

In this issue

Recognition of a chiral host system

The design of molecules with highly selective host-guest interactions is an area of increasing fascination for chemists. Nature does it best and often provides useful clues. With a clear understanding of molecular shapes and intermolecular interactions, especially the relatively weak non-covalent forces between molecules, it should be possible to synthesize new variants.

A practical approach to the design strategy is to identify a host molecule with a number of key features and then to determine, by trial and error, the molecule(s) which it will selectively bind. A potential host must be readily synthesizable, have a characteristic rigid shape, possess specific binding sites and preferably be chiral. B. G. Bag (page 280) points out that a simple amine called Tröger's base, first made over a hundred years ago, satisfies all the above criteria. An asymmetric synthesis has now been achieved. With its rigid V-shape and the presence of aromatic rings, the chiral amine and its analogues are found to be ideally suited for binding specific

classes of molecules. Many interesting experiments carried out with the system, such as its use as a chiral solvating agent and for DNA binding are reviewed. Some future applications are also suggested.

J. C.

Forecasts and farmers

Waiting for the monsoon to break is an annual event in India. The country's economy, so critically dependent on agricultural productivity, is inextricably linked to the success of the monsoon. Predicting the weather over appreciable periods of time, is thus an activity which assumes considerable importance, despite the seeming intractability of the scientific problem. Reliable long range forecasts of weather patterns may be elusive, but 'reasonable forecasts' over the medium range (3-10 days) appear possible; given the advances in the development of circulation models. Can such forecasts be used to develop optimum strategies for enhancing agricultural productivity? Sulochana Gadgil *et al.* address this issue on page 301, using groundnut as

a model crop and data for Chitradurga district, which is the heart of the groundnut region in Karnataka as a test case. Interestingly, both the absence of rain and a surfeit can cause problems. While much attention has been paid to the problem of drought in rainfed farming, it is less widely appreciated that prolonged wet spells enhance damage due to pests and disease. Since farmers can combat pests with a variety of remedial measures, the stage is set for theoreticians to develop game plans linking crop management strategies to weather forecasts. The meteorological data analysed spans almost the entire century (1901-1990). The authors consider strategies for using forecasts of adverse weather events in decision making. They find that 'for certain purposes climatological information on the variability of adverse weather events may be adequate'. However, in other cases 'substantial loss can be prevented if forecasts of adequate skill are available'. Maybe the day is not too far off when the Indian farmer will be a direct beneficiary of scientific advances in the realm of weather forecasting.

P. B.

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*Research on Molecular Biology of Chemical Senses
Post-Doctoral Positions*

A few post-doctoral positions are available in a research project on Neurogenetic Analysis of Chemosensory Reception, funded by the Department of Biotechnology. The positions are temporary but likely to continue for two to three years.

Qualifications:

A Ph D degree with experience in techniques of molecular biology. Applicants should have an interest in chemosensory receptors and biochemistry of signalling. Some knowledge of *Drosophila* genetics will be an added qualification. They may be required to work at TIFR Bombay or NCBS, Bangalore.

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Applications:

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