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STUDY OF THE SYNTHESIS OF SOME HETEROCYCLIC COMPOUNDS CONTAINING MORE THAN TWO NITROGEN ATOMS, USING SUBSTITUTED HYDRAZIDES AND HYDRAZINE

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INTRODUCTION

Five membered heterocyclic compounds containing more than two nitrogen atoms are trjazole, tetrazole etc. Similarly six membered heterocyclic compound containing more than two nitrogen atoms are triazine, tetrazine etc.

Various substituted and unsubstituted aromatic carboxylic acids are available and can be synthesised also by standared method under our laboratary resourses. These carboxylic acids may be converted into esters as well as acid chlorides.

These carboxylic esters on treartment with hydrazine result acid hydrazide under suitable condition. Acid hydrazide may be acylated and may be forced to cyclise to give heterocylic compounds containing three or four Nitrogen atoms in the ring. Furthermore, the resulted compounds will be characterised by elemental analysis, I.R & U.V spectra. Aternative method may also be developed for the above series of results to confirm the proposed structure of the compounds.

REVIEW OF LITERATURE AND THE CURRENT STATUS IN THE FIELD IN WHICH THE PURPOSE WORK IN UNDER TAKEN

Literature works have been done by me and is concluded to synthesise heterocyclic compounds. Using hydrazine and substituted hydrazine, containing more then two N-atoms like triazines tetrazines and their derivatives.

OBJECTIVE & SIGNIFICANCE OF PROPOSE WORK

The above series of compounds have great synthetic applications, as such series of compounds possess antibacterial activities as well as precursors for the synthesis of some dyes they also act as fluorescent brightening agents, in other words optical bleach. These nucleus are also present in some naturally occurring compounds they are also having antifungal activity they also acts as light screening agents.

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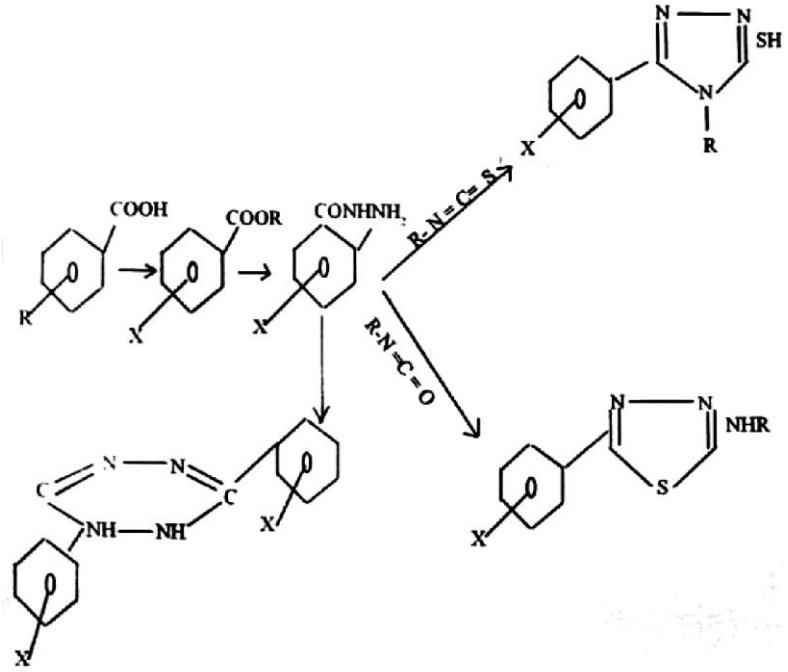
PLAN OF WORK

Moreover these series of compounds have no general methods for their synthesis.

The purposed scheme and route of the work may be formulated as given hereunder.



MATERIAL AND METHOD

Substituted aromatic aldehydes, which will be used to prepare substituted aromatic carboxylic acids and then these acids will be transformed into acid hydrazides, which on treatment with various isocyanates, or isothiocynates or alone under different conditions of solvents as well as cyclising agents. The above said compounds may be obtained.

Various isocynates and isothiocynates compounds will also be prepared by standard methods, with the help of easily available aromatic amine compounds.

COMPILATION OF WORK

The research work would be compiled into following chapter.

1. Introduction

2. Review of Literature and the current status in the field in which the propose work in under than.
3. Objective and Significance of propose work
4. Plan of work
5. Material and Method
6. Compilation of work

FACILITY AVAILABLE OF THE PLACE WORKS RELIVENT TO THE PURPOSAL

L.K. Mishra Research Laboratory C.M. Science College, Darbhanga.

Space and Apparatus Facilities are available there and Chemical Requirements will be made by me.

REFERENCES

1. C.I. Chiric, C.A. 98, 107217.
2. R. Stolle, *JProket Chem.* 73277 (1906)
3. A.P. Grekov and O.P. Shavikazh Khim, **39**, 3240 (1960)
4. H. Gilman "*An Advanced Threatise on Organic Chemistry*" Wiley N.Y., 2nd Edition Vol. II P.1470, 1511 (1943).
5. H.C. Brown, M.T. Cheng, L.J. Pareell and D. Philipobvich, *J. Org. Chem.* **26**, 4407 (1961)
6. E. Moergell, A.E. Siegrist and K. Hoelzili (CIBA), German Patentent **1**, 134, 782 (1962), C.A. **58**, 4675 (1963)
7. H. Saikachi, *British Patent* **949**, 288 (1964), C.A. **60**, 10692 (1964)
8. The Chemistry of "*Heterocyclic Compounds*" Ed. R.H. Wiley, Wiley (Inter Science), P.263 (1962).
9. J. H Boyer in "*Heterocyclic Compounds*" Ed. Elderfield, Vol. 7 Wiely, N.Y. P. 525.
10. L.G. Behr, "*Five and Six Membered Compounds with Nitrogen, Oxygen and Sulphur in the Chemistry of Heterocyclic Compounds*" Ed. R.H. Wiley (Inter Science) (1962).

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