Design of Larva Net

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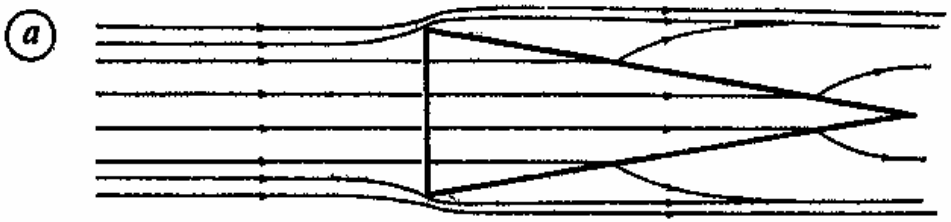
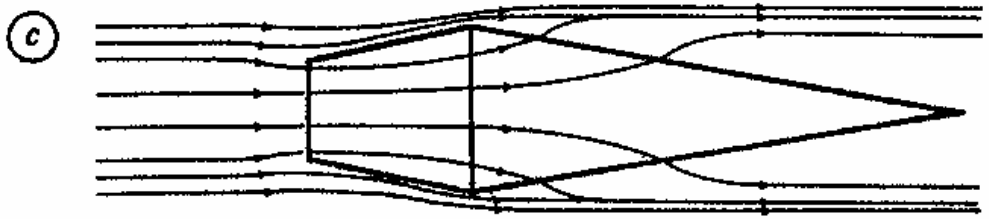
Design of Net (1) : net shape

Streamline patterns of some basic forms of net



Simple conical net

Conical net with porous collar



Conical net with non-porous mouth-reducing cone

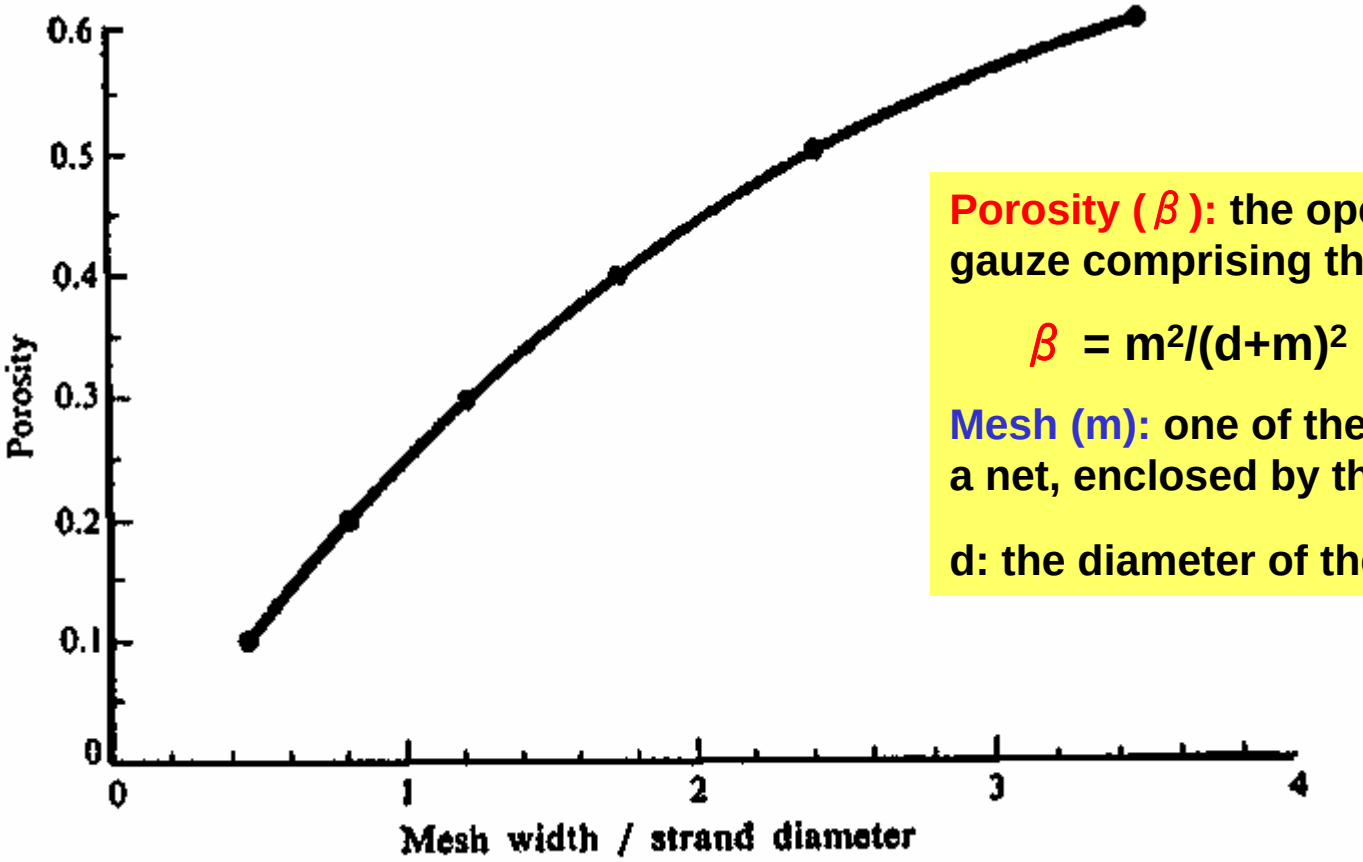
from Tranter and Smith (1968)

For quantitative sampling of plankton UNESCO recommend to use a net of type *b* or type *c*

Tranter, D. J. and Smith, P. E. 1968: Filtration performance, p. 27-56. *In* Zooplankton sampling. UNESCO, Paris.

Design of Net (2) : net size 1

from Tranter and Smith (1968)



Porosity (β): the open area fraction of the gauze comprising the filtering surface

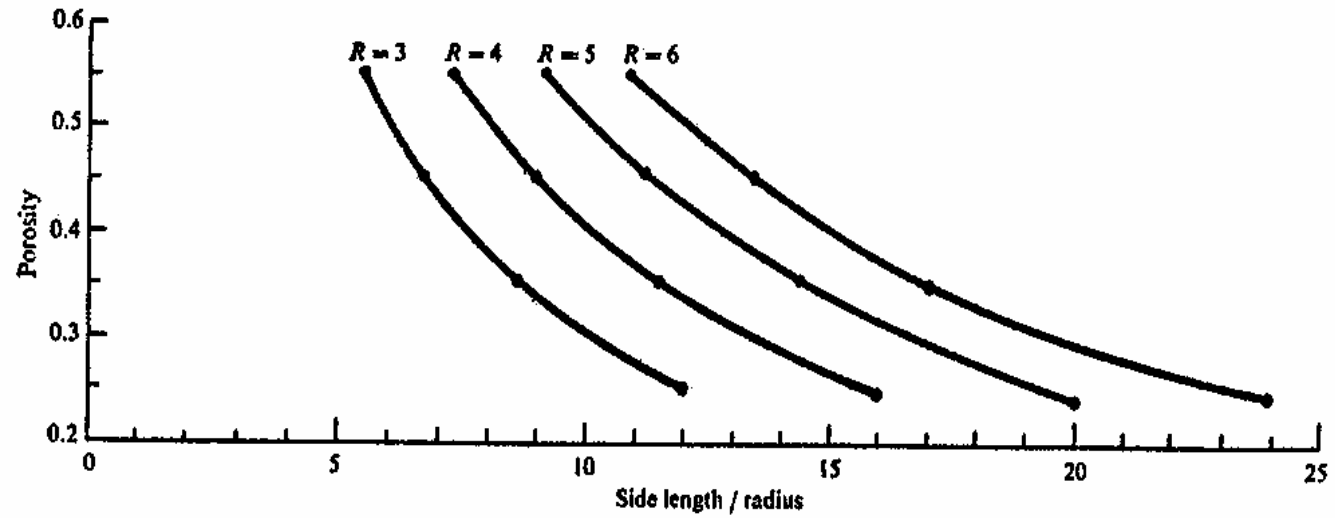
$$\beta = m^2/(d+m)^2$$

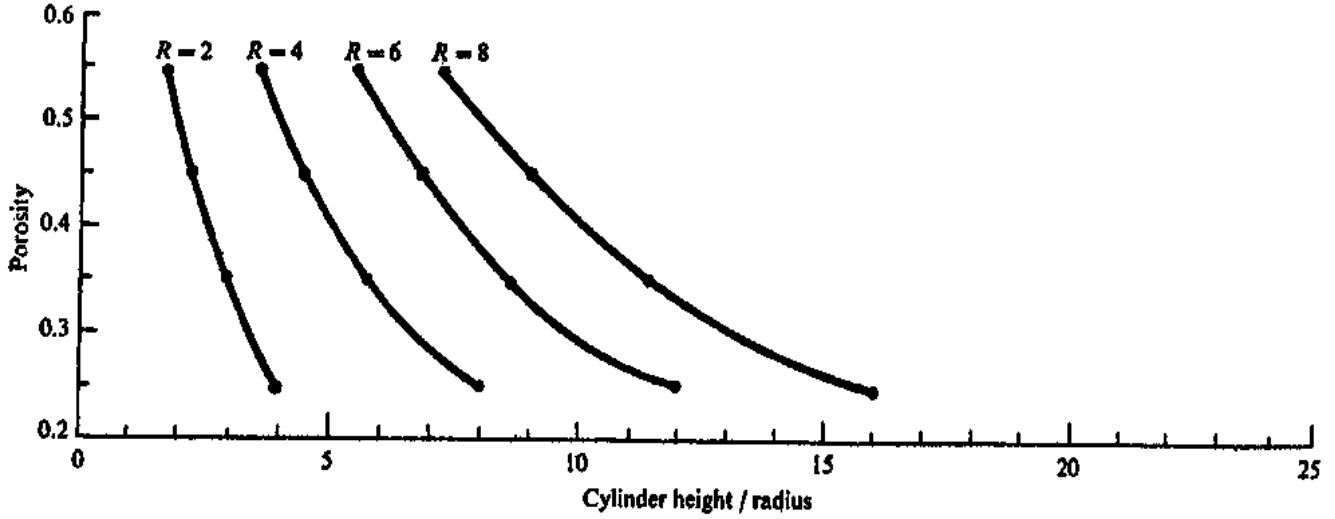
Mesh (m): one of the open spaces (pore) in a net, enclosed by the strands

d: the diameter of the strands

Relationship between mesh width/strand diameter and porosity

Design of Net (3) : net size 2





Open area ratio (R): the ration of the open area of a net to the area of its mouth

$R = a \cdot \beta \; / \; A$

A: area of the mouth

a: the porous area of the net

UNESCO recommends to design a net with R value more than 5 to reduce net clogging.

Clogging: the process by which the porosity and filtering area ratio of a net are progressively reduced by particles which adhere to the strands of gauze during filtration.