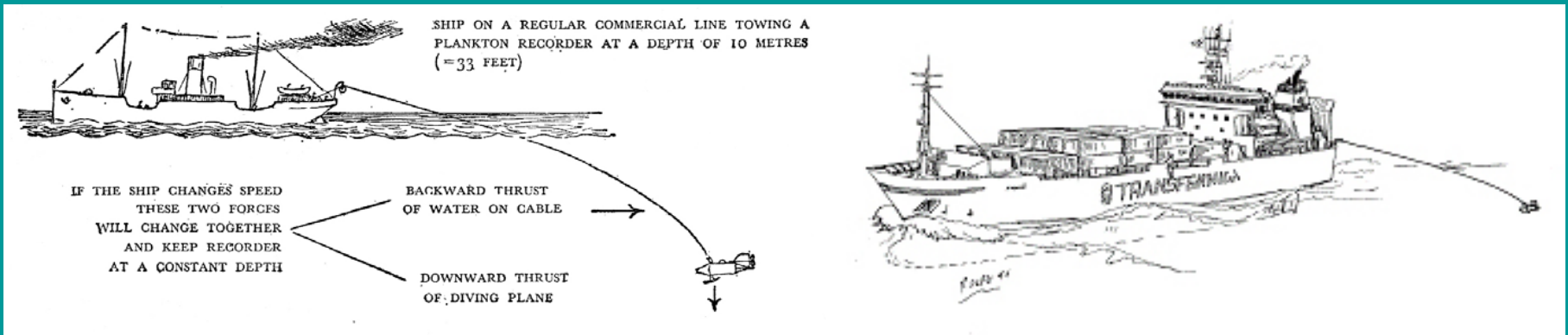
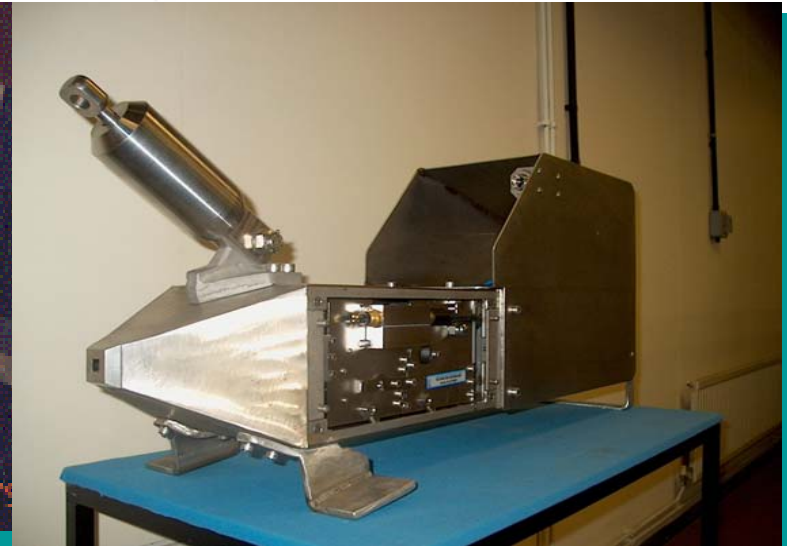


# CPR tune-up for the Baltic – adapting old and proven methods to new environment



From 1930es



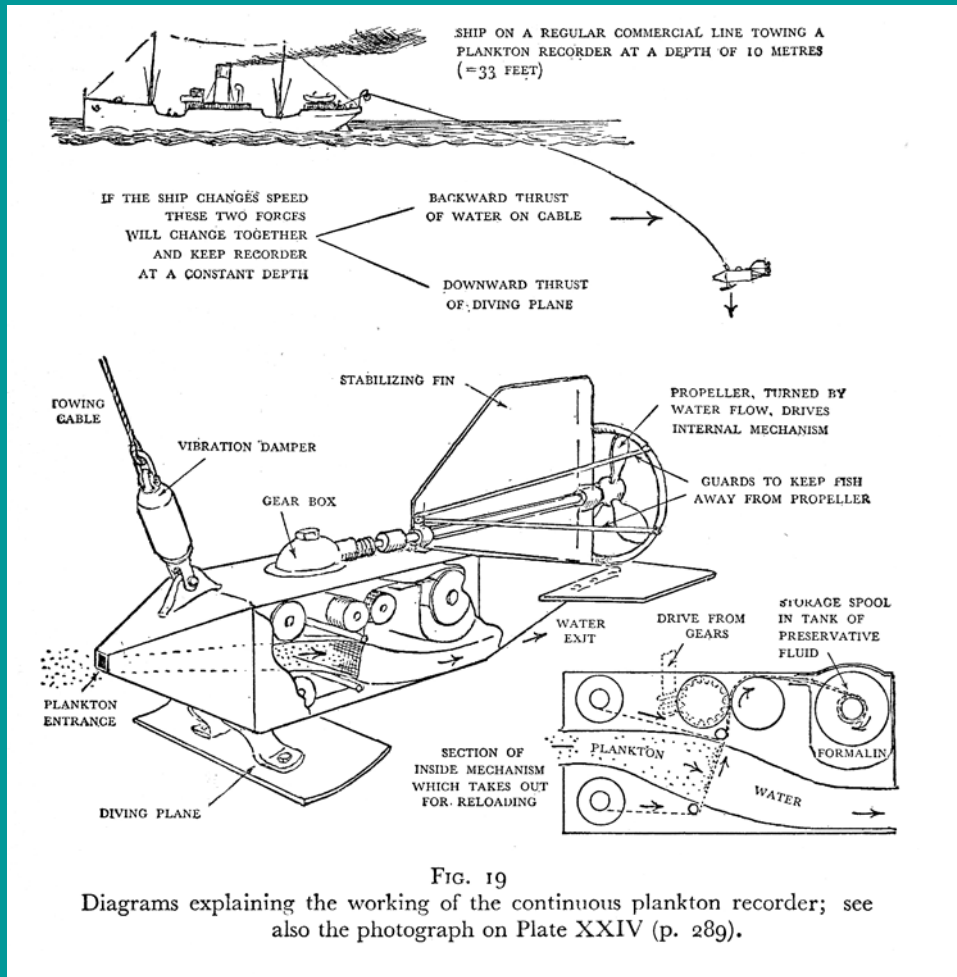
into 21<sup>st</sup> century

Hardy developed the original Continuous Plankton Recorder after realising the temporal and spatial restrictions of traditional net sampling

basic concept from the very beginning was SOOP operation!

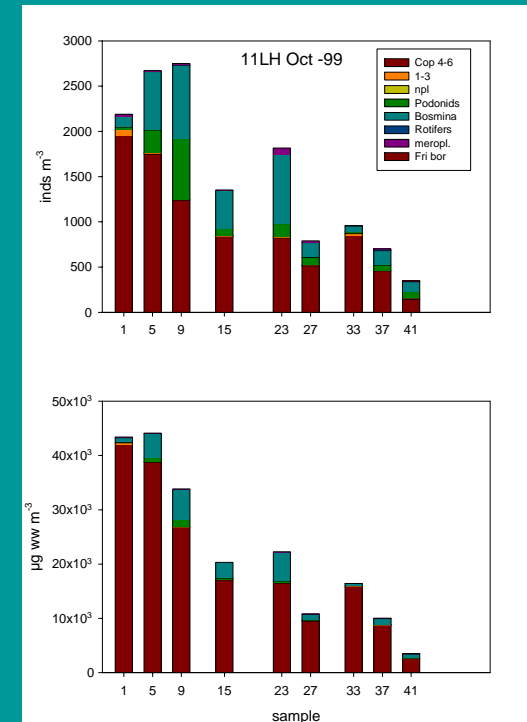
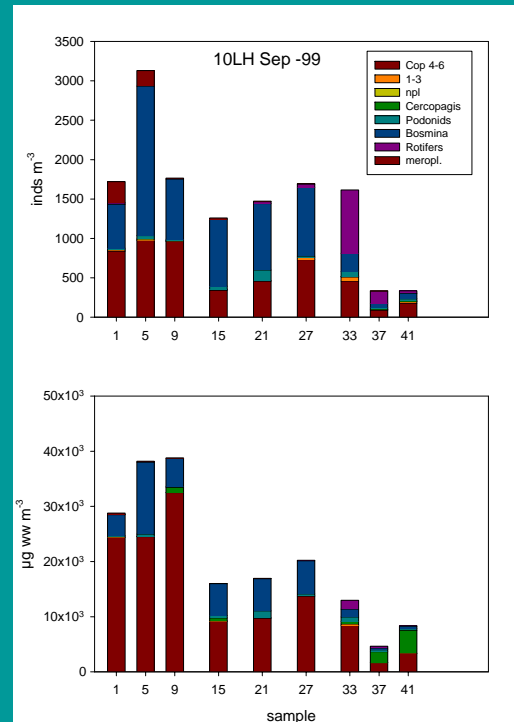
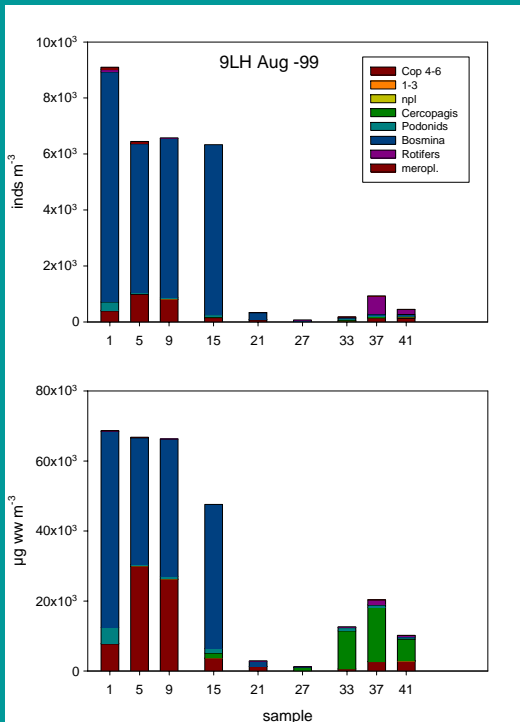
robust design, filtering mechanism propeller driven

mesh size 260/280um, suitable for world ocean plankton





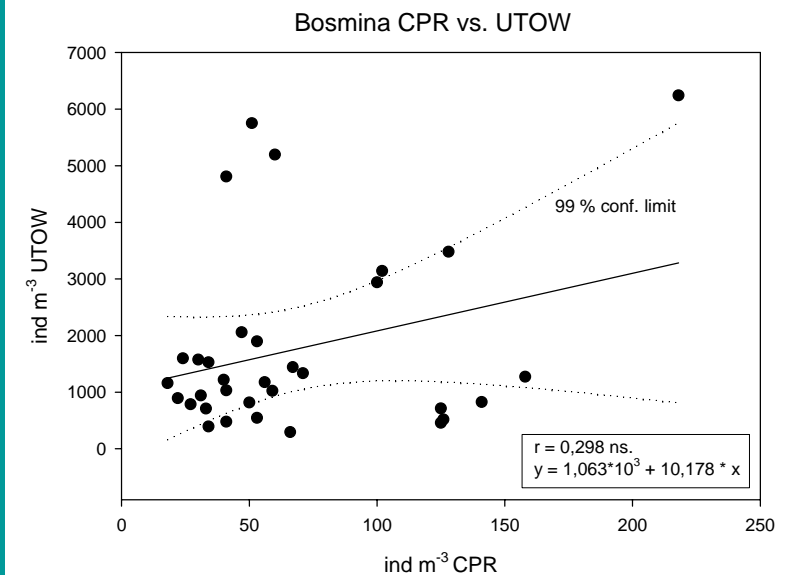
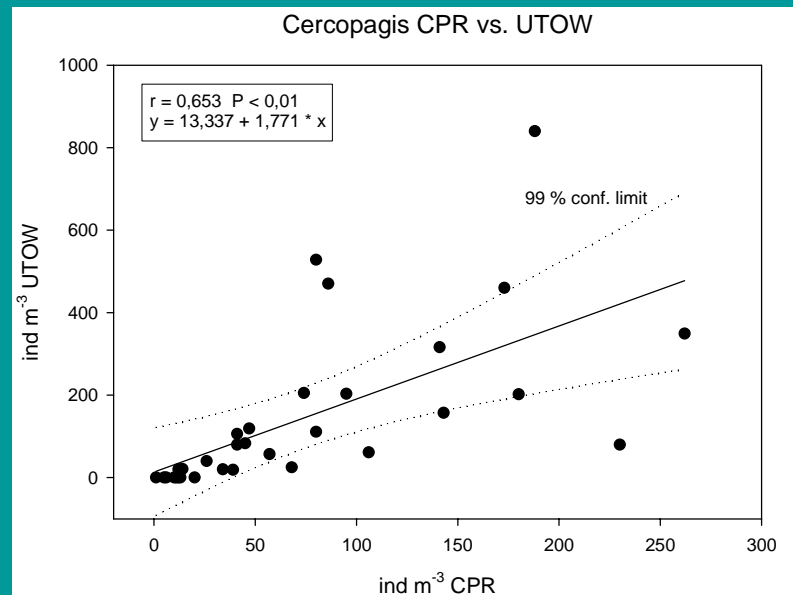
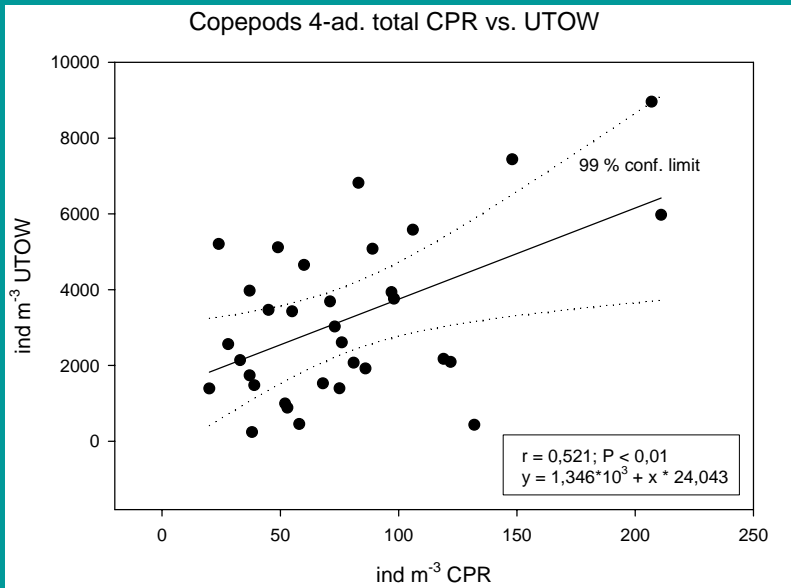
# To expand Alg@line operation to zooplankton, CPR experiment was carried out in the Baltic 1998-99 on a transect between Lübeck and Hanko, towed by fast Transfennica containerships



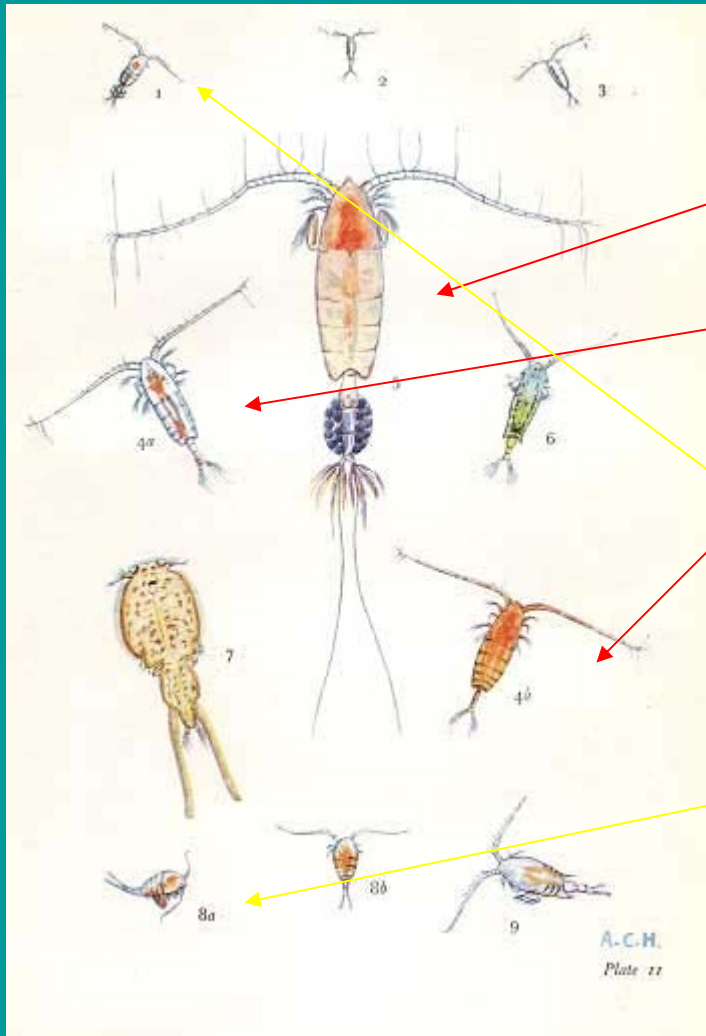
results were promising, but low abundances caused concern

Comparison studies carried out by scientists from FIMR and SAHFOS showed that a CPR loaded with standard 280 um mesh significantly under-samples Baltic plankton...

even in comparison to 200um mesh!



Why? maybe Sir Alister could answer this question!



**large oceanic copepods:**

*Euchaeta norvegica*

*Calanus finmarchicus*

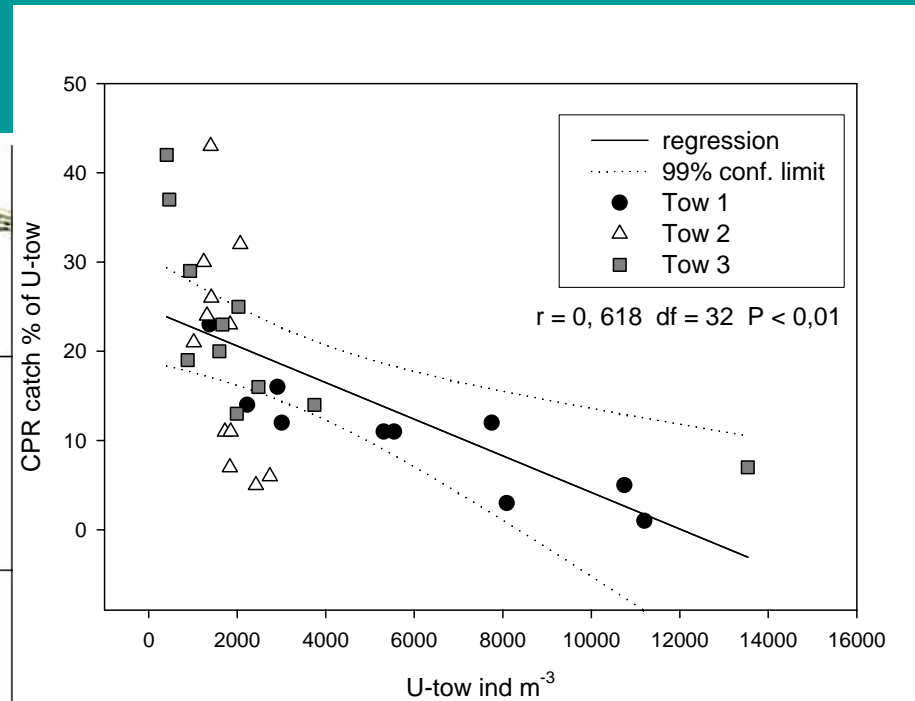
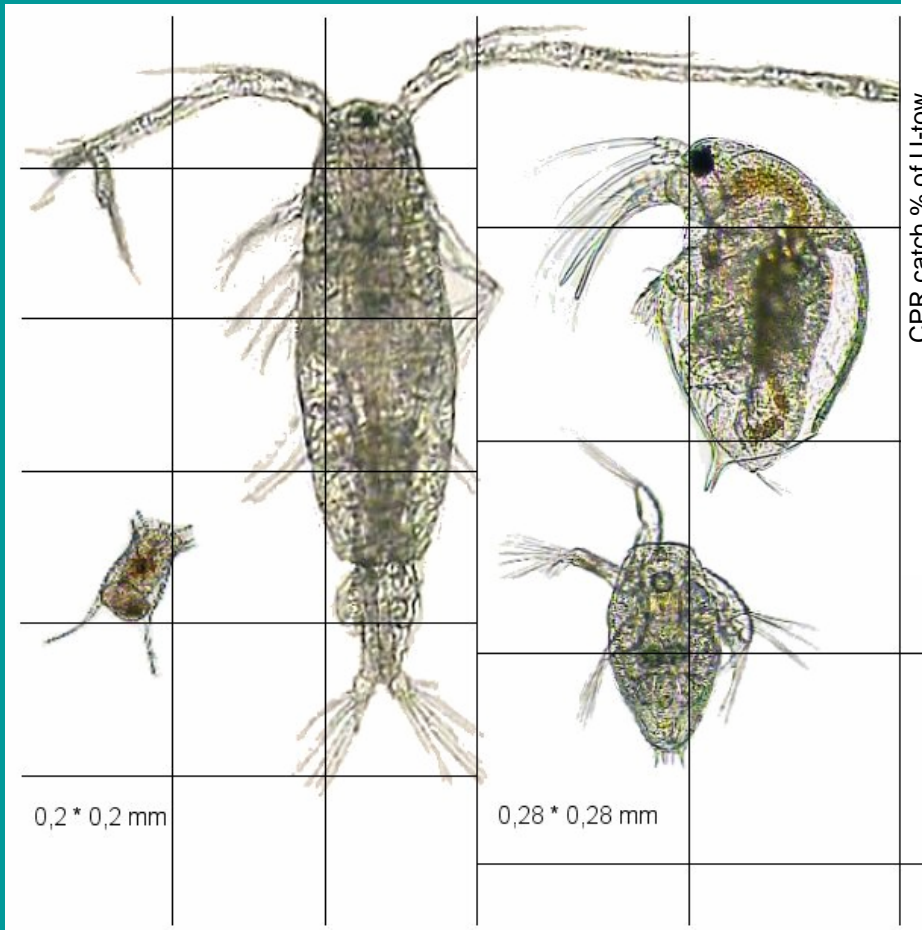
**large Baltic copepods:**

*Pseudocalanus elongatus*

*Temora longiremis*

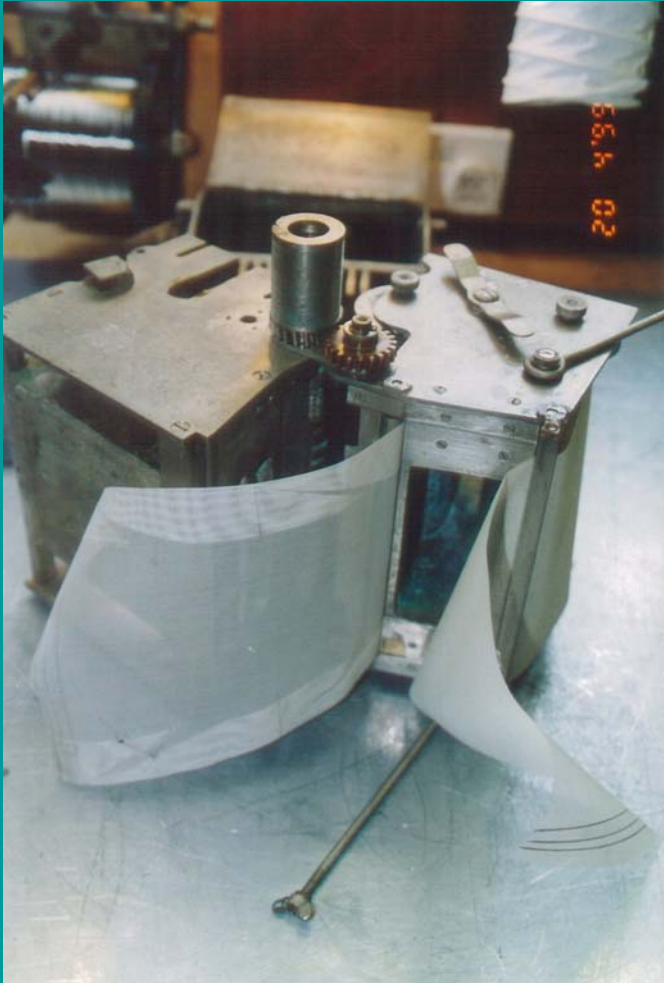
..and the rest of our stuff is even smaller!

# The areal difference between 280 and 200um mesh is almost double!



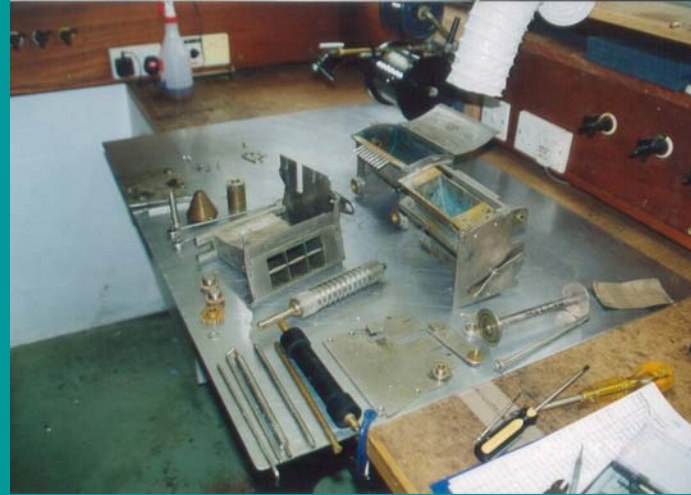
HELCOM guidelines use 100um mesh in WP-2 nets, and standard CPR only uses 280um silk – problem with database consistency!

Standard CPR has other features that are a disadvantage in the Baltic:



- silk advance continuous, subsequent sample overlap – problem with georeference applications
- silk sticky, difficult to wash off plankters for off-silk analysis
- on-silk analysis differs from HELCOM methods, and requires other instruments & skills

Differences that make the difference: CTG autonomous plankton sampler looks like the original, but:



- is less complicated to service and load
- can use any size standard nylon mesh
- does not advance the silk continuously, but takes snapshot samples
- logs start and end of each sample, facilitating exact georeference
- electrically operated: makes CPR body cleaner and less vulnerable as propeller & gear mechanism are omitted

## Experiments with "new" CPR equipped with CTG mechanism onboard r/v Aranda



-instrumentation simple and convenient to use, works reliably

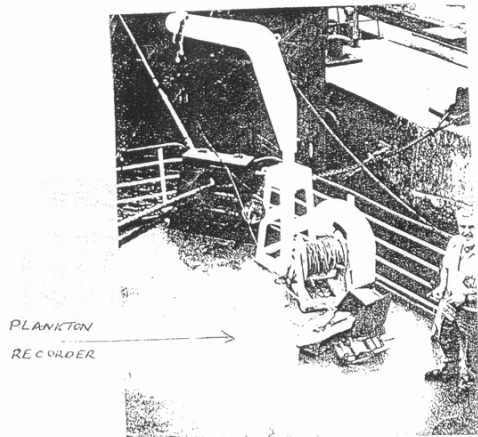
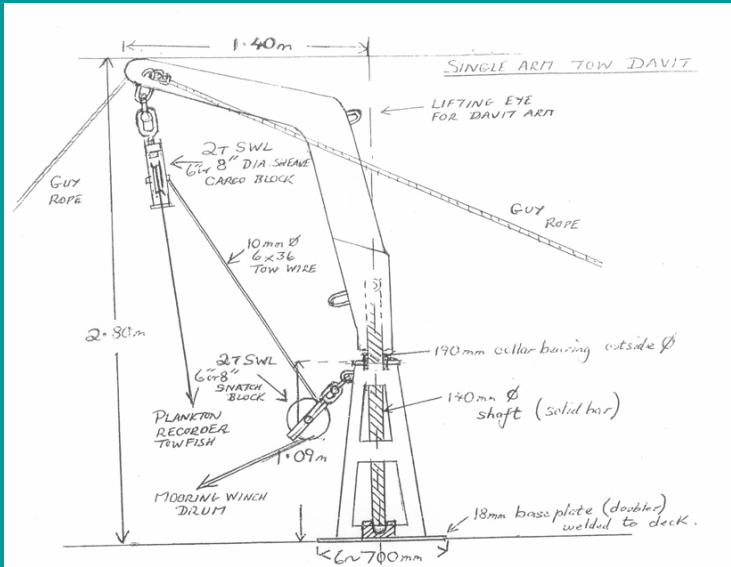
-vehicle has excellent hydrodynamic characteristics

-using 100um mesh, we get same order of magnitude abundances as with WP-2

-sample processing easy: identification, packing, washing plankters off the silk

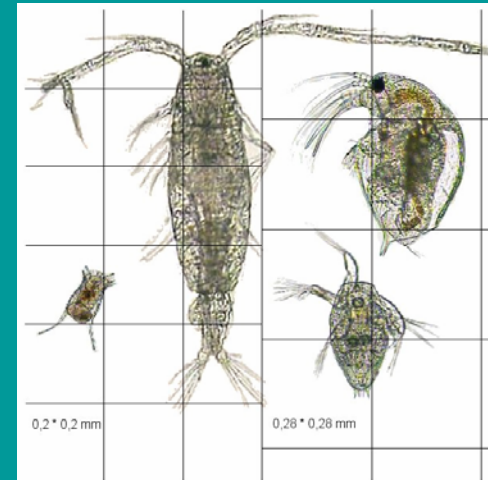
-due to easy loading and sample retrieval, short deck turnaround time

Before a SOOP CPR survey can commence, additional items must be secured:



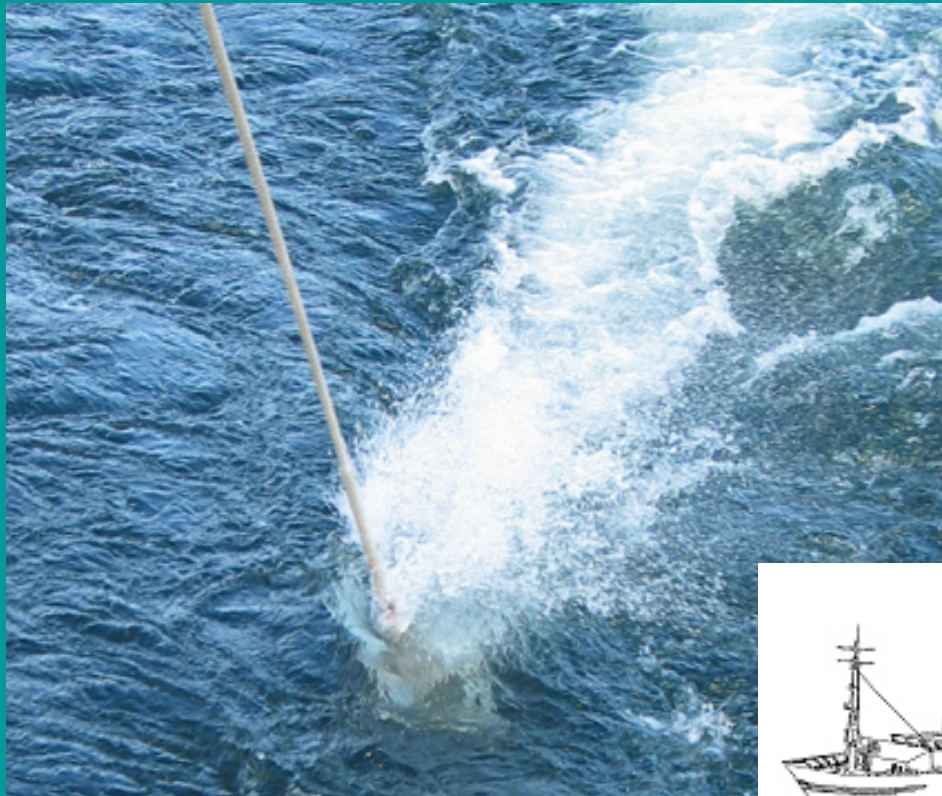
TOW DAVIT  
INSTALLATION AS  
ON RO-RO  
FERRY

- shipping company willing to tow the CPR
- tow equipment, such as davits, blocks, wire
- installation of the above, as well as maintenance & service



...and the most important thing – the samples have to be analysed!

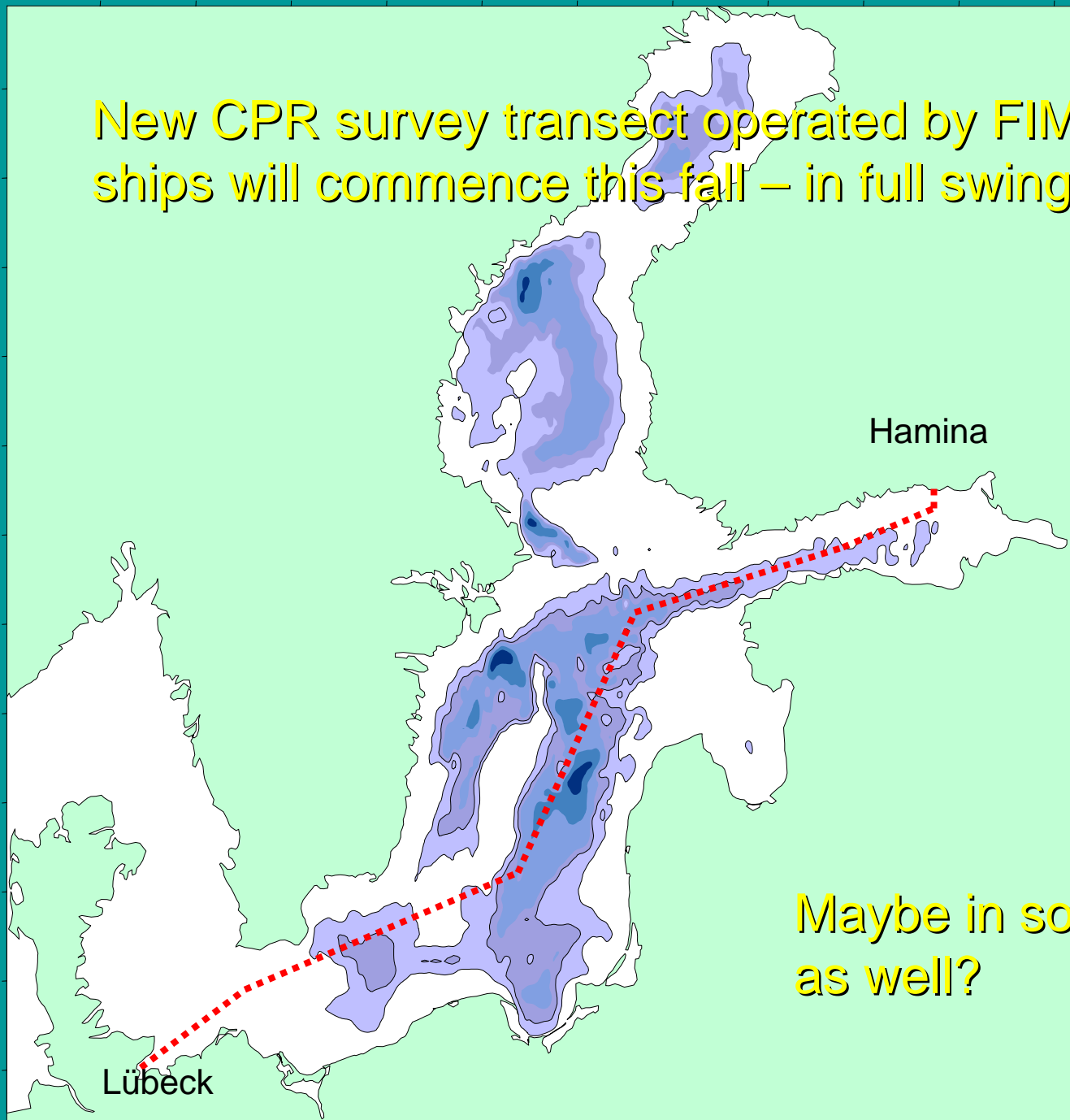
We now know what a successful CPR survey in the Baltic requires – the next question is how to find the resources to run it?



combining resources in future Baltic surveys is essential, as despite the SOOP approach the survey is expensive and labour-intensive to carry out by any one institute alone!



New CPR survey transect operated by FIMR on Transfennica ships will commence this fall – in full swing in 2005



Maybe in southern Baltic as well?