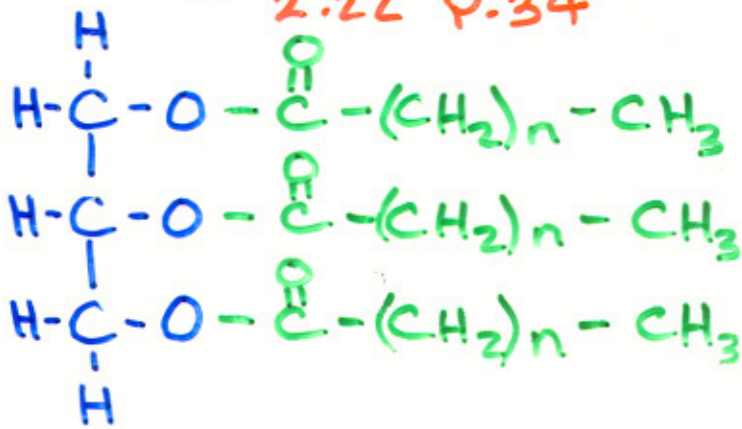
B. LIPIDS (FATS)

1. STRUCTURE:

MONOMERS — MACROMOLEC

1 GLYCEROL + 3 FATTY ACIDS $\underset{\text{HYDROLYSIS (BILE)}}{\overset{\text{SYNTHESIS}}{\rightleftharpoons}}$ FAT / LIPID

SEE fig 2.24 p.34
2.22 P.34



n 16-18

NEUTRAL FAT (TRIGLYCERIDE)

1 GLYCEROL $C_3H_5O_3$ 3 FATTY ACIDS (F.A.)

FATS ARE NON-POLAR ∴ INSOLUBLE IN H_2O

2. FUNCTION:

- ENERGY (SECONDARY SOURCE)
- ORGAN PROTECTION (CUSHION)
- INSULATES AGAINST HEAT LOSS

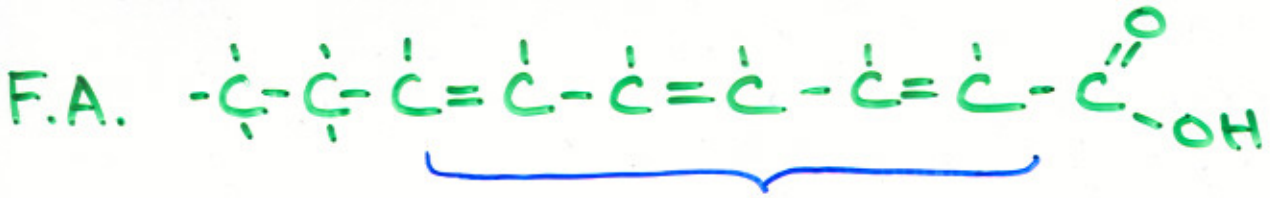
3. TYPES:

1. SATURATED — ANIMAL, SOLID, "FATS"
   HOLD MAX. AMOUNT OF H

F.A. $CH_3-(CH_2)_{17}-C(=O)-OH$ ( ) = -C-C-C-

ALL SINGLE BONDS

ii. UNSATURATED PLANT, LIQUID, "OILS"
ROOM FOR MORE H

F.A. 

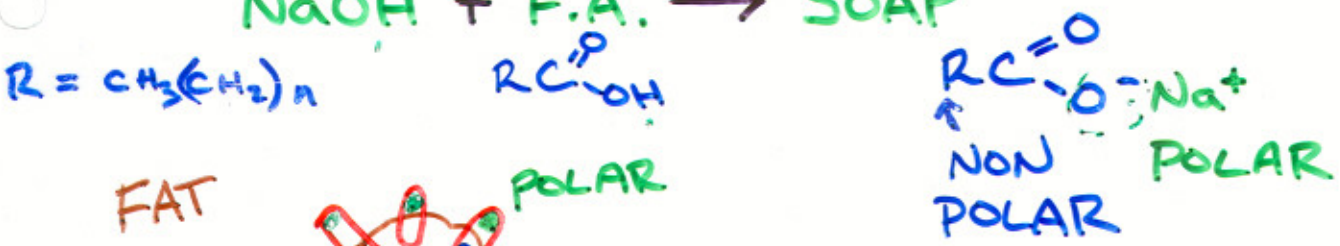
DOUBLE BONDS PRESENT

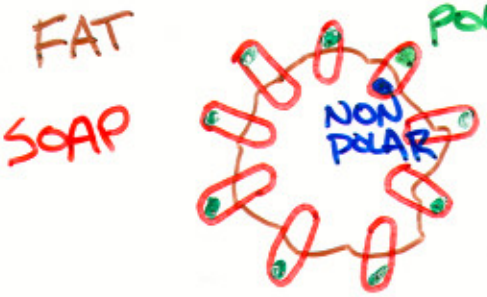
HYDROGENATION - H ADDED TO DOUBLE BONDS TO MAKE LIQUID OIL SOLID
eg. MARGARINE

4. VARIATIONS:

i. SOAP - AN EMULSIFIER, BREAKS UP FAT

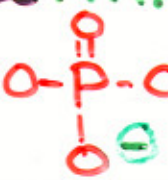
NaOH + F.A. → SOAP





→ WATER "RECOGNIZES" 'POLAR' COVERED FAT AS POLAR & WILL DISSOLVE

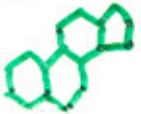
BILE, IN SMALL INTESTINE, EMULSIFIES FAT LIKE SOAP DOES.

ii. PHOSPHOLIPIDS (LECITHIN) SEE fig. 2.27 (2.23) p. 35
MADE OF 1 GLYCEROL, 2 F.A. +
1 PHOSPHATE GROUP 

FOUND IN CELL MEMBRANE

POLAR HEAD (P GROUP) + NON-POLAR TAILS (R.F.A.)

iii. STEROIDS fig. 2.28 p.36
2.24 p.35



FOUR FUSED RINGS SIMILAR TO CHOLESTEROL PRECURSOR

- HORMONES eg TESTOSTERONE, ESTROGEN, ALDOSTERONE
- STRUCTURAL KEEP CELL MEMB. "FLUID"