1. The catalyst used for dehydration of castor oil is not removed from the oil after the dehydration is over. It remains in the DCO in the form of an oil soluble intermediate ester.

2. This oil soluble ester of catalyst and oil is not washed by water. Hydrolysis of this ester even with boiling water is a very slow reaction.

3. Side reactions occurring during the preparation of dehydrated castor oil such as, hydrolysis of the oil, decomposition of glycerides, estolide formation, isomerization and polymerization have some effect on the thermal polymerization of DCO. But the catalyst, used for dehydration of castor oil is found to be the most influencing factor.

4. With different DCO samples the rate of thermal polymerization is not the same because intramolecular reaction occurred to different extent in different samples. The catalyst used for dehydration of castor oil is found to influence the tendency of the oil for intramolecular reaction.

5. Tendency for intramolecular reaction is reduced if the polymerization of the oil is carried out at lower temperature.
6. The tendency for intramolecular reaction is decreased also in the oxidative polymerization.

7. The relation between log viscosity and polymerization of an oil is not linear when intramolecular reaction is prominent. In such cases a very rapid increase in viscosity is found to occur in the initial stage of polymerization.

8. Samples produced by intramolecular reaction show high refractive index.

9. The molecular complexity of the oil having more of intramolecular reaction is not high. Acetone number of such samples when compared with truly polymerized samples is very high.

10. Percentage of conjugated isomer falls very rapidly during the intramolecular reaction.

11. Samples with prominent intramolecular reaction show a peculiar type of absorption curve, which is having maxima at 210 μm. The magnitude of the maxima is proportional to the extent of intramolecular reaction.

12. Gelation test show that the DCO having tendency for intramolecular does not gel even after heating the oil at 310°C, for three hours. Gelation time for other type of DCO is 45 minutes.
13. Film properties of polymerized samples are greatly impaired when intramolecular reaction occurred. Films of such oils show large amount of tack, least hardness, least water resistance, least alkali resistance and are easily affected by solvents such as benzene and acetone.

14. Large amount of cyclization of the oil occur during the intramolecular reaction, which in turn has a profound effect on the colour and film properties of the oil.

15. The fatty acids obtained from polymerized DCO, wherein intramolecular reaction has occurred, are partly soluble in methanol and are not capable of forming urea adduct, showing thereby the ringed structure of the product.

16. Fractionation of polymerized product by isopropyl alcohol shows that more percentage of low molecular weight fraction is present in the product of intramolecular reaction. Fractional distillation of the methyl esters, obtained from such polymerized product, confirm this observation.

17. Fatty acids from different DCO samples show similarity of physical and chemical property. The study of polymerization of methyl esters and alkyd resins confirm this fact. The diversity of rate of polymerization
in the case of glycerides is therefore, due to the influence of the catalyst.

18. Introduction of -OH group in the benzene ring of the catalyst suppressed the tendency for intramolecular reaction. (Thus benzene sulphonic acid and m-sulphobenzoic acid showed prominent intramolecular reaction which was absent in the case of phenol sulphonic acid and sulphosalicylic acid).

19. Tendency for intramolecular reaction increased in samples with high acid numbers. Free fatty acids (m CO) also favoured gelatination estolide formation.