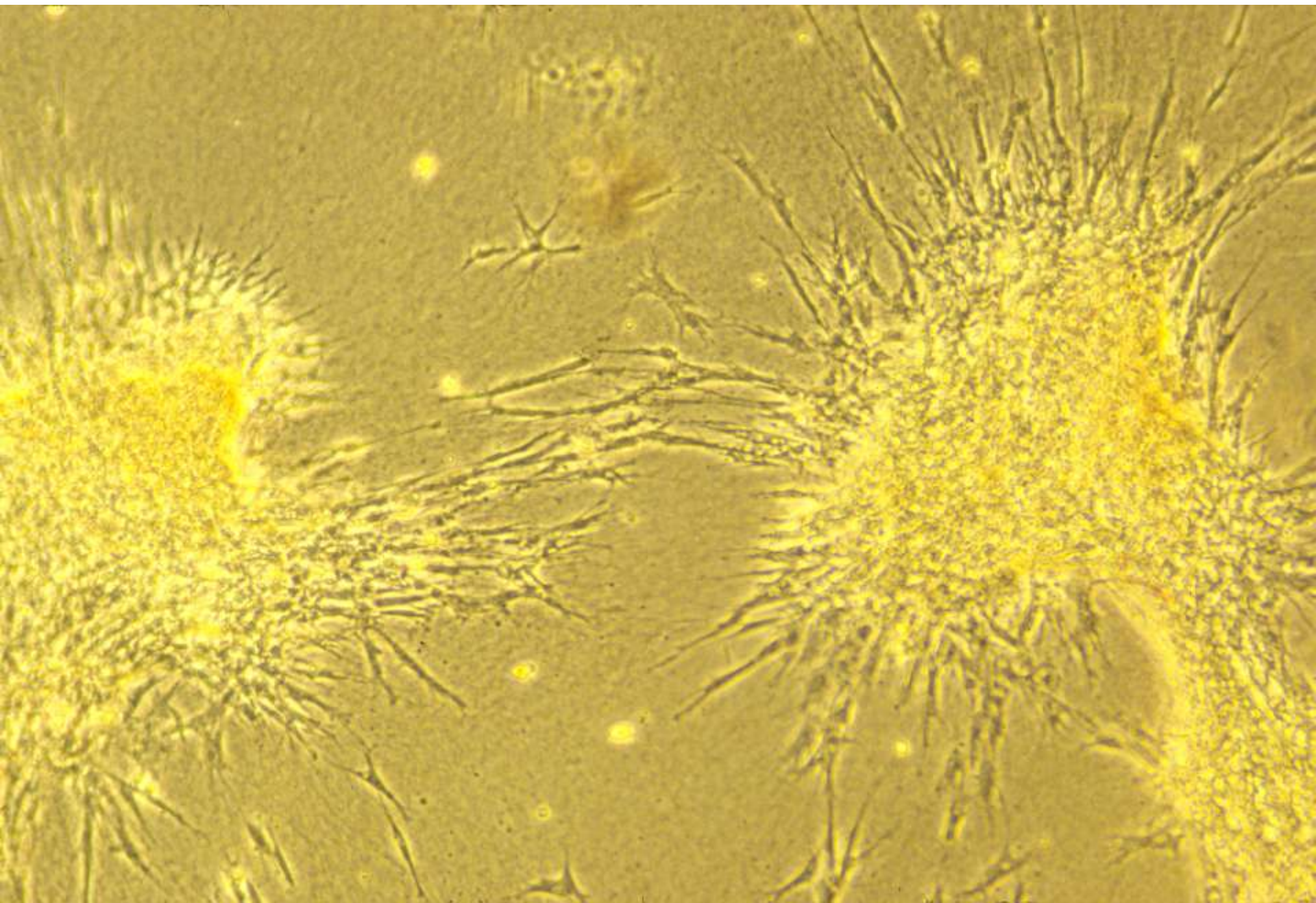


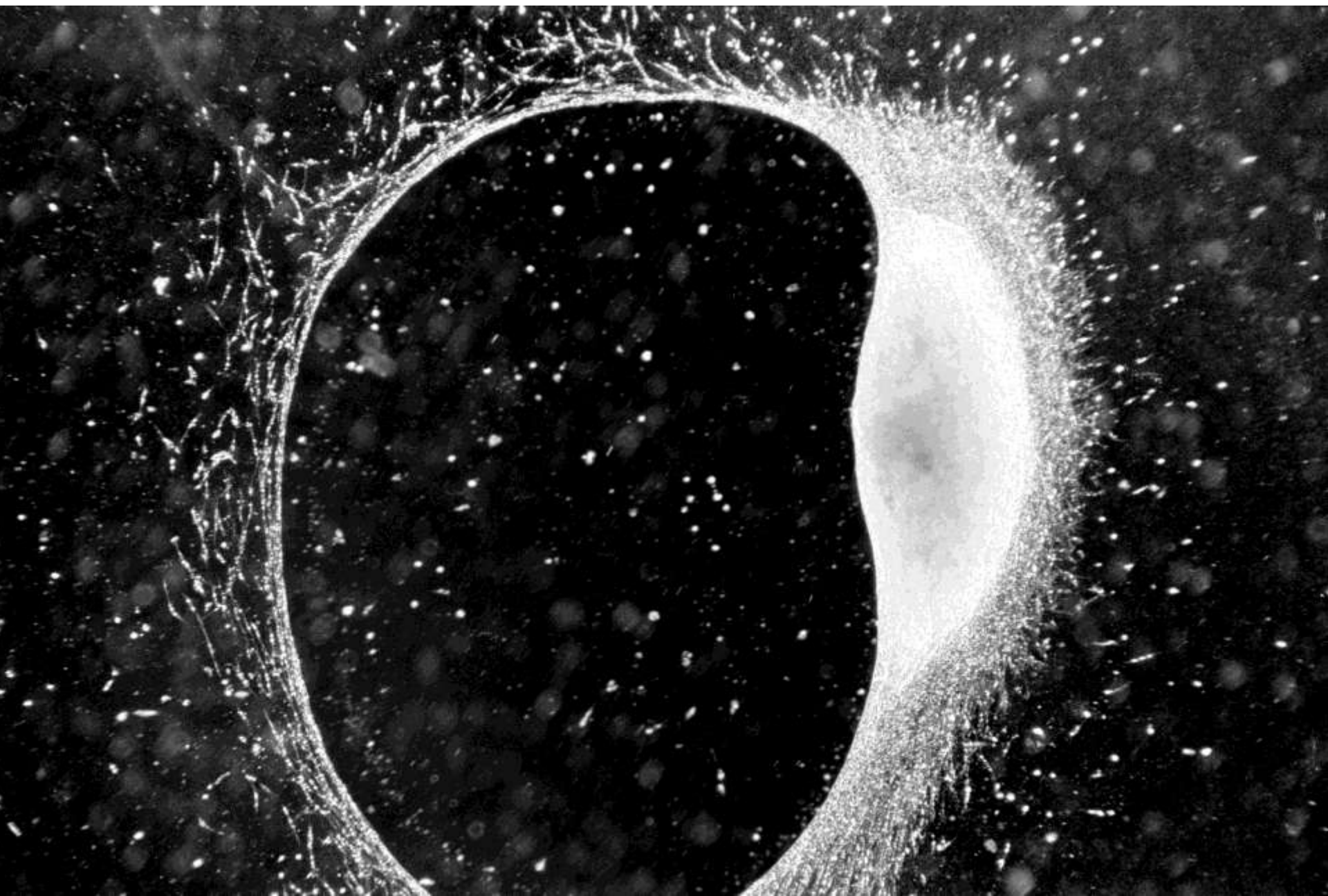
# The Mistaken Differential Adhesion Hypothesis

Albert K. Harris  
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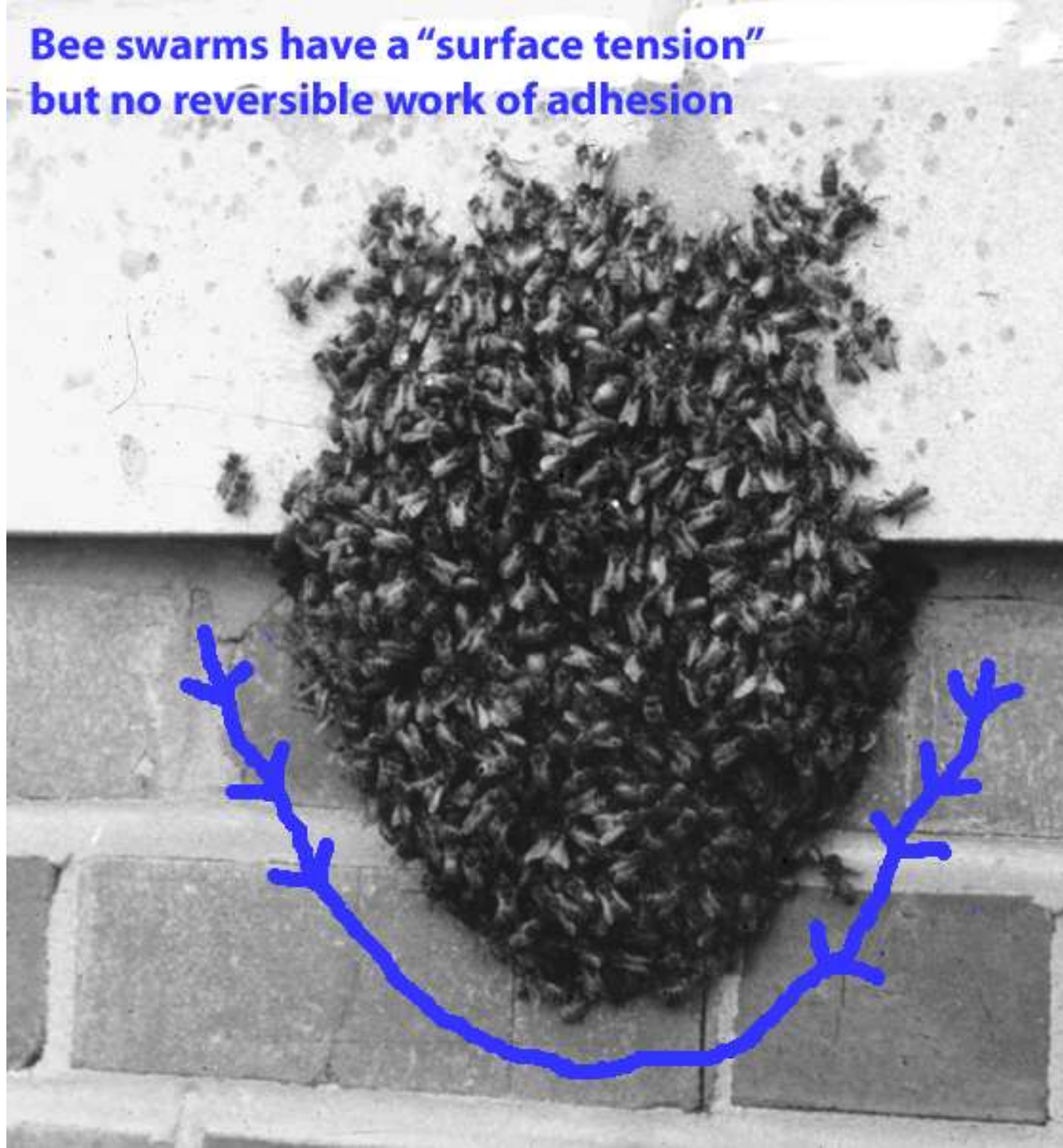
Embryo Physics Course, January 23, 2013



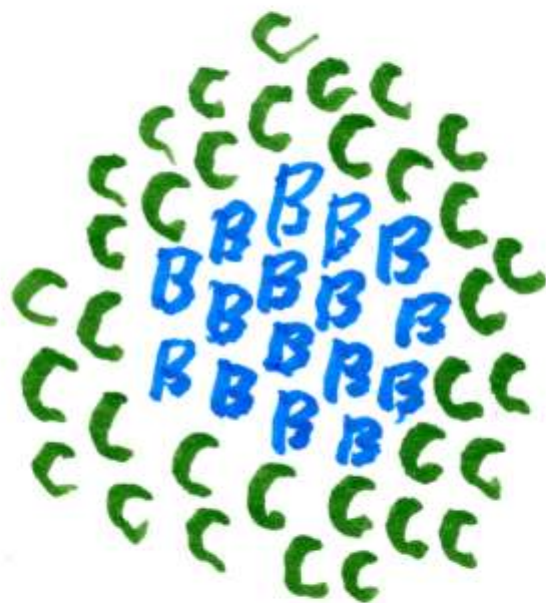




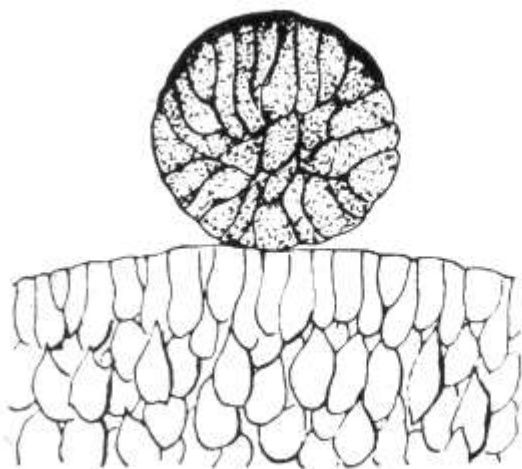
Bee swarms have a "surface tension"  
but no reversible work of adhesion



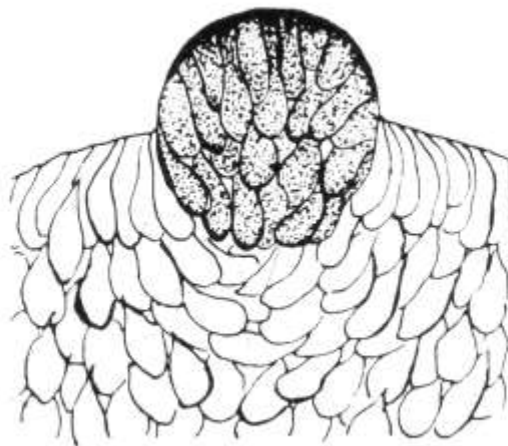




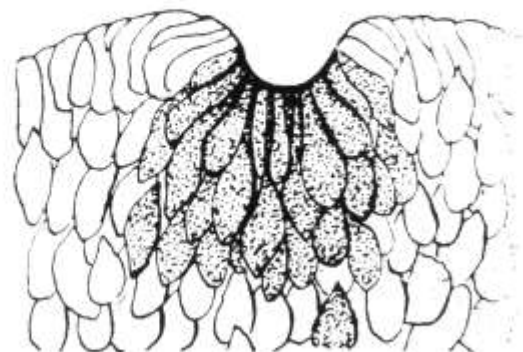




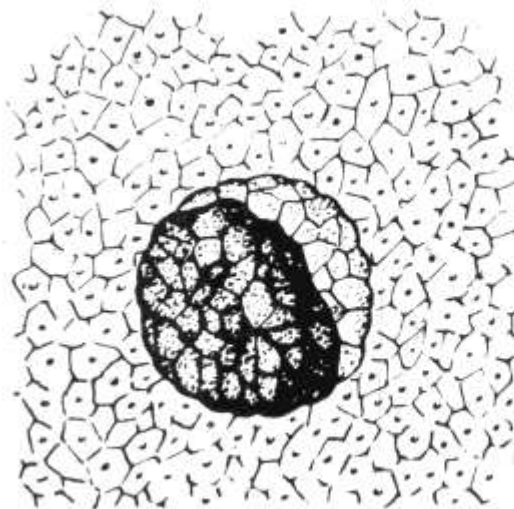
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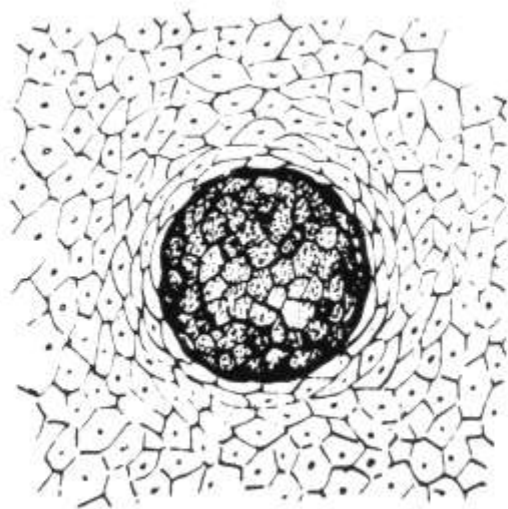
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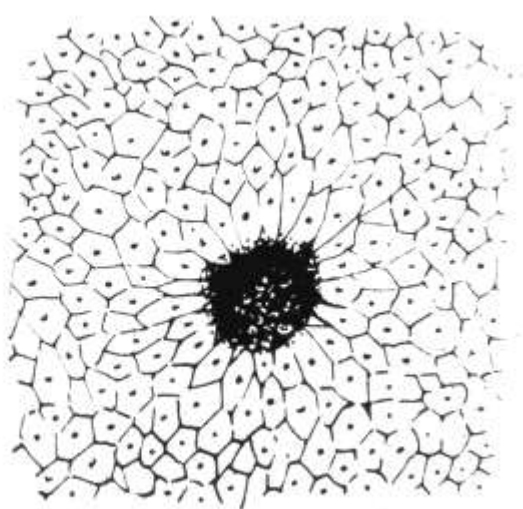
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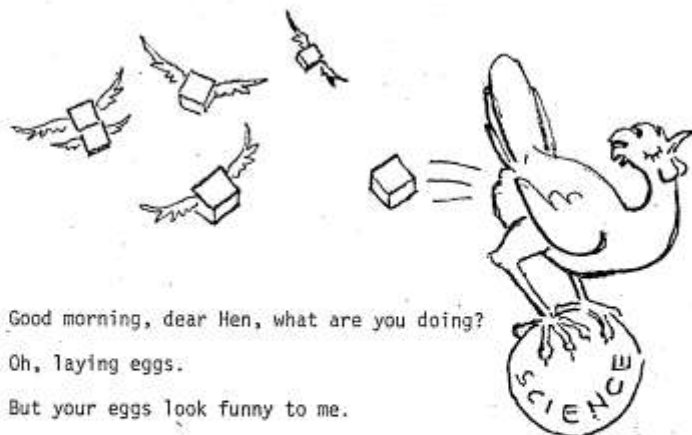
d



e



f



Good morning, dear Hen, what are you doing?

Oh, laying eggs.

But your eggs look funny to me.

Naturally, they are special eggs -  
Oeufs à la hypothèse, Windeier,  
filled with phlogiston and other rare gases,  
so they can fly in the air, free and unbound.

But why are they so angular?

Stupid question! They are angular  
because they are angular! Or, if  
you insist on a precise explanation:  
it's because of angular surface contraction  
that they have their angular shape.

Does it not hurt to lay these things,  
I mean, all those sharp corners?

Well, I got used to it. I do it routinely.

Are your hypothetical eggs good for eating?

Certainly not. They're too precious for that,  
too aeroteric - estoteric, if you know what I mean.

Hmm. But then, what are they good for? What becomes of them?

Don't worry about them; they're smart. They fend for themselves.  
It's fun watching them, frolicking in the air,  
fighting each other, or breeding more of their kind.

Are you paid for what you are doing?

What an insult! I do it voluntarily,  
just for the sake of Science, and its Holy Ghost,  
the principle of Unitarian Enlightenment.

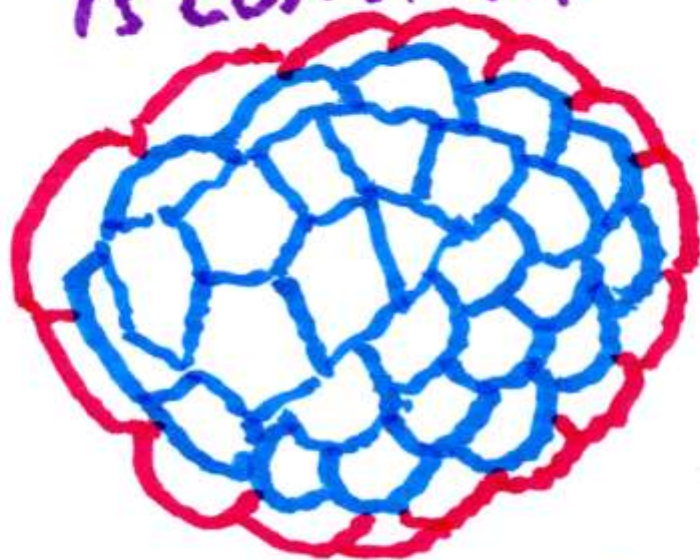
Gee whiz!

*Greetings, Hans H. Meyer.*

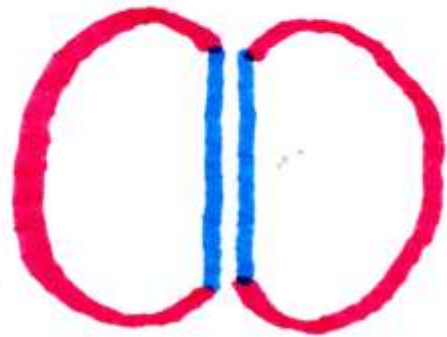




IF  $AREA + AREA$   
IS CONSTANT



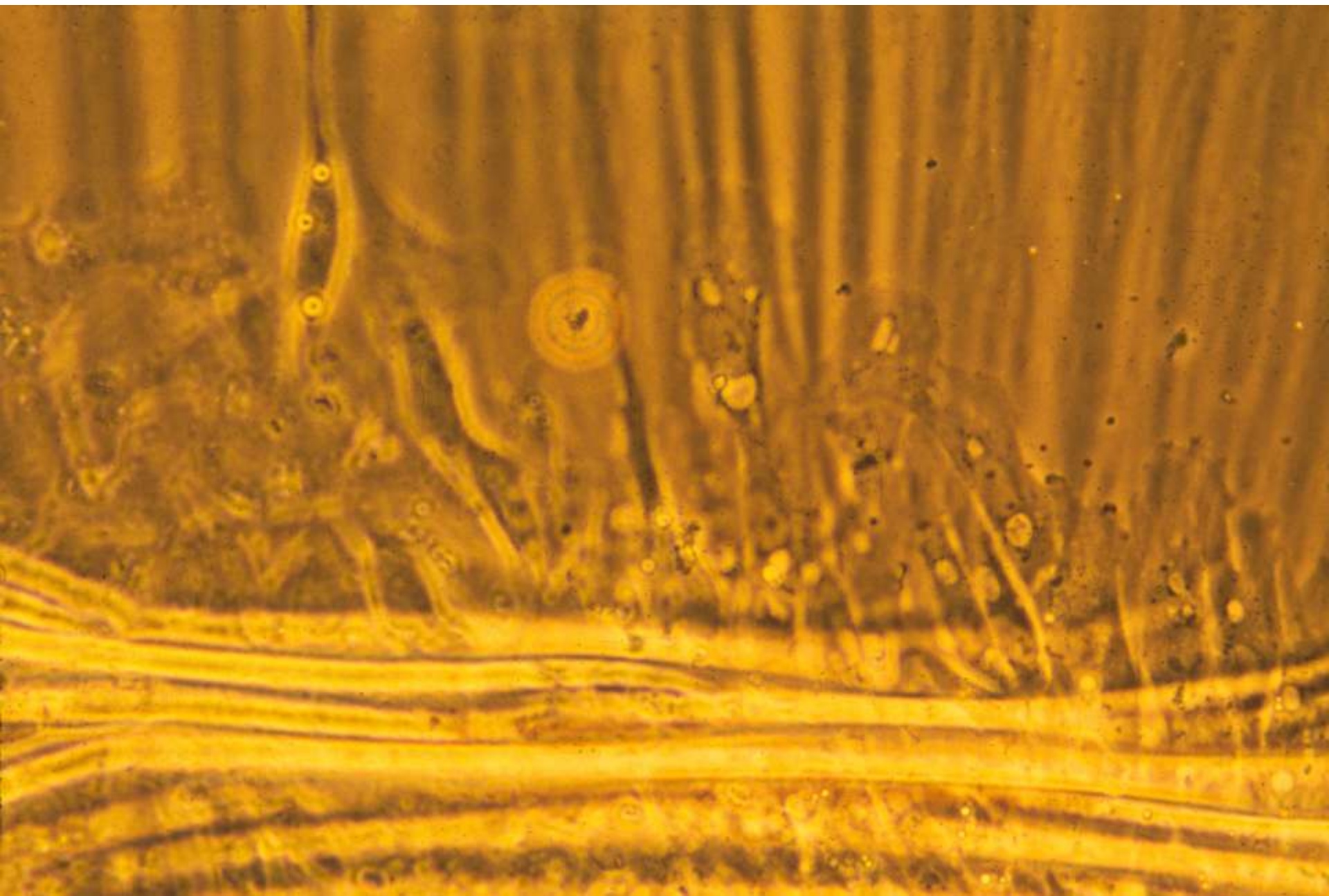
MAXIMIZATION  
IS THE SAME AS  
MINIMIZATION



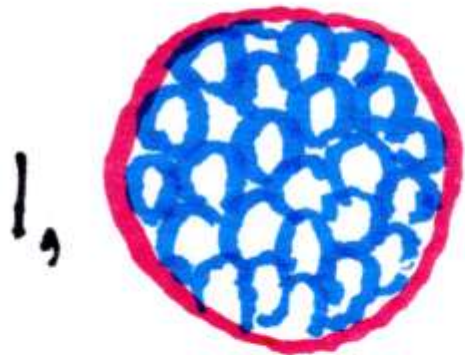
$$\begin{aligned} & \text{AREA (outside)} \\ & + \\ & \text{AREA (cell contact)} \\ & = \\ & \text{AREA (TOTAL)} \end{aligned}$$

MAXIMIZE  
AREA = MINIMIZE  
AREA  
IF TOTAL AREA = CONSTANT

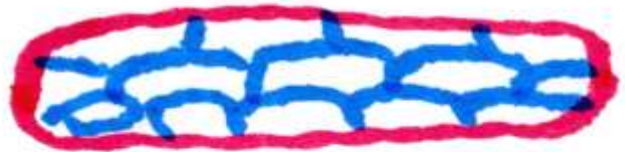




CENTRIFUGAL  
Force ↓



2



time



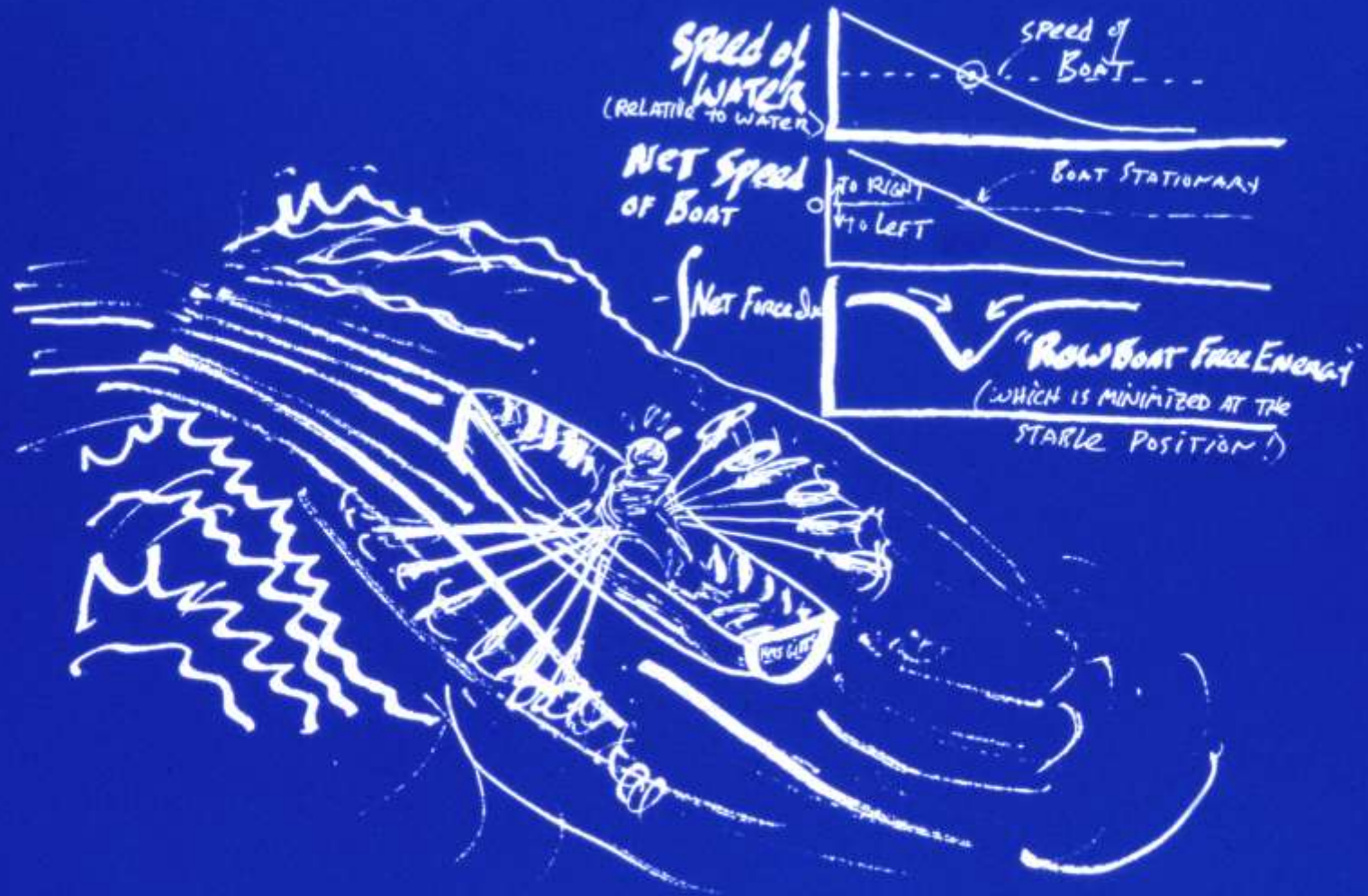
3.



4.



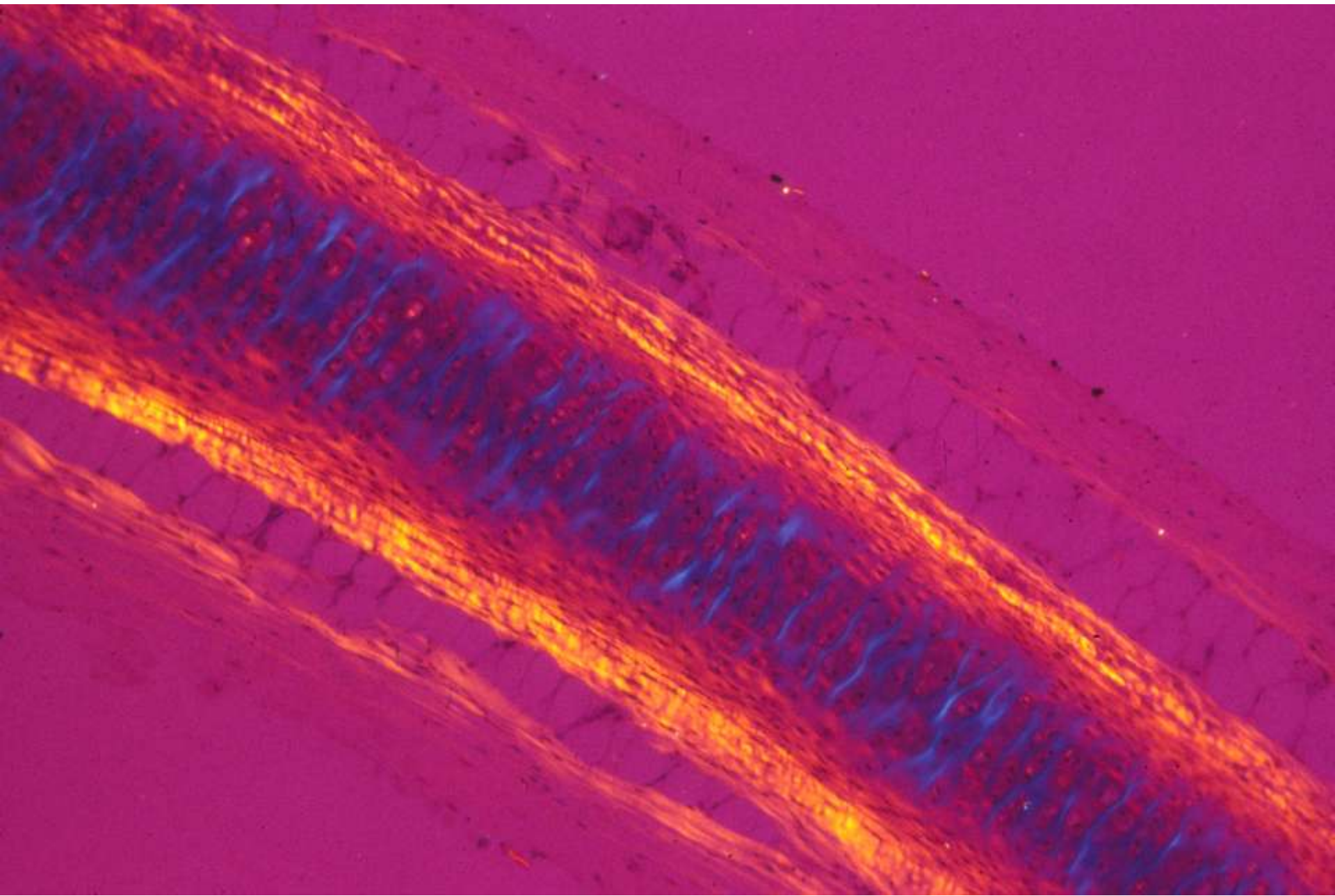




## TRYING TO ROW A BOAT UP a Rapid

(OR, WHY ASYMPTOTIC STABILITY DOES NOT REQUIRE OR IMPLY MINIMUM FREE ENERGY)











# Homeostasis As A kind of ASYMPTOTIC STABILITY

