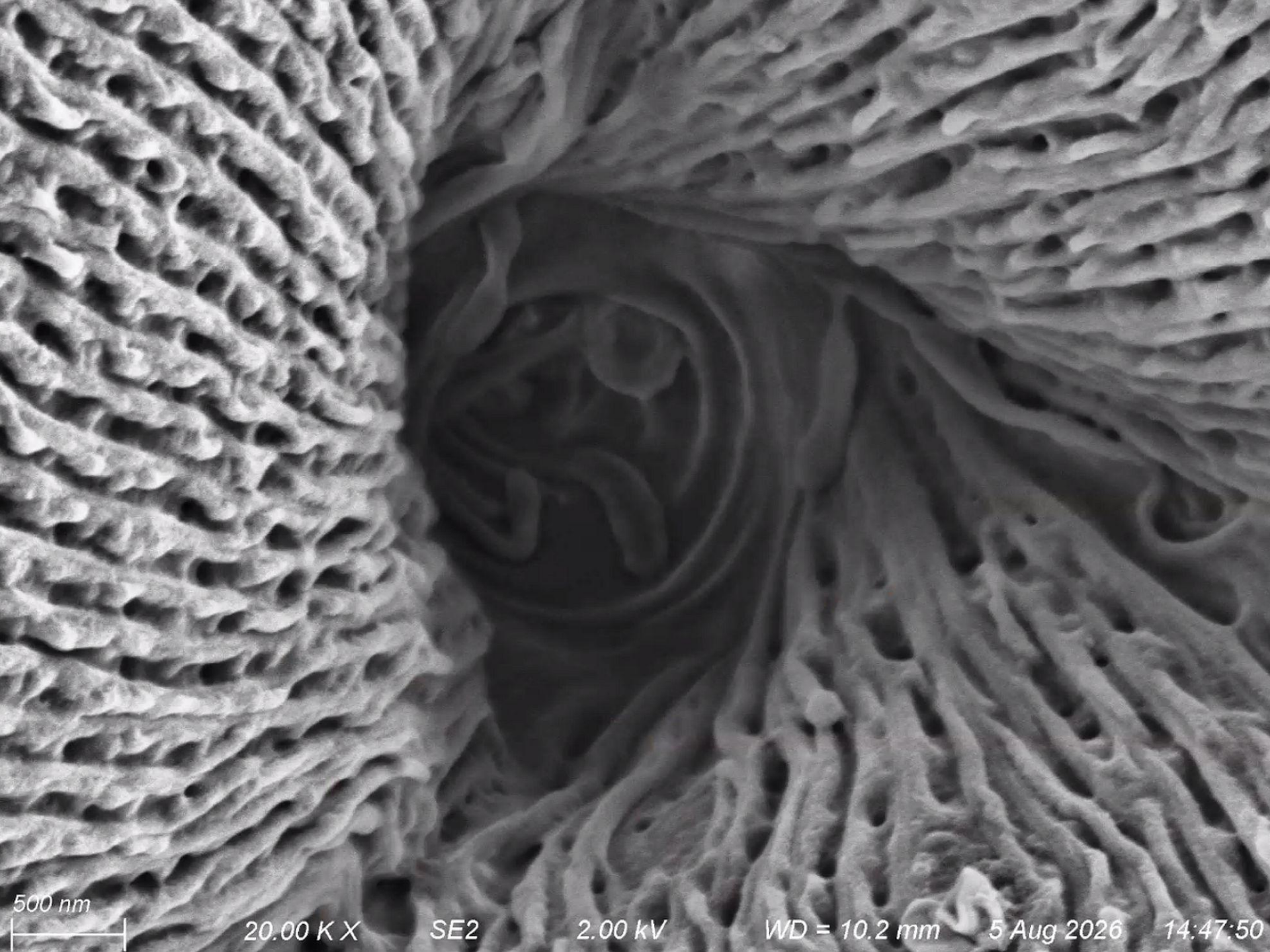


(Aufnahme: René van Wezel)



Mundöffnung

(Foto: Ariel Qassis)



500 nm
20.00 K X SE2 2.00 kV WD = 10.2 mm 5 Aug 2026 14:47:50

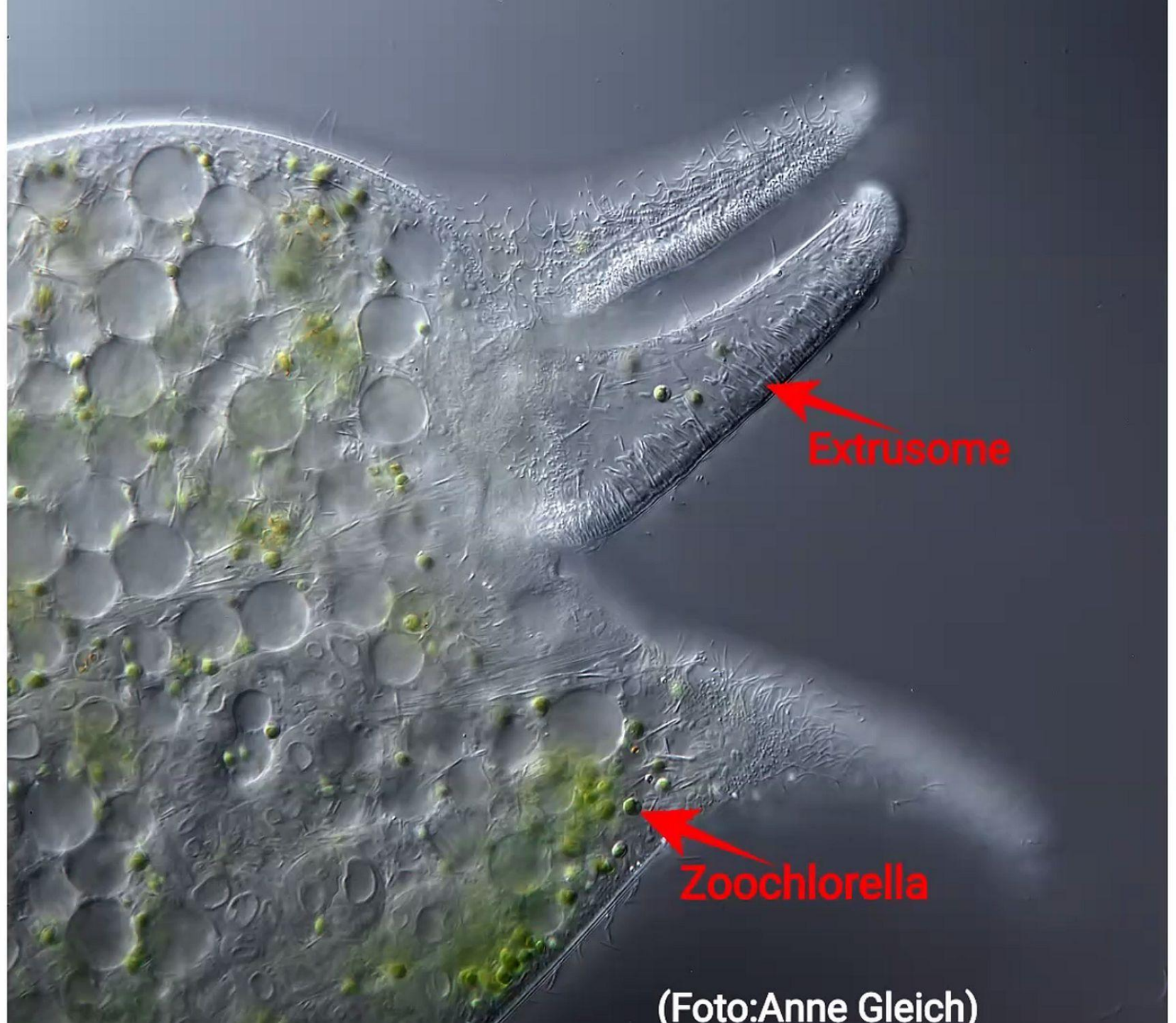


Macronucleus

Micronucleus?

(Foto: Ariel Qassis)

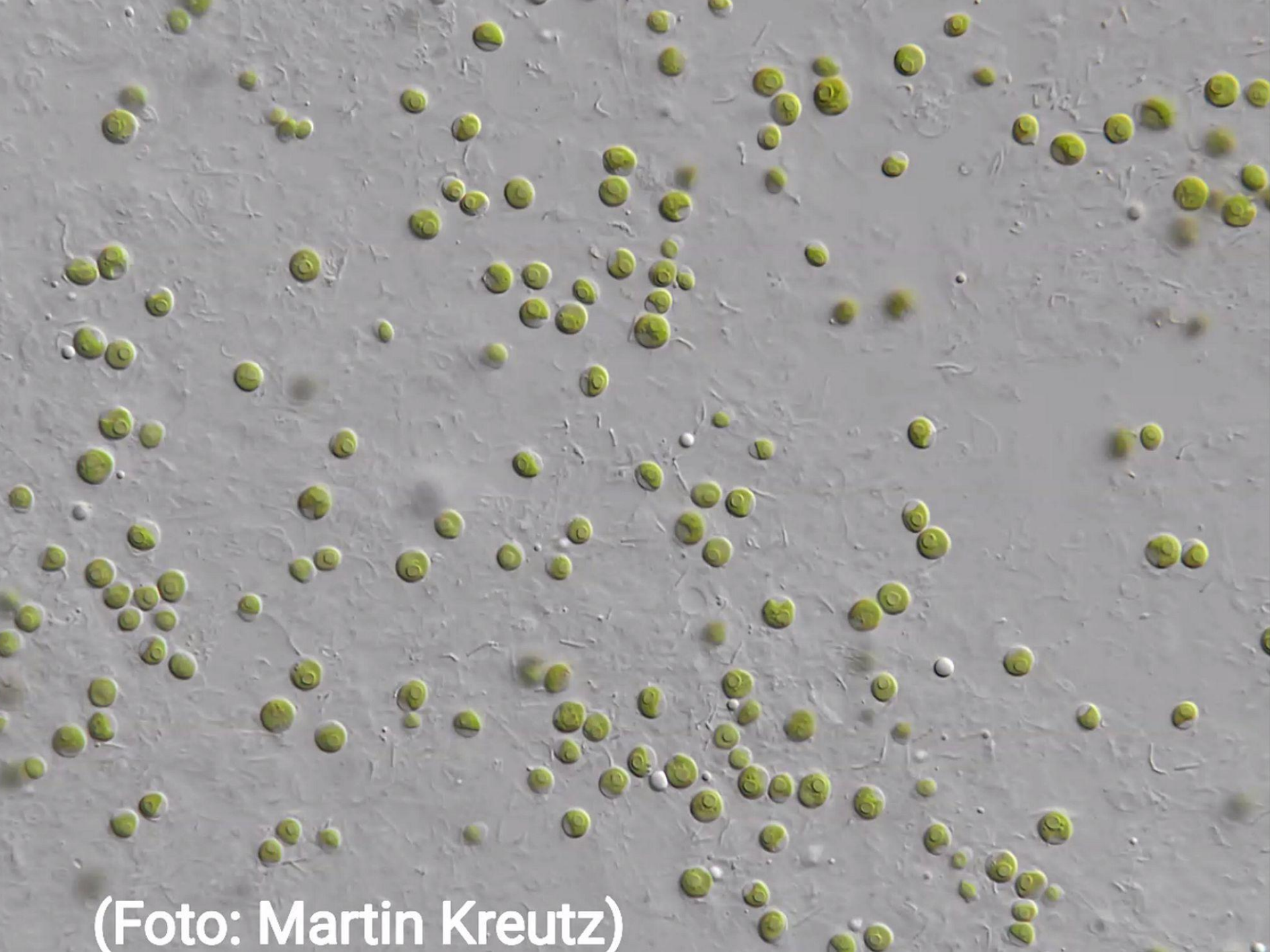
Endosymbionten Segen oder Last



Extrusome

Zoochlorella

(Foto:Anne Gleich)



(Foto: Martin Kreutz)

Teuthophrys trisulca trisulca
Obj. 100 X



(Foto: Martin Kreutz)

A: Life history of algae

○ Endosymbiotic

▲ Epiphytic

B: Host organisms of endosymbiotic algae

Ciliophora; Heterotrichea

(a) *Stentor polymorphus*

Ciliophora; Hypotricha

(b) *Uroleptus* sp.

Ciliophora; Litostomatea

(c) *Didinium* sp.

(d) *Pelagodileptus tracheloides*

(e) *Teuthophrys trisulca trisulca*

Ciliophora; Prostomatea

(f) *Askenasia chlorelligera*

(g) *Bursellopsis spumosa*

(h) *Cyclotrichium viride*

Ciliophora; Oligohymenophorea

(i) *Frontonia vernalis*

(j) *Frontonia paravernalis*

(k) *Paramecium chlorelligerum*

(l) *Paramecium bursaria*

(m) *Stokesia vernalis*

(n) *Tetrahymena utriculariae*

(o) *Trichodina chlorophora*

Animalia; Cnidaria; Hydrozoa

(p) *Hydra* sp.

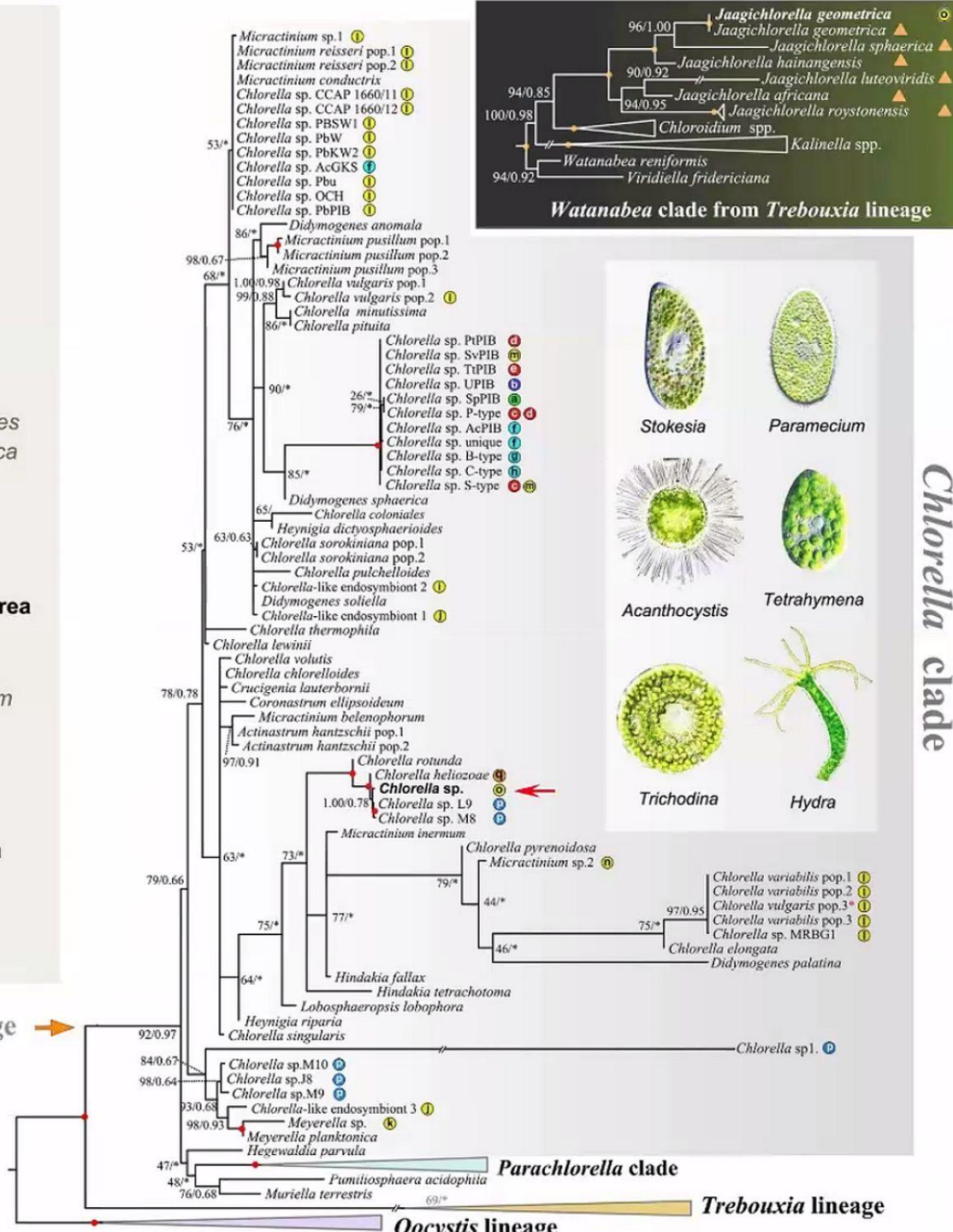
Heliozoa; Centrohelea

(q) *Acanthocystis turfacea*

18S rRNA gene
IQ-Tree/ MrBayes

0.05

100/1.00



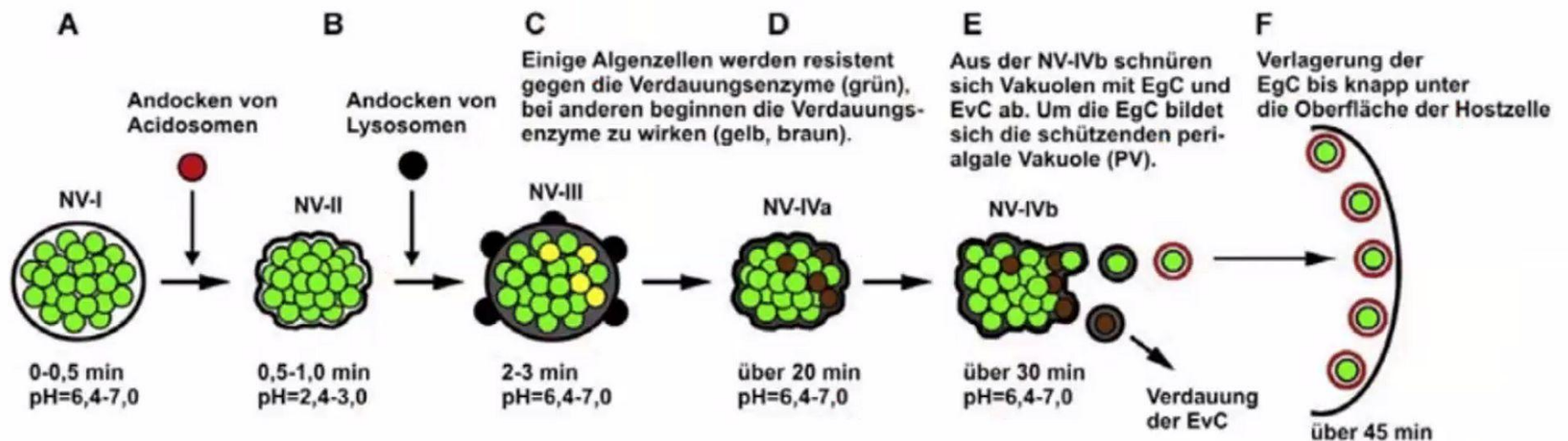
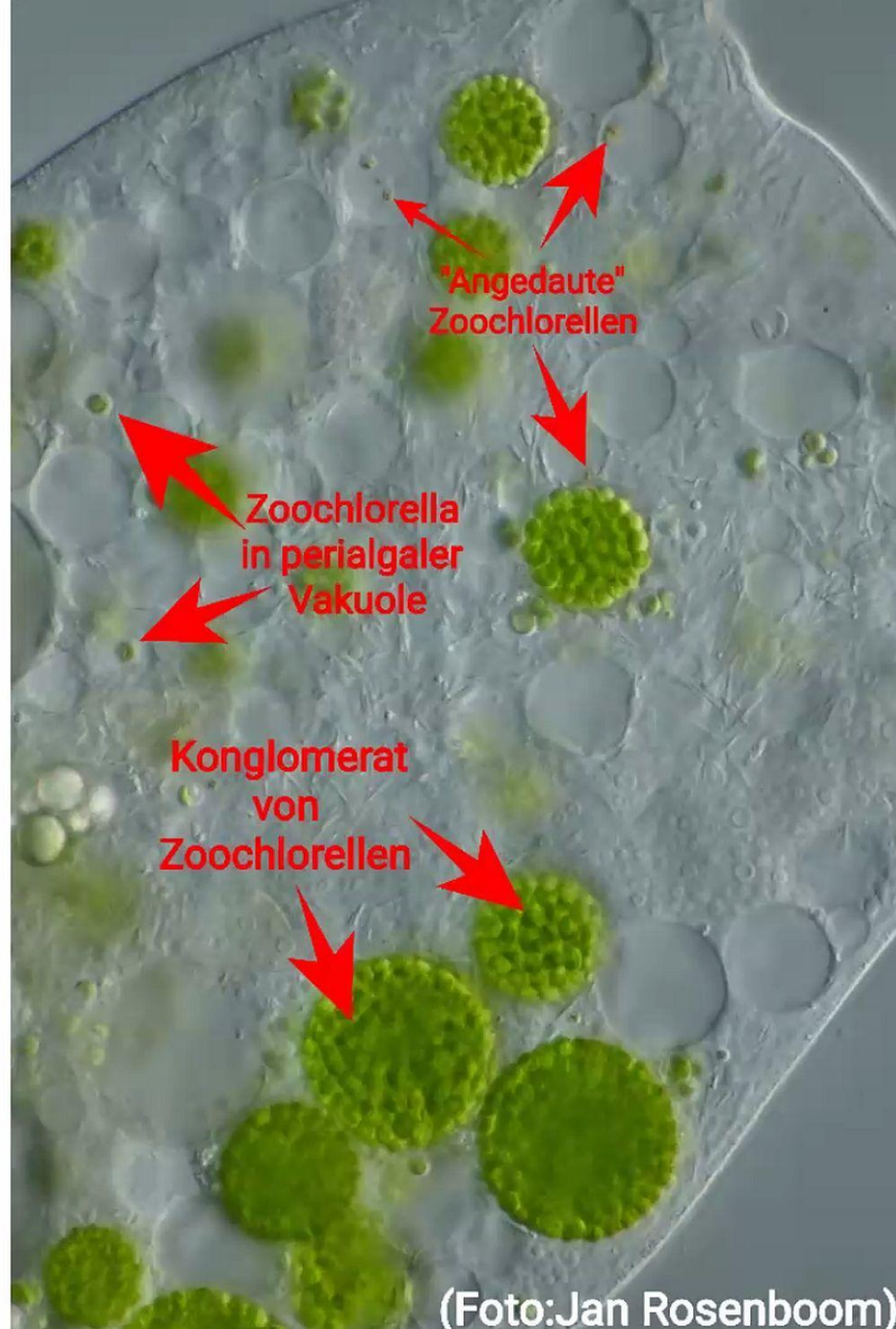


Abb. 32: Stadien der Nahrungsvakuolen (NV-I bis NV-IVb) bei *P. bursaria* sowie der Differenzierung von perialgalen Vakuolen (PV) als Lebensraum für endosymbiontische Chlorellen. EgC=einzelne grüne Chlorelle, EvC= einzelne verdaute Chlorelle. Nach Kodama und Fujishima (2009), verändert.



(Foto: Jan Rosenboom)



- toleriert höhere Bakteriendichte
- Höhere Teilungsrate bei genügend Beutevorkommen
- Kein Stress durch O₂
- Kein Energieaufwand für's "Gärtnern"



- Energiezugewinn durch Licht
- Geringere Abhängigkeit von Rotatoria
- Vorteile bei kühleren Temperaturen



(Foto: Jan Rosenboom)

Konkurrenz im Lebensraum



**Nahrungskonkurrent:
Paradileptus elephantinus**







reife Zyste



aktives Tier



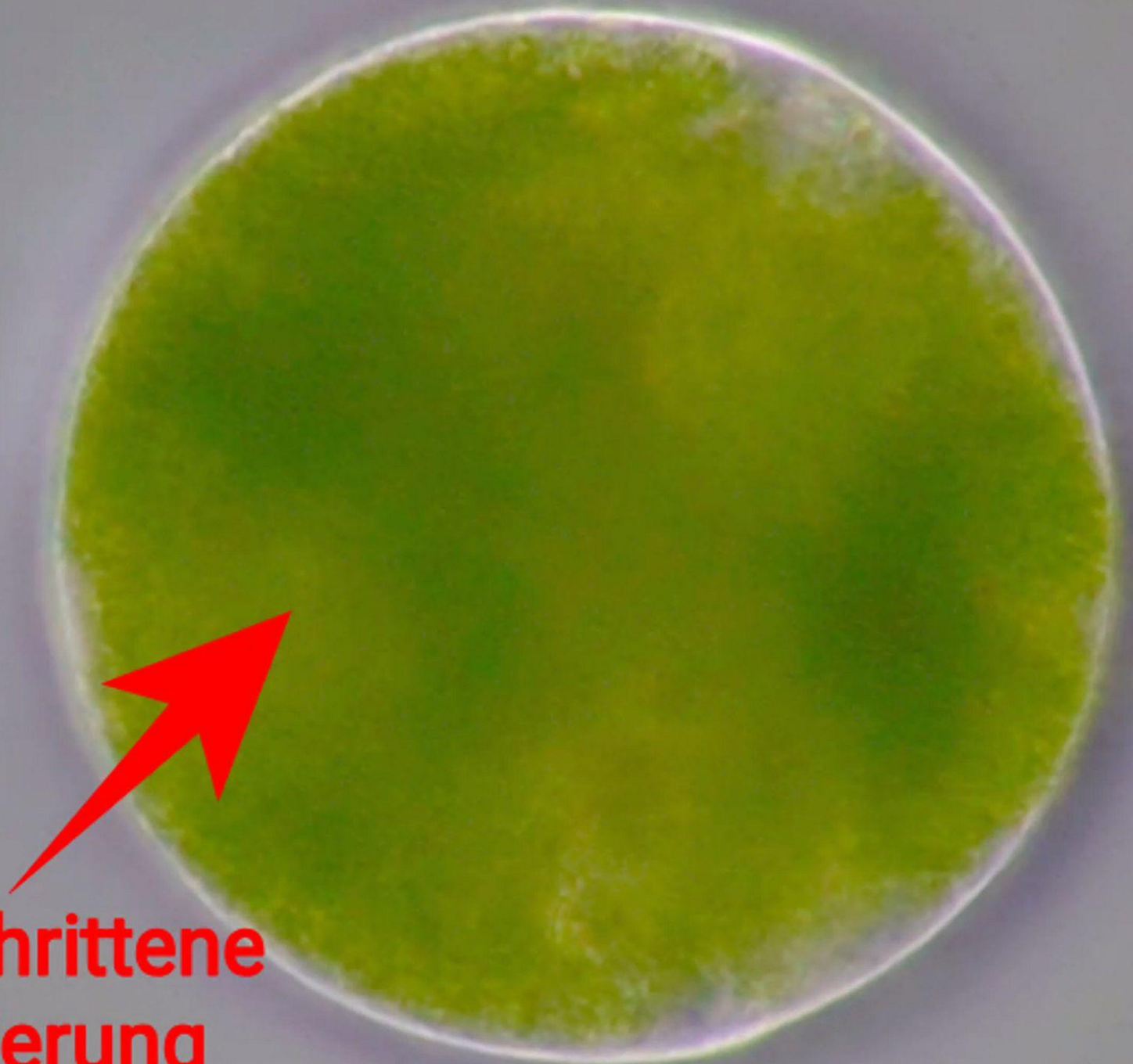
junge Zyste



Encystation

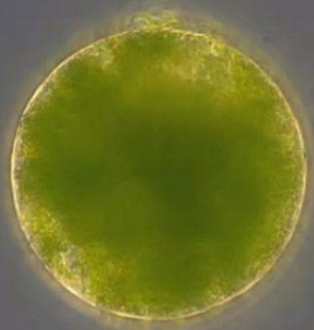


frühes Stadium
der Encystierung

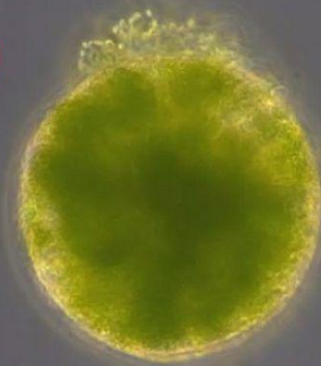


fortgeschrittene
Encystierung

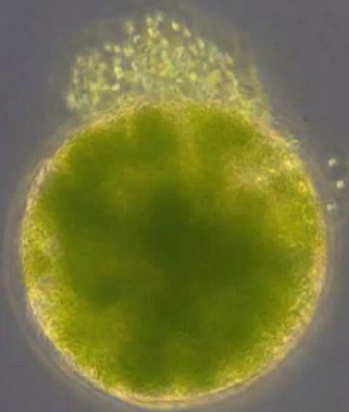
1



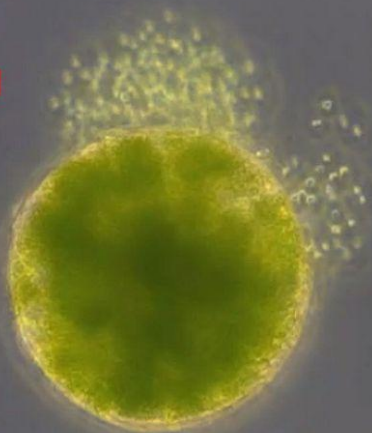
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3



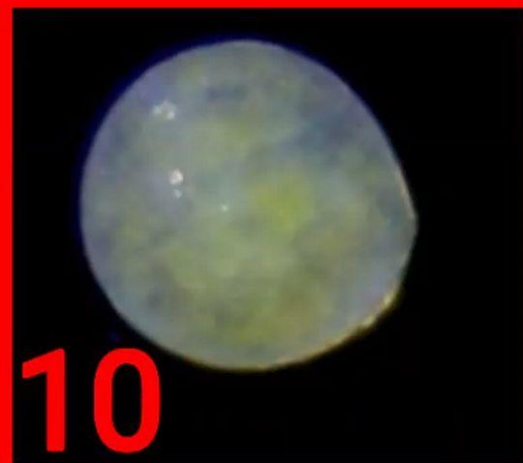
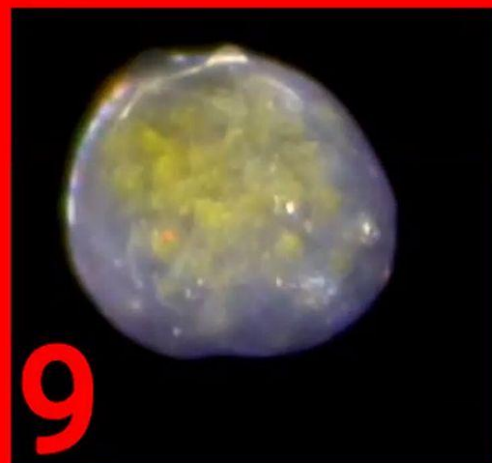
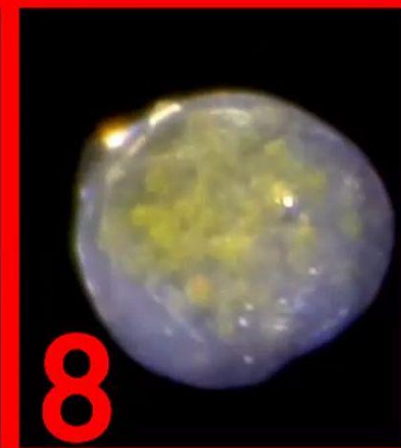
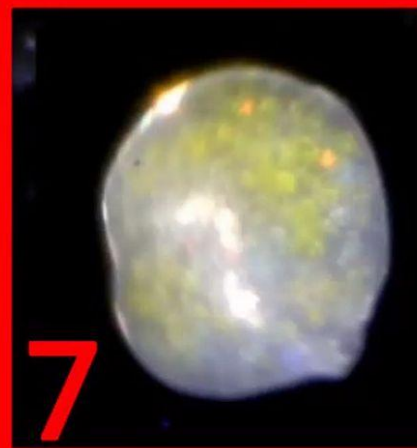
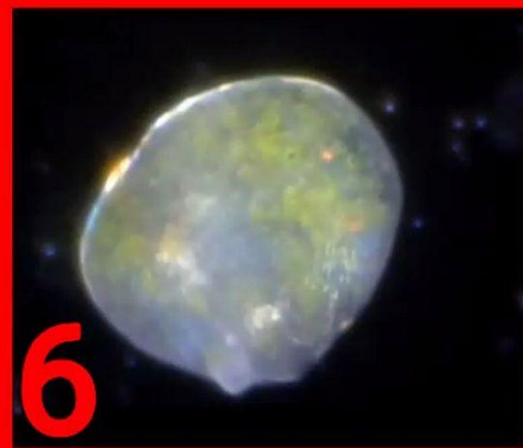
4



Konjugation

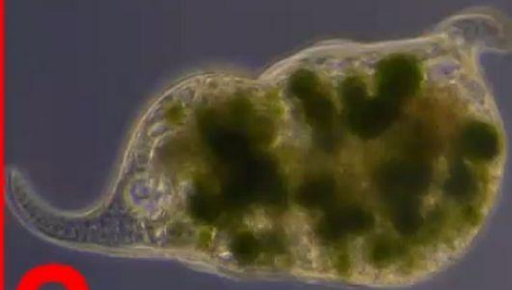


**Zwei "Teuthophrys-Kugeln"
bleiben bei Berührung
aneinander haften**





1



2



3



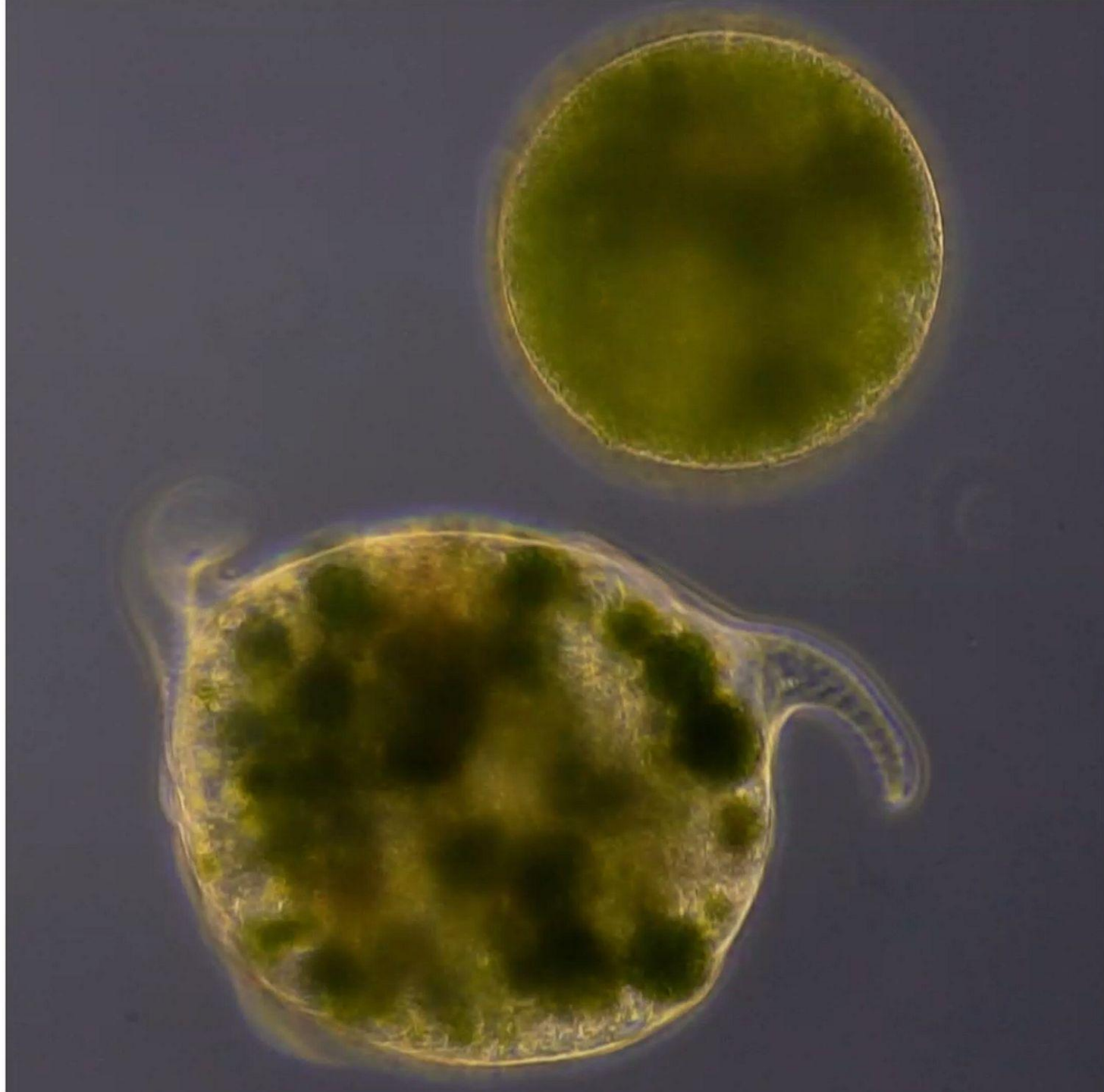
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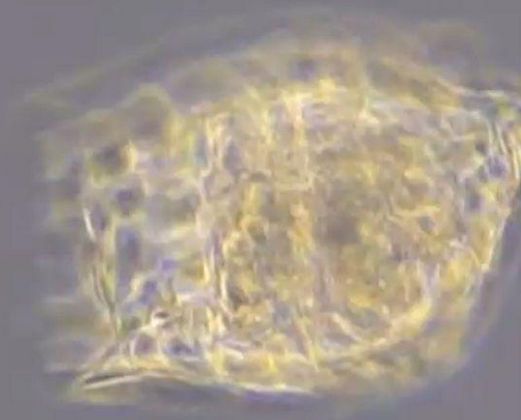


5



6





Teilung



ENDE

