

Plasmamembrane :-

- * Schwann (1838) discovered it
- * Plowe Termed it Plasmalemma
- * Nageli & Cramer Termed cell memb
- * Robertson Termed Unit membrane.

* Average thickness 75 \AA

* Made of

- Protein $\rightarrow 60-75\%$
- Lipid $\rightarrow 20-40\%$
- Carbo $\rightarrow 1-5\%$

Model's of P. Memb -

(1) - Overton's model / suggestion \rightarrow (1895) -

\hookrightarrow P. Memb is composed of Lipid

(2) - Gorter & Grendel (1925) -

\hookrightarrow P. Memb is composed of Lipid bilayer

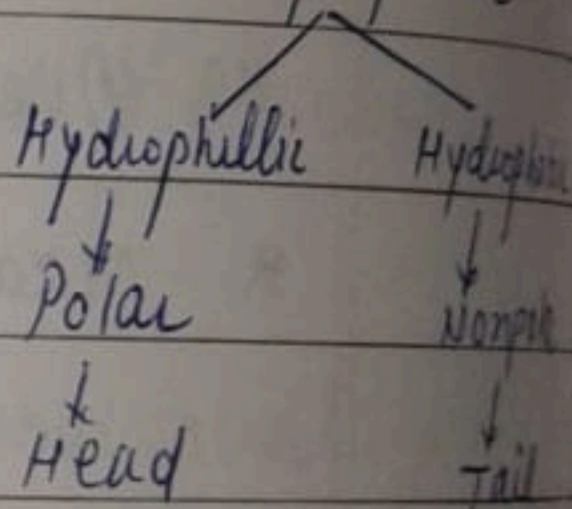
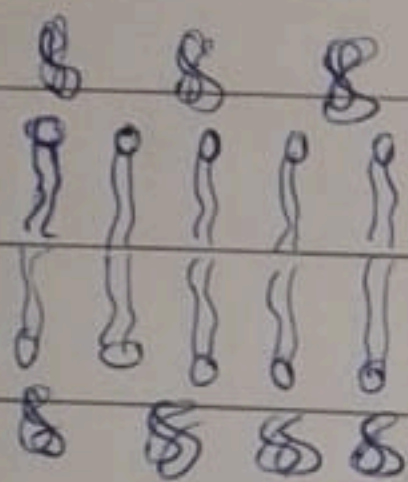
Transmembrane Protein can be visualized by
 "Freeze Fracture Technique."

(3) - Danielli & Davson Model → (1935) -

* Proposed 1st Lamellar Model (sandwich)
 ↳ Stable layered str.

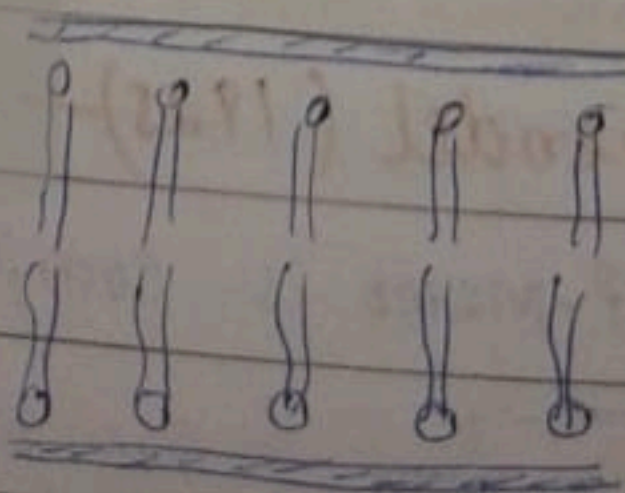
* P. memb has 4-layer → 2 Phospholipid (Bilayer)
 → 2 a globular protein layer on either side

→ Lipids molecules are amphipathic



(4) Robertson's unit memb Model (1959) -

- ↳ Lamellar Model (Dark-Light-Dark in e-microscope)
 - ↳ Phospholipid Bilayer (35Å)
 - ↳ β -extended protein on either side (20Å each)
- } 75Å



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"Protein Iceberg in sea of lipid"

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(5) Fluid Mosaic Model -

↳ Singer & Nicolson (1972) Proposed it

- * MOST accepted & MOST Recent model
- * A/C Model P.M is NOT solid but viscous fluid & Phospholipid & proteins are not uniform but as mosaic
- * Both Layer of phospholipid have different kind of Lipid & Lipid molecule can move side way in their layer.
This is called Fluidity.
- * Peripheral proteins are at the surface on both side & can be easily extracted by using soln of extreme pH & high salt conc. without affecting lipid bilayer.
- * Integral protein (70%) are across the lipid bilayer & form Transmembrane/Tunnel protein. cannot be easily extracted & Help in Transport. can be separated by using detergent that disrupt the hydrophobic interaction b/w phospholipid molecule.
- * In addition Glycoprotein & Glycolipids are + on exposed surface associated with both lipid & protein.

- * Animal P.M also contain cholesterol in b/w phospholipid molecule.
 - ↳ same molar amount as ↓
 - ↳ Major component of Animal Mem