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Biodiversity, Bioprospecting,
Development: *Areas of Interest*

Robert E. Baier, Ph.D., P.E.
Biomaterials Graduate Program and
Industry/University Center for
Biosurfaces, University at Buffalo

SCIENCE

20 December 1968, Volume 162, pp. 1360-1368

Adhesion: Mechanisms That Assist or Impede It

An interdisciplinary approach relates present knowledge of adhesion to bioadhesional problems.

R. E. Baier, E. G. Shafrin, W. A. Zisman

AREAS OF RESEARCH IN BIOADHESION

DENTAL RESTORATIVES

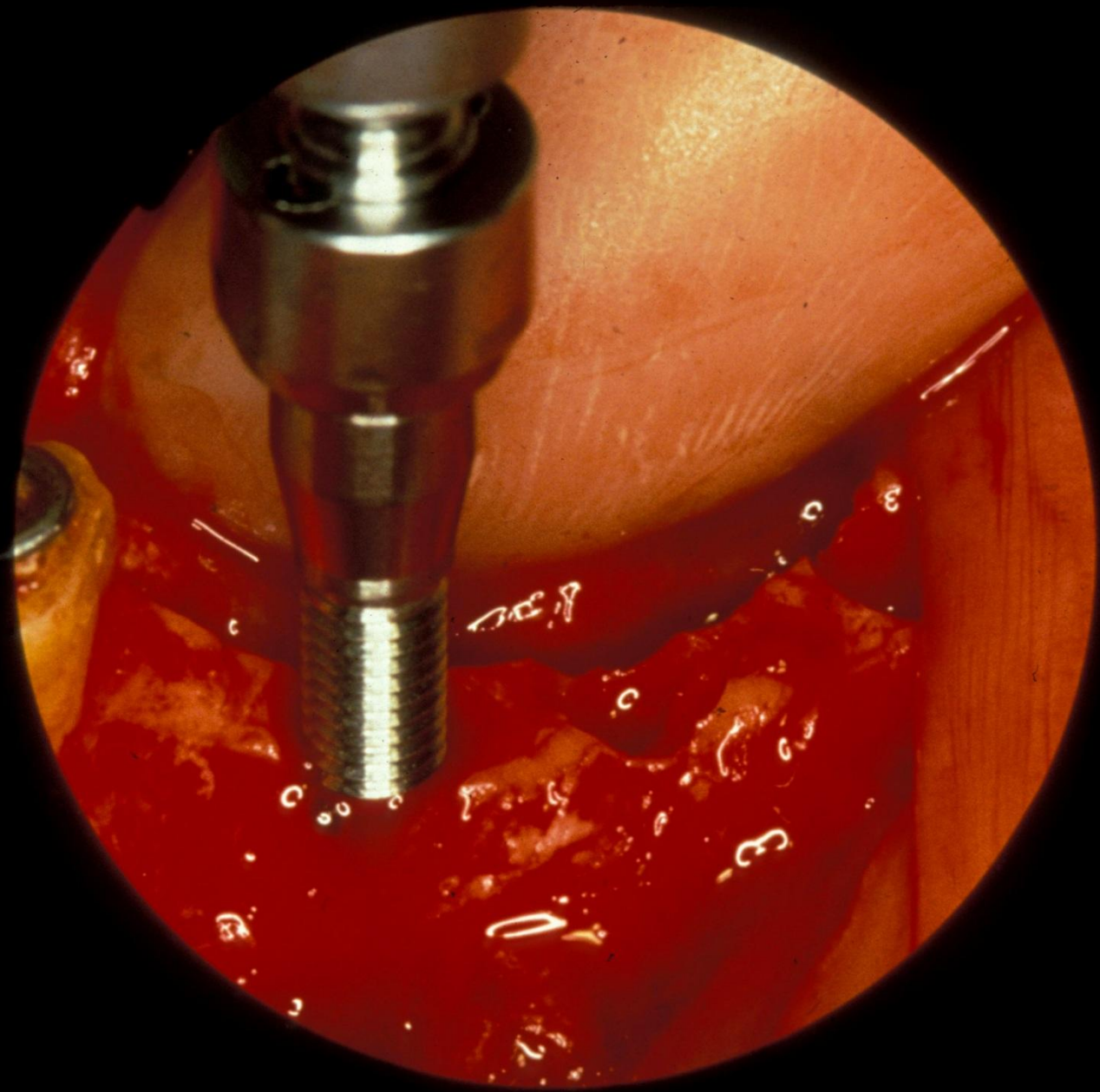
SURGICAL ADHESIVES

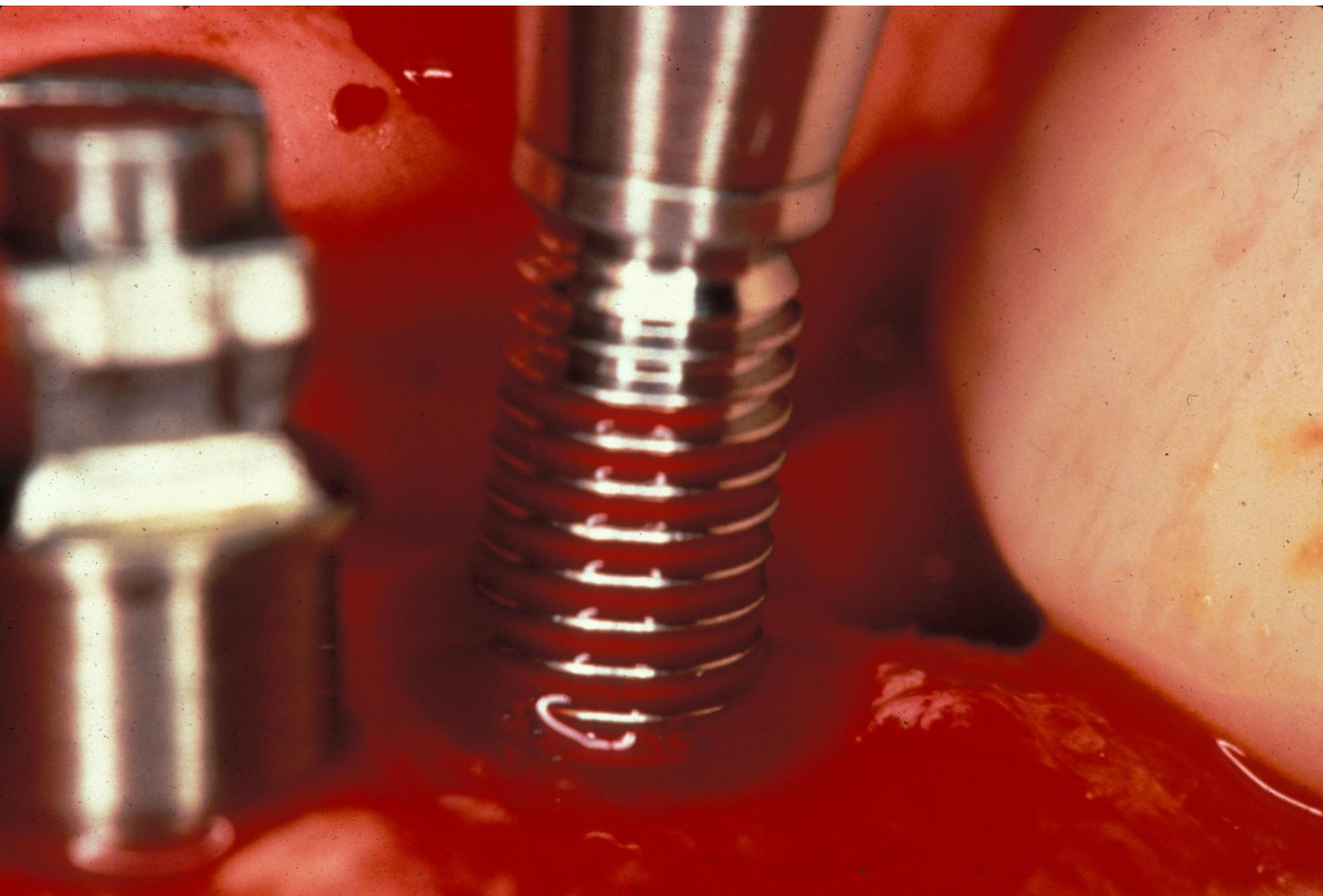
PROSTHETIC IMPLANTS

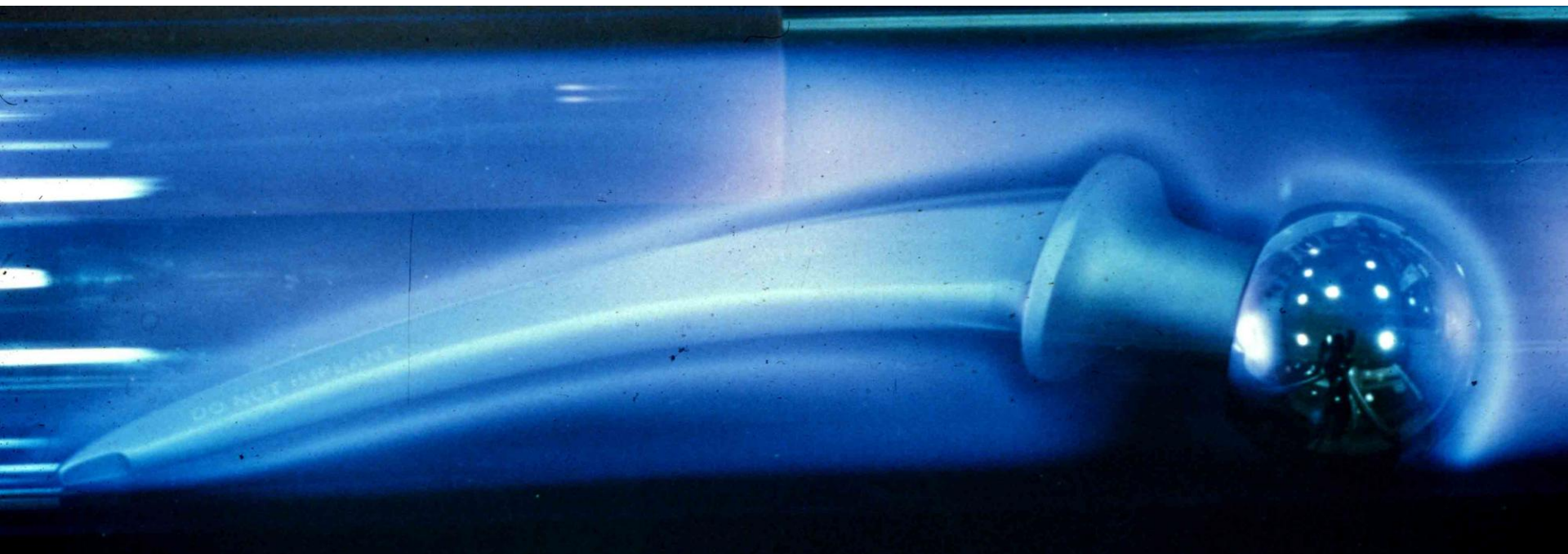
EXTRACORPOREAL CIRCUITS

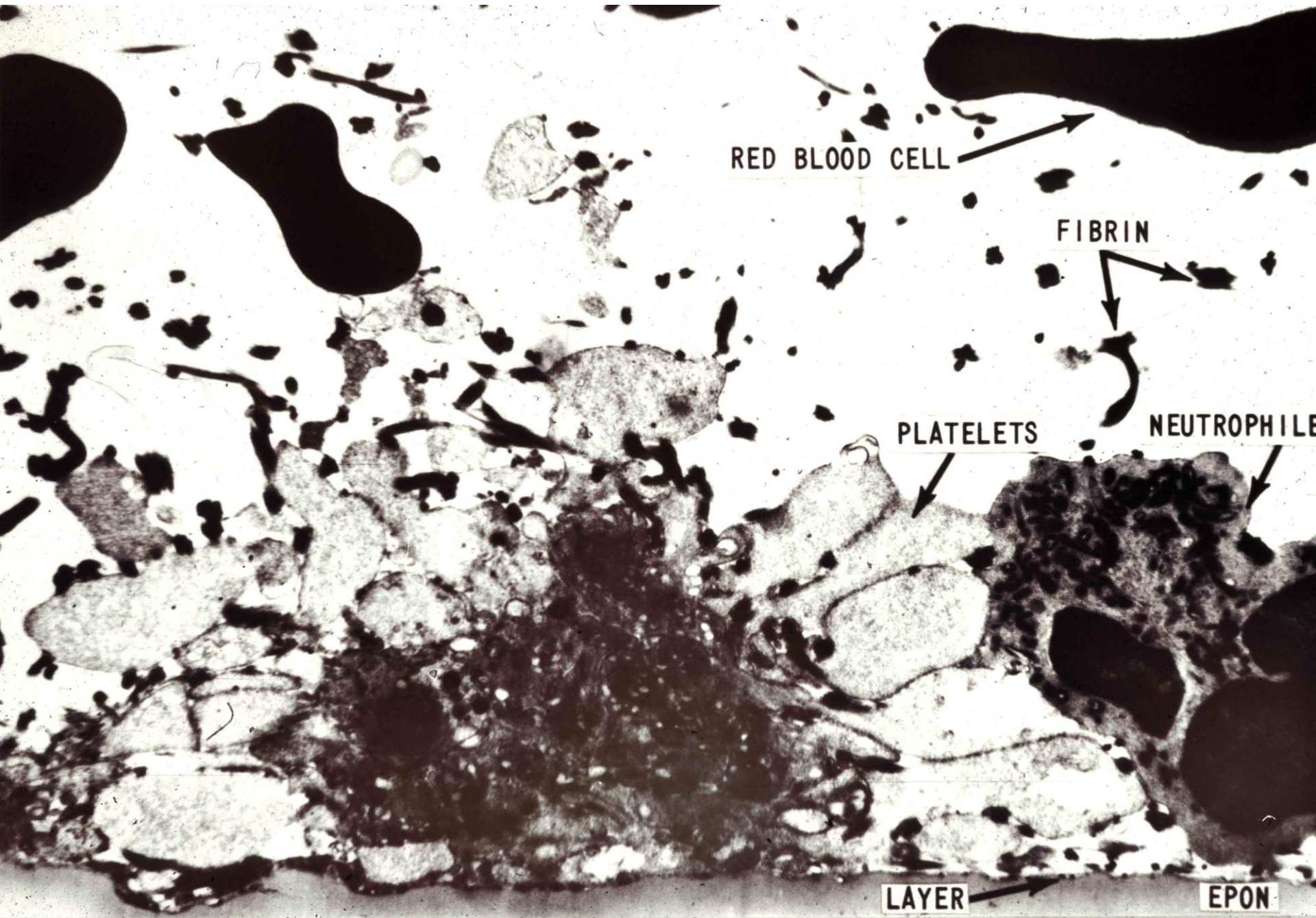
BLOOD CLOTTING

MARINE FOULING









RED BLOOD CELL

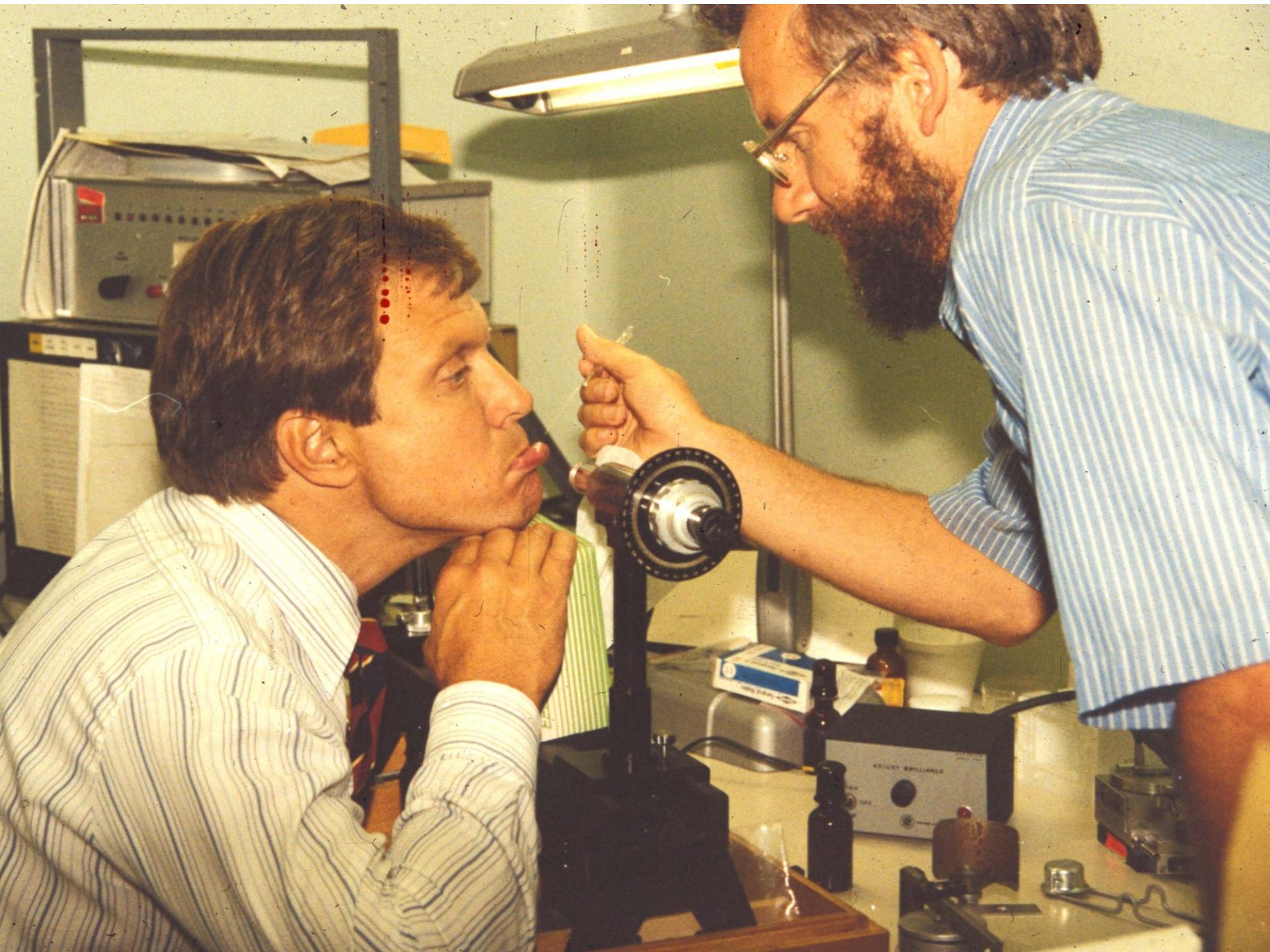
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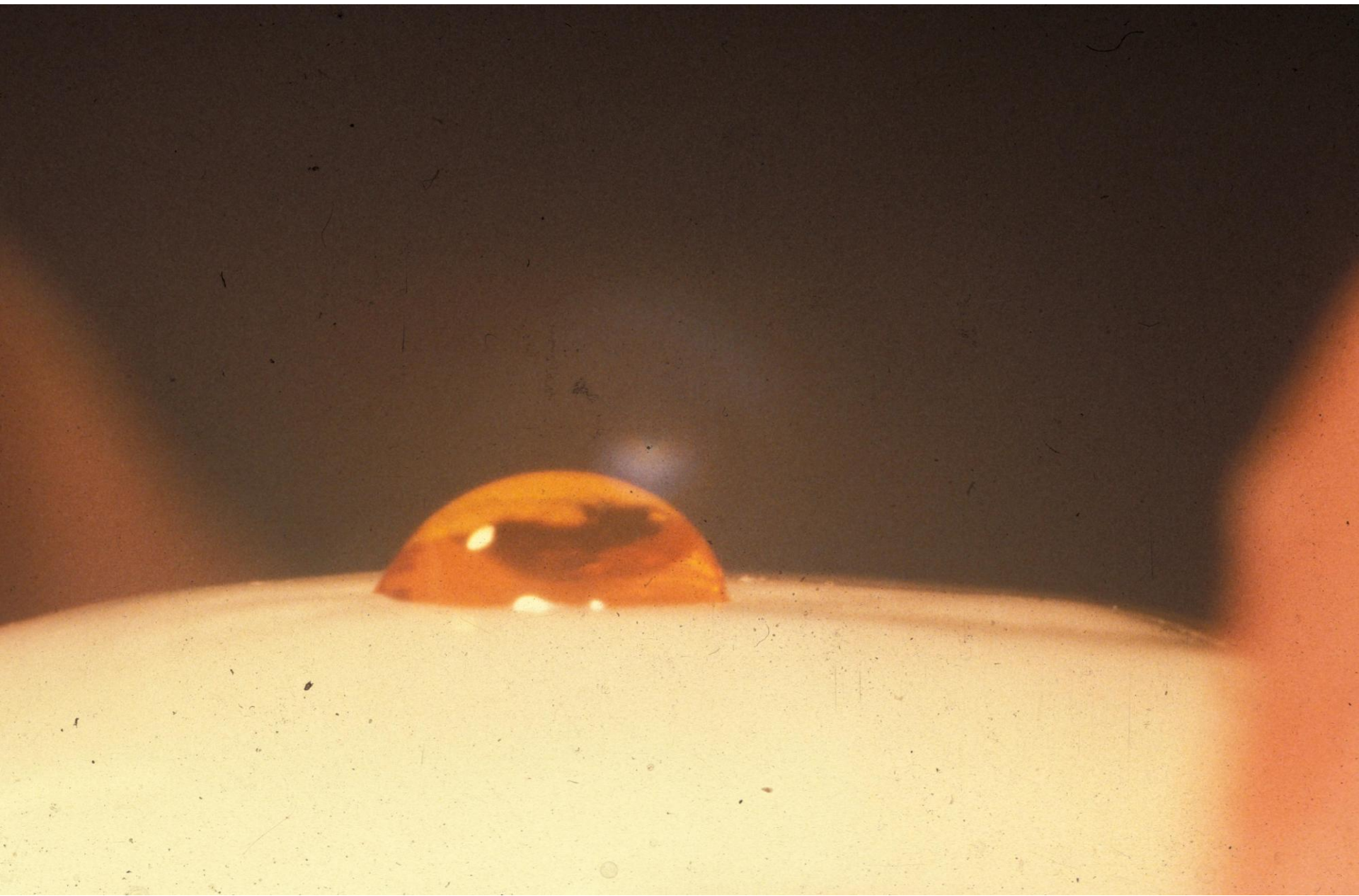
PLATELETS

NEUTROPHILE

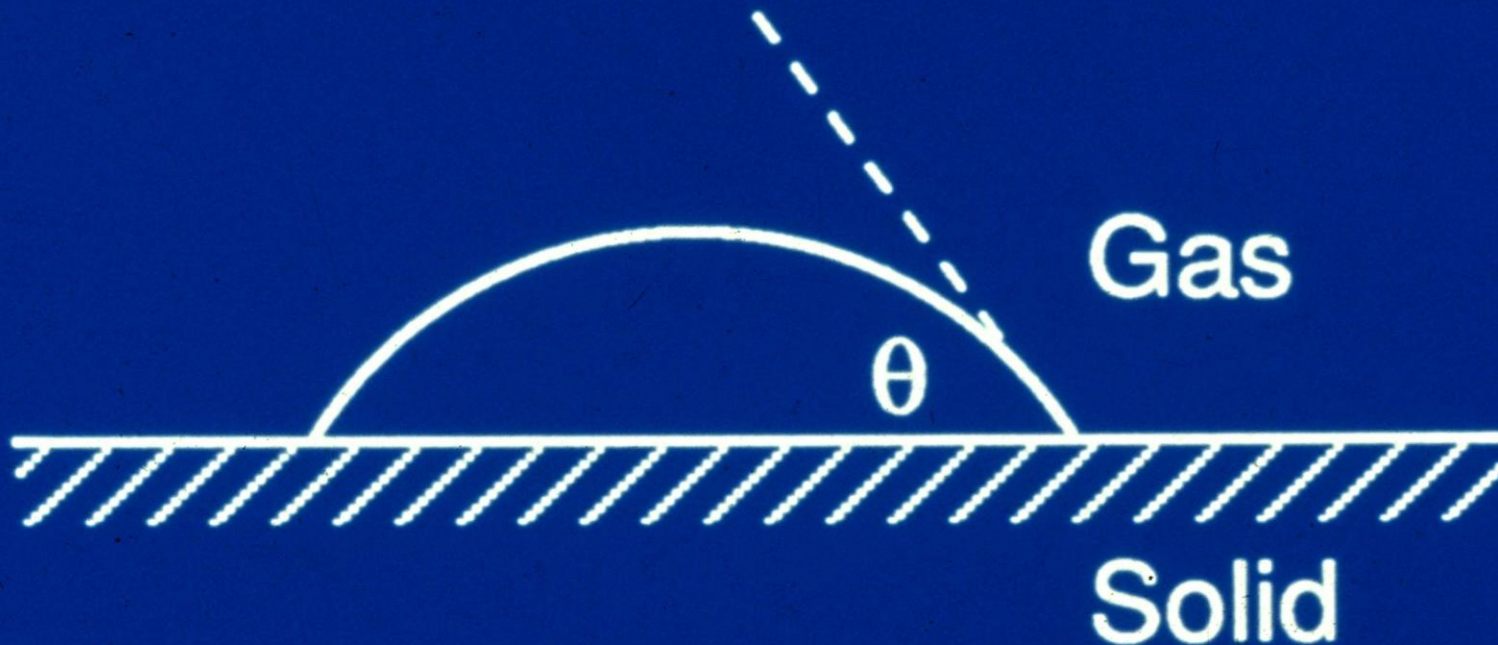
LAYER

EPON





Contact Angle (θ)



Diagnostic Liquids:

distilled water, glycerol, methylene iodide, bromonaphthalene, methylnaphthalene, dicyclohexyl tridecane, decane, octane



1 2 BACK FLIP 4 FAST SWIM 6 7 8 9 10

Marineland

ANYT... DO...
KANDU...



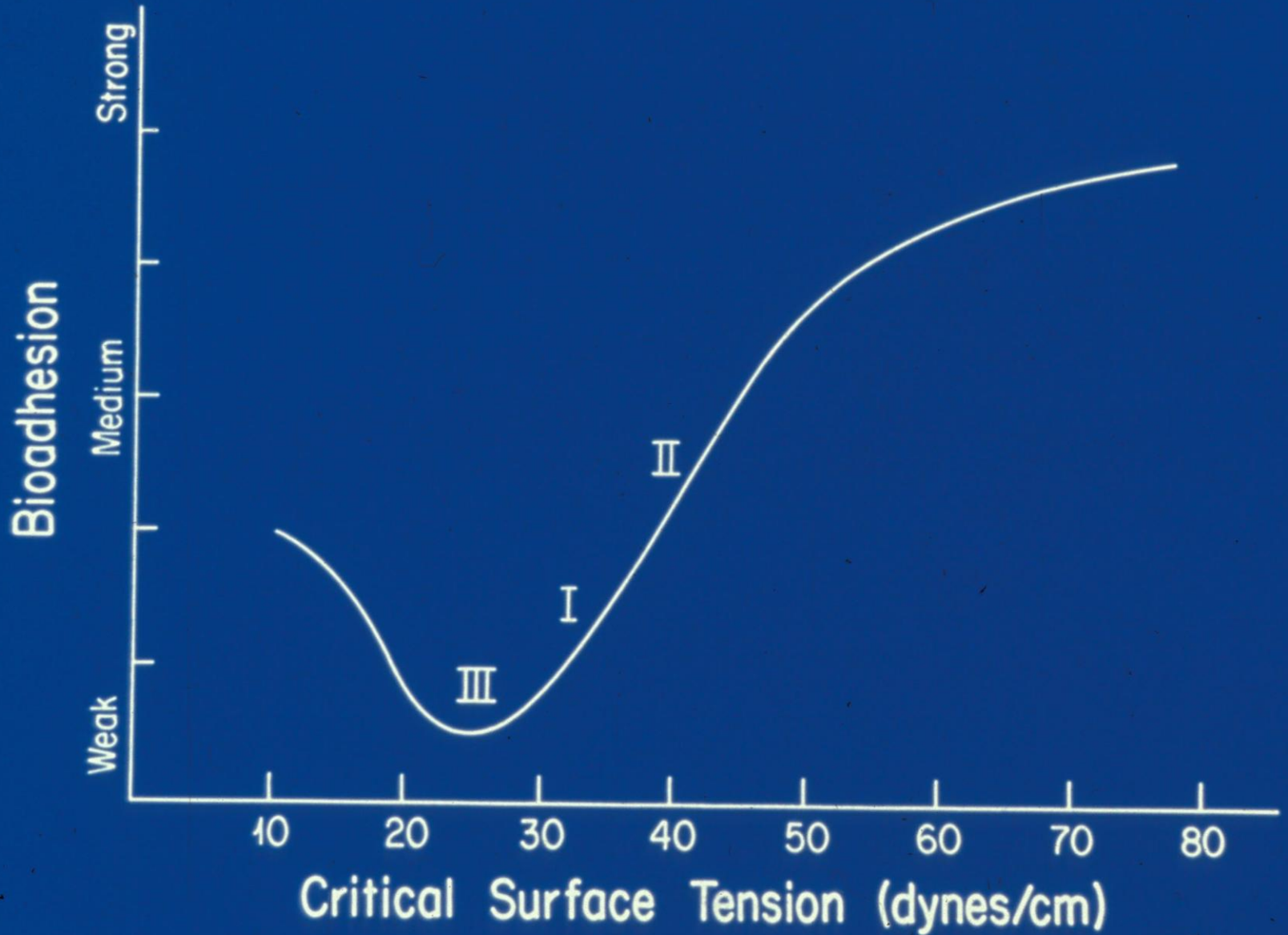
ANYTHING YOU CAN DO...

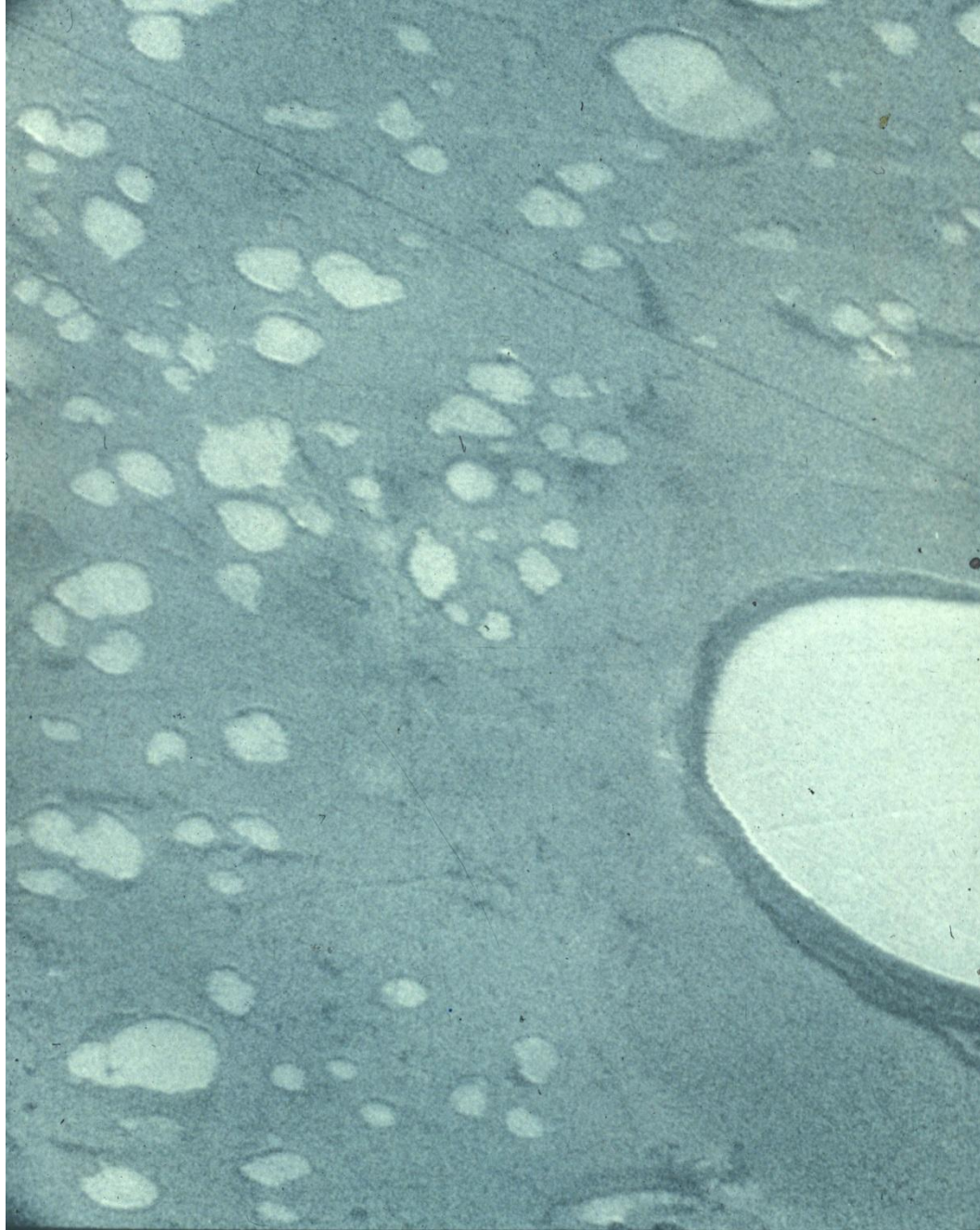
KANDU

1 2 3 BACK FLIP 4 5 6 7 8 9 10 FAST SWIM

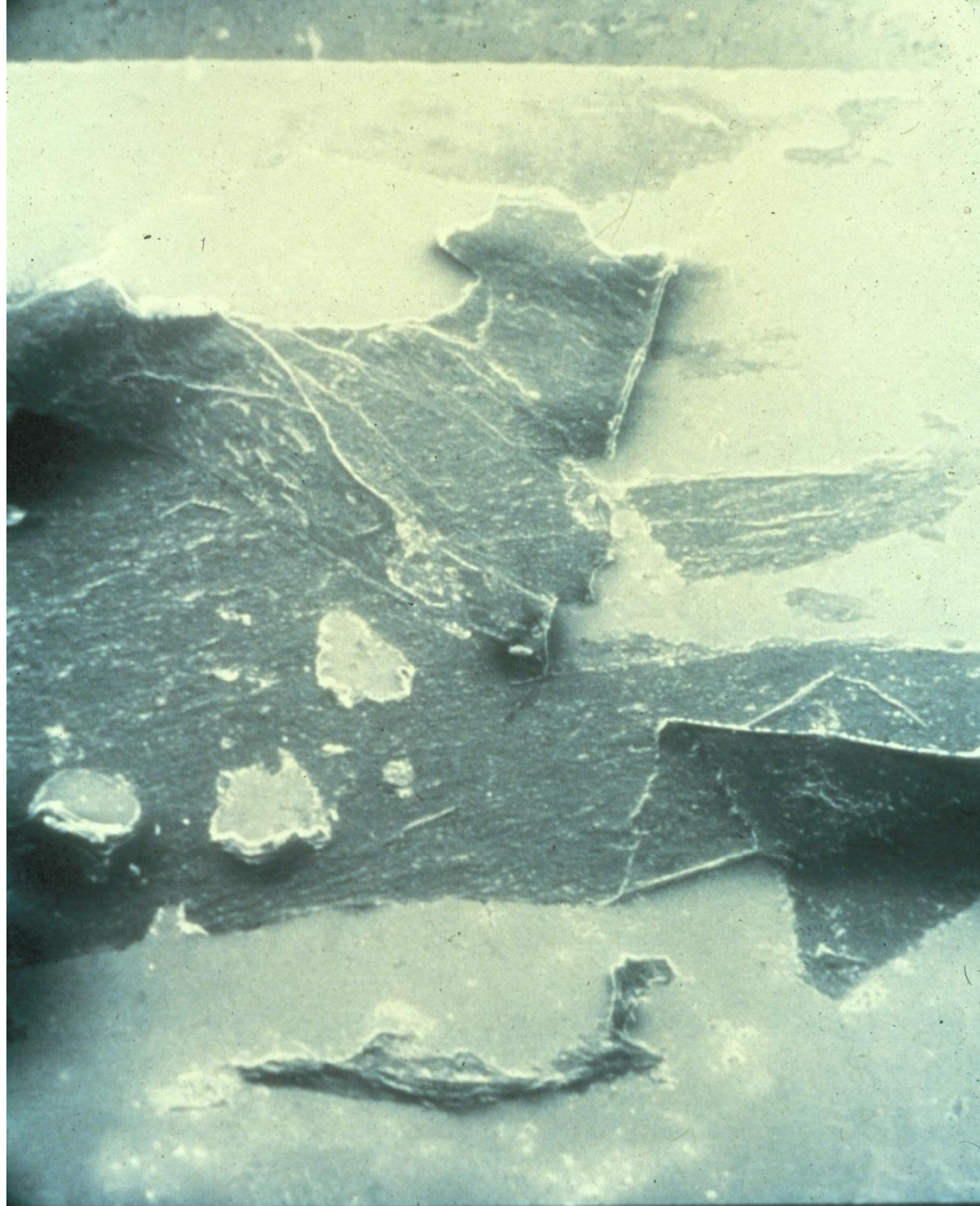
Sea Land







001.0 u H.
02-3 20.0 26 004 371.



100.0 μ H
02-1 20.0 18 222 335

ARRAY K01



Cardiomat-
40

Poly-
urethane

Cardiomat-40/
Polyurethane

RTV
3140

FG
Control

Test samples after 1 month in Atlantic Ocean

ARRAY K01



Cardiomat-
40

Poly-
urethane

Cardiomat-40/
Polyurethane

RTV
3140

FG
Control

Fouling Release Coating Trials

test site: Pearl Harbor (Hawaii)

duration: 1 month

post-exposure: all rods rinsed with WaterPik

The dominant fouling organism seen on these rods is *Hydroides elegans* (commonly called "tubeworms").



Test samples after 1
month in Pearl Harbor, HI

Hydroides elegans
[tubeworms]

Mechanical Factors Favoring Release from Fouling Release Coatings

ROBERT F BRADY JR* and IRWIN L SINGER

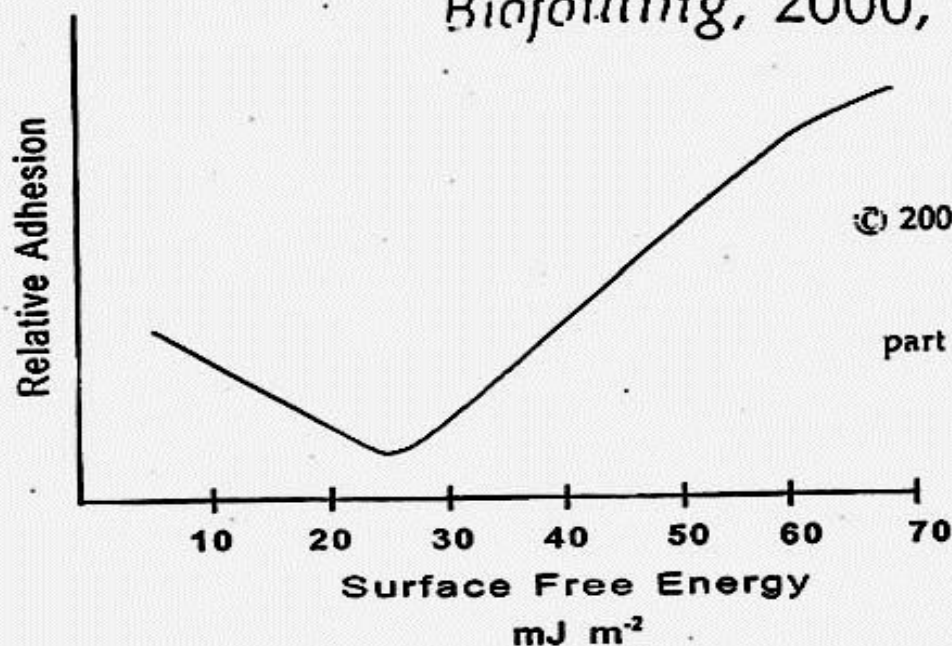
Chemistry Division, Naval Research Laboratory, Washington, DC 20375-5342, USA

(Received 29 June 1999; in final form 25 October 1999)

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R F BRADY AND I L SINGER

Biofouling, 2000, Vol 15(1-3), pp 73-81



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Printed in Singapore.

FIGURE 4 The empirical relationship between critical surface free energy ($\gamma_c \text{ mJ m}^{-2}$) and relative adhesion (dimensionless) *i.e.* the "Baier curve".

Nonpolluting Control of Biosurface Fouling

A workshop to define ecologically and environmentally
sensible approaches to keeping materials clean
in our oceans, lakes, and other aqueous systems.

June 28-29, 1990

Center for Tomorrow
State University of New York at Buffalo
North Campus, Amherst, New York



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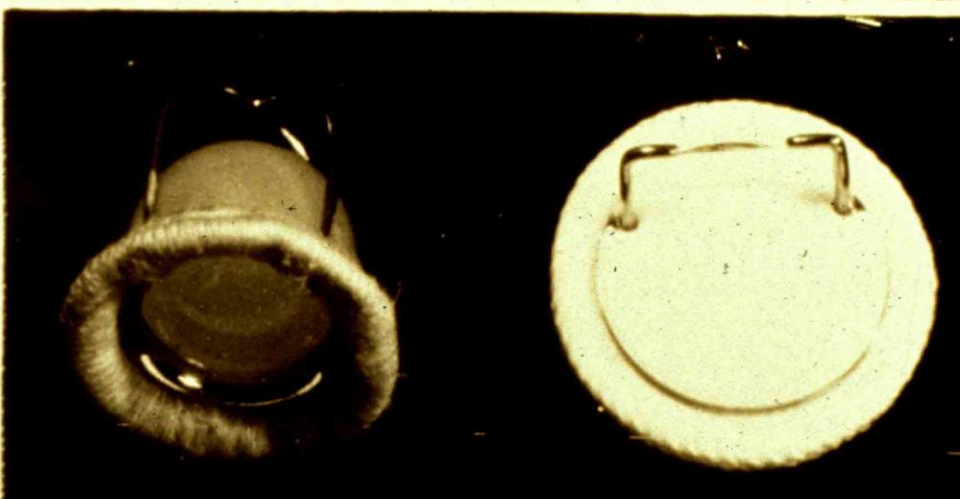
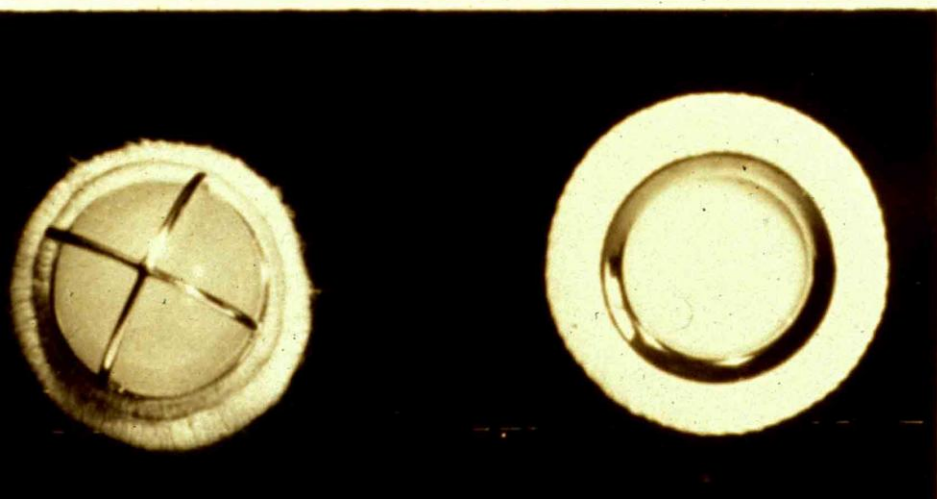
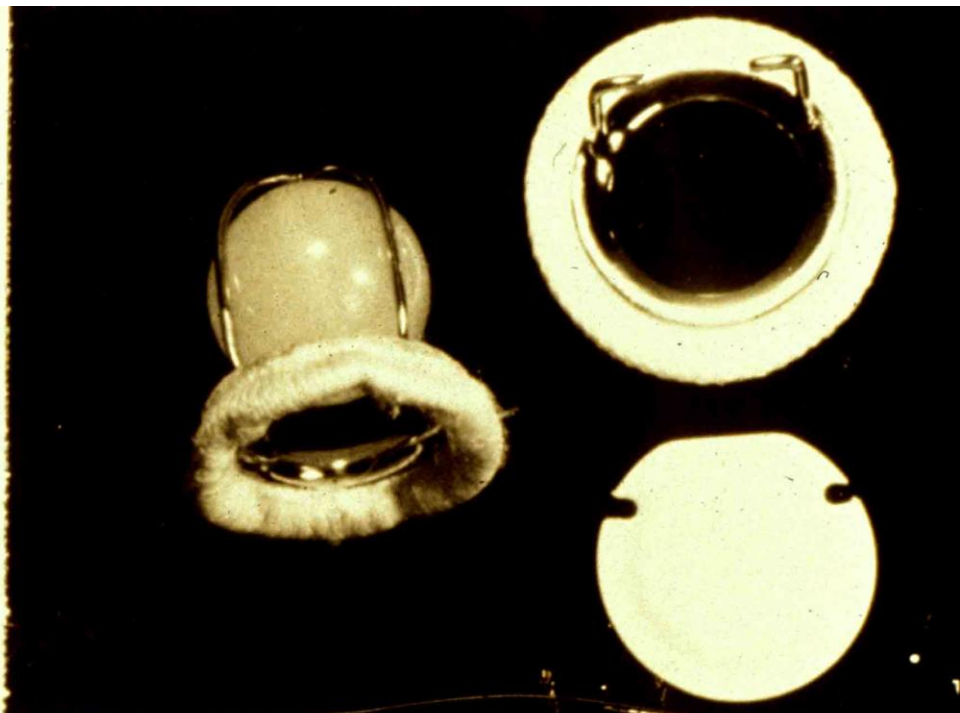
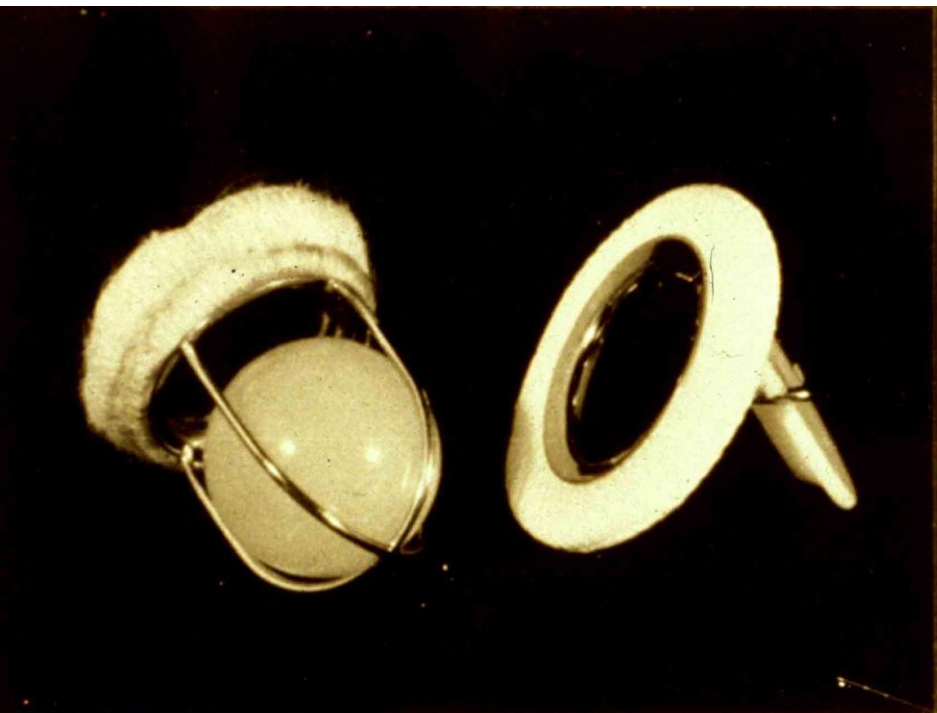
National Science Foundation (NSF)
Industry/University Center for Biosurfaces (IUCB)



Test panels at Dunkirk, NY (zebra mussel fouling)

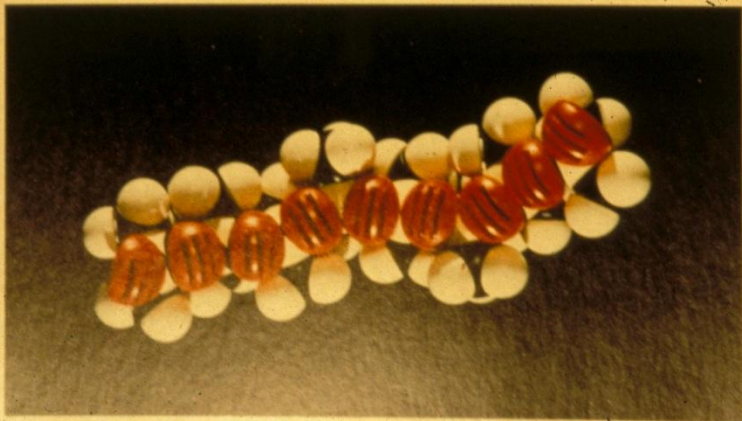
Left Heart Sac
103 days
Calf #36, "Clancey II"



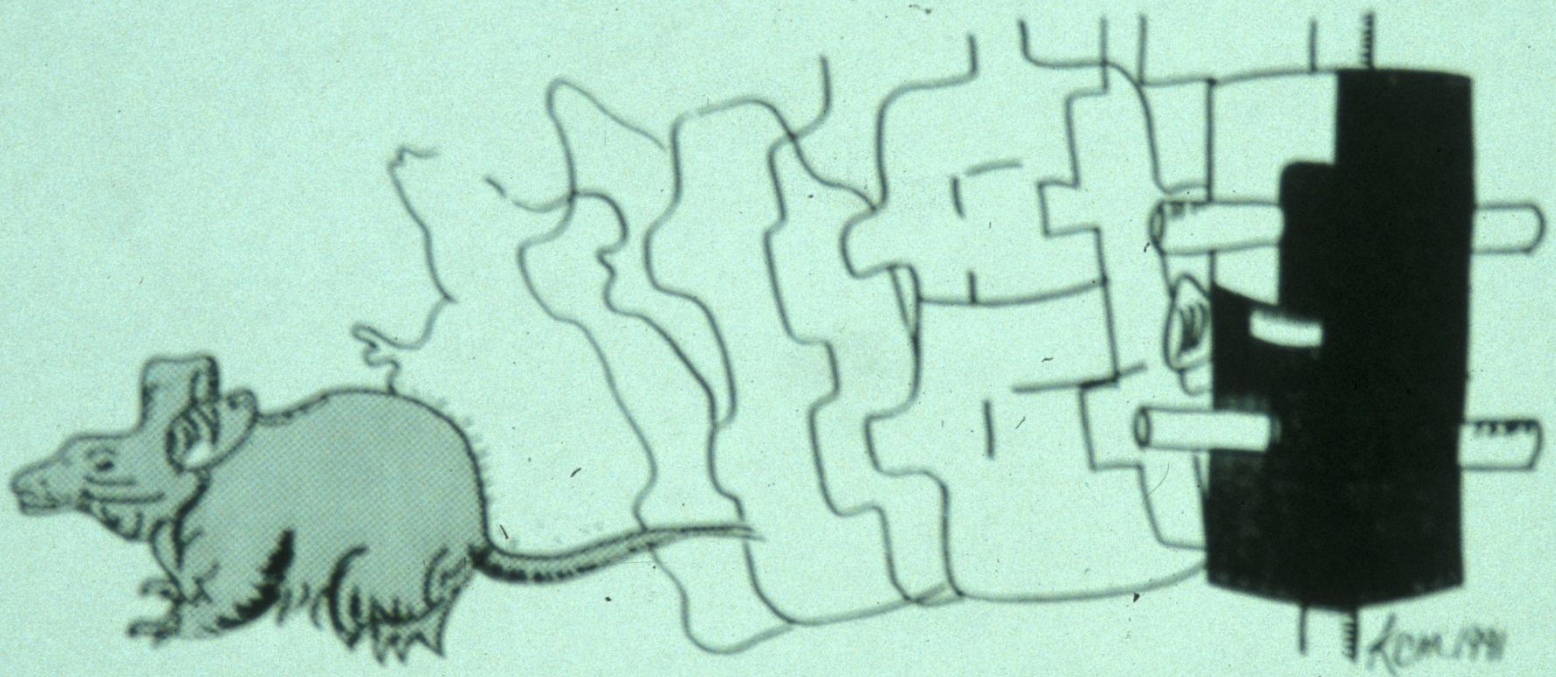


Methyl silicone

Polydimethylsiloxane







Biodiversity, Bioprospecting and Development Related Journals

- [Journal of Bioprocessing & Biotechniques](#)
- [Journal of Bioremediation & Biodegradation](#)
- [Journal of Bioequivalence & Bioavailability](#)
- [Journal of Biodiversity & Endangered Species](#)



Biodiversity, Bioprospecting and Development Related Conferences

- 3rd International Conference on Earth Science & Climate Change
- 3rd World Congress on Biotechnology
- 5th World Congress on Bioavailability and Bioequivalence: Pharmaceutical R&D Summit
- 3rd International Conference on Biodiversity & Sustainable Energy Development



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