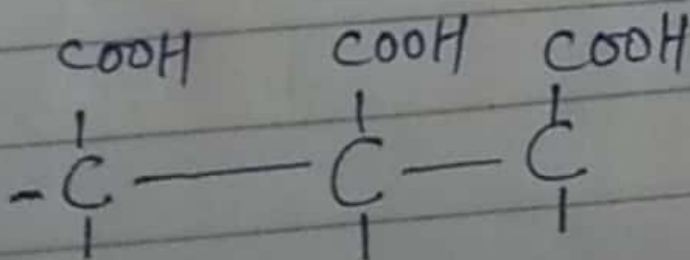


(continued..... Camphor)

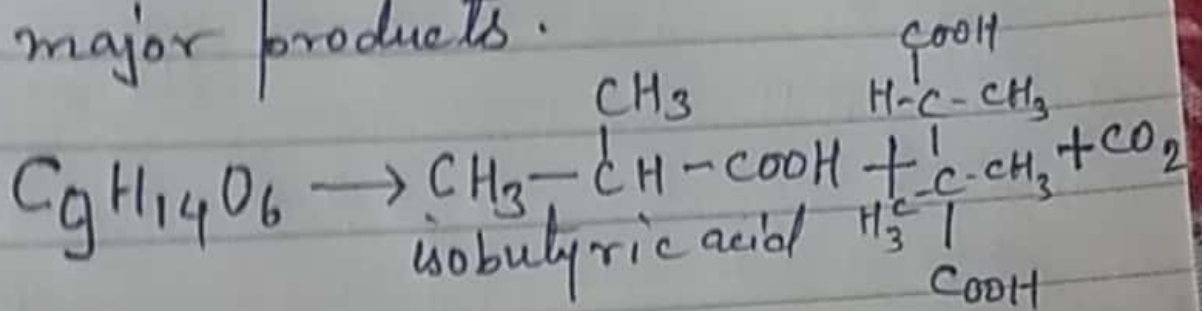
8. Structure of Camphoric acid :-

(i) Since it is found to be a saturated tricarboxylic acid, its formula $C_9H_{14}O_6$ may be written as $C_6H_{11}(COOH)_3$ and hence its saturated parent hydrocarbon will be C_6H_{14} . Now since C_6H_{14} corresponds to the general formula (C_nH_{2n+2}) for an acyclic compound, Camphoric acid must be acyclic.

(ii) Since it does not lose CO_2 under normal conditions, its three $-COOH$ groups are attached to three different C-atoms.

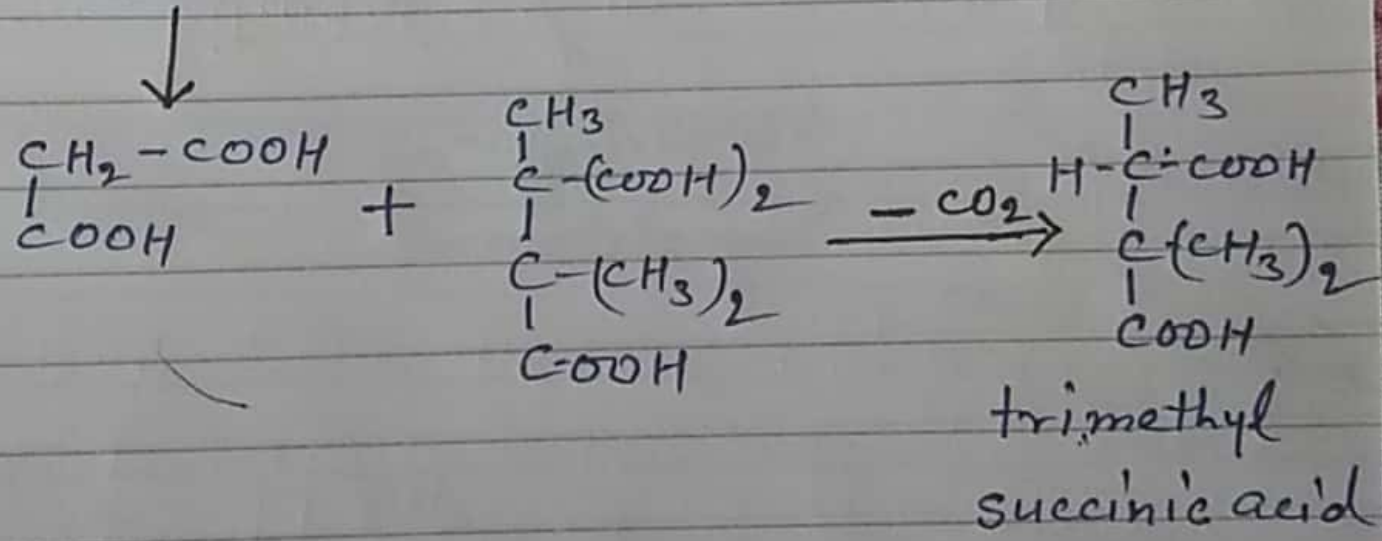
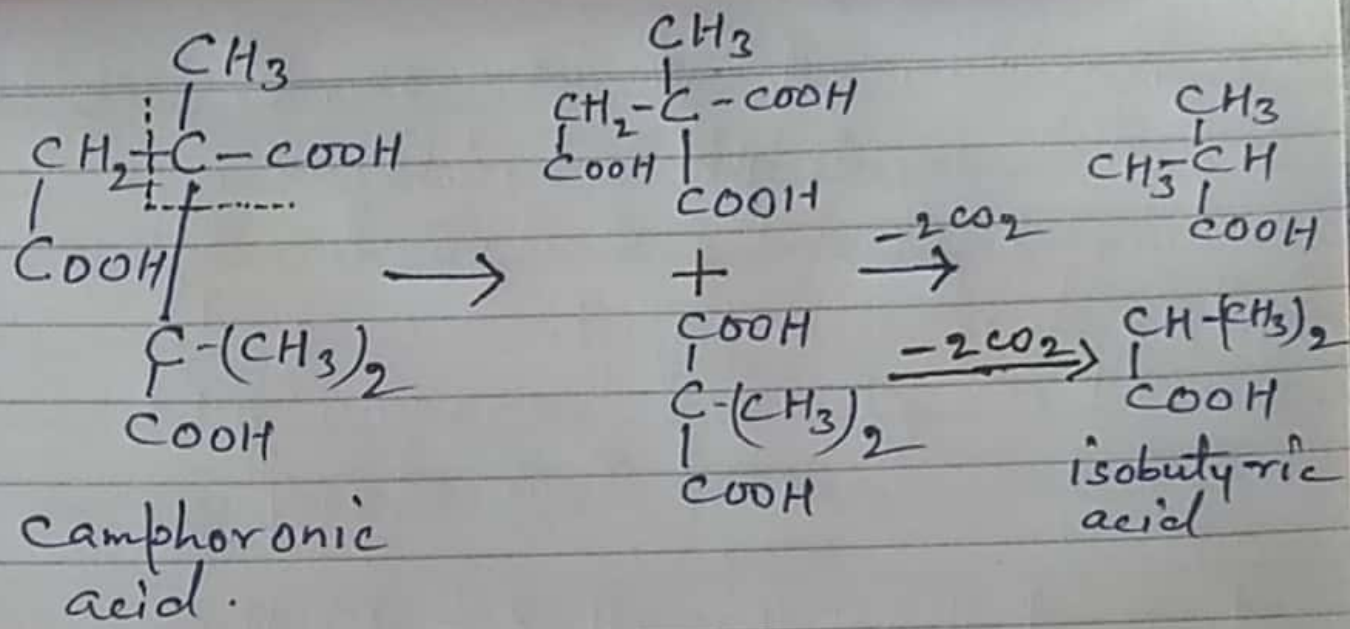


(iii) The exact st. of camphoronic acid is established by its distillation at atmospheric pressure when it gives isobutyric acid, trimethyl succinic acid and CO_2 as the major products.

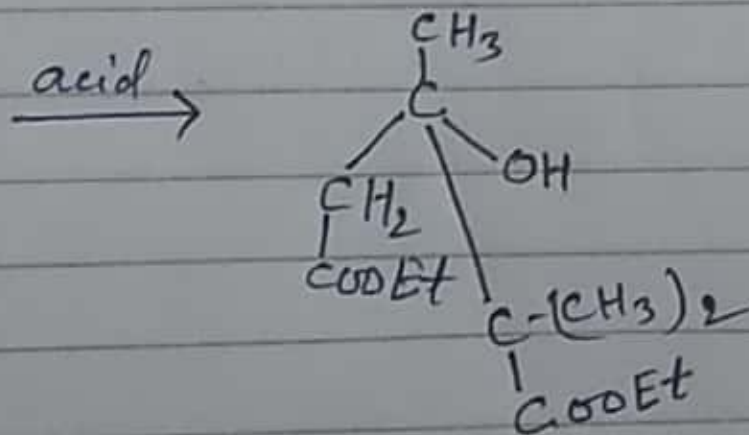
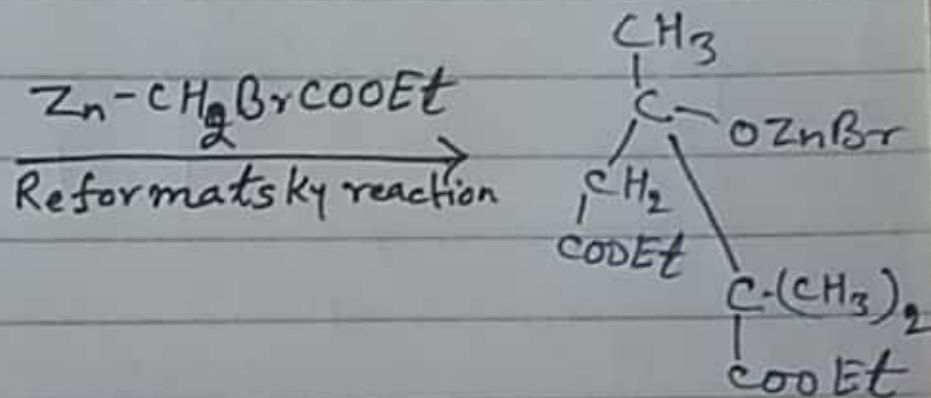
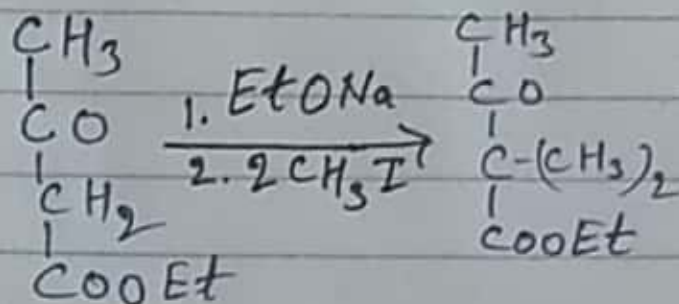


To explain the above degradation, Bredt in 1893 suggested that Camphoronic acid is —
 α, α, β - trimethyl tricarballic acid

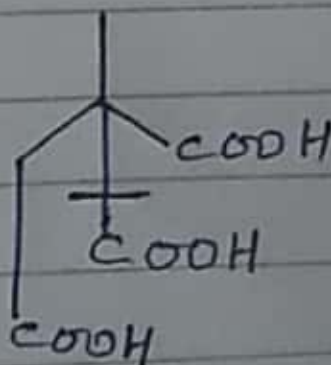
(3)



(IV) Bredt structure of camphoronic acid is proved by Synthesis
(Perkin Jr. and Thorpe, 1897)



1. PCl₅
2. KCl
3. HCl



(±) Camphoronic acid: