

CONCLUSION

We have studied the formation of some cyclopropane systems by an easy selective method where PMS/anh. K_2CO_3 was used as a basic reagent for alkylation of 1,2-dihaloalkanes. The reagent afforded fairly good yield of cyclopropanes. Moreover the work out procedure was comparatively easier and less drastic. In addition to this, the reagent is very inexpensive (Chapter - II).

The catalytic effects of various metals, metal oxides and metal complexes have been studied for the carbenoid addition reactions under thermal and irradiation processes. It was observed that the complex metal catalysts were more effective than the other catalysts and irradiation considerably reduced the reaction time (Chapter - II).

The second part of the work involved ring opening of cyclopropane derivatives which were much more important for the determination of geometry of the resulting compounds by the interaction of different reagents such as acids/bases and grignard reagents in the intermediate state. Of the grignard reactions, allyl magnesium bromide was used extensively for the subsequent enlargement of ring compounds. [C. Georgialis, N. Smadja and J.M. Valery, *Synthesis*, 572 (1981)].

Functionally transformation of the cyclopropane ring systems have also been studied. Hydrolysis of 1,1-di-ester derivative of

cyclopropane converted to corresponding di acids which could have been decarboxylated to mono acid derivative which in turn might be transformed to aldehyde derivative [with $H_2O_2 / OsO_4 / H_2O$ on alcohol; Can. J. Chem., 43, 2924 (1965)].

This cyclopropyl derivative is an important compound and is used for alkaloid synthesis. Moreover the selective reduction of dicarbonyl derivatives of cyclopropane was carried out by W.K and $NaBH_4$ methods.

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