In this issue

Water-soluble phosphines

The chemistry of water-soluble ligands and their transition metal complexes has witnessed rapid growth in recent years and several of these compounds have been investigated for their use as catalysts for industrial processes and for biomedical applications. This interdisciplinary field of aqueous organometallic chemistry promises to usher in technologies which would involve the use of benign aqueous medium for industrial chemical processes, thereby overcoming the problems of toxicity inherent in the use of organic solvents. K. V. Katti (**page 219**) summarizes the work carried out by his group on a new generation of water-soluble phosphines and their transition metal complexes with emphasis on their potential applications in the development of radiopharmaceuticals.

S. S. Krishnamurthy

Renin–angiotensin system: growing complexity

The control of hypertension (high blood pressure) has been one of the major success stories in the development of drugs based on a detailed molecular understanding of the biochemical processes involved. Captopril and its close relatives were based on the premise that inhibition of angiotensin-converting enzyme (ACE) would prevent production of the octapeptide angiotensin-II, which indeed is an important mediator of cardiac hypertropy. In the biochemical cascade that results in angiotensin-II, two enzymes, renin and ACE act in succession. The renin–angiotensin system then maintains blood pressure by controlling the concentration of circulating octapeptide, angiotensin-II. Is angiotensin generated only in circulation or is there a mechanism for its production in peripheral tissues? The existence of a distinct renin–angiotensin system within the central nervous system is supported by an increasing number of investigations as detailed in the review by Reddy and Chopra on **page 226**. Clearly, the widespread use of ACE inhibitors should stimulate many more studies of the complex physiology and pharmacology of the renin–angiotensin system.

P. Balaram

We have to learn chemistry – the language of insects

Insects and flowering plants have a 65 million year history of co-evolution that has sometimes been mutually beneficial and at other times been extremely hostile. The long time involved has given plants plenty of opportunities to deal with insects that have the potential of being a menace. A particularly sophisticated example of plant strategies to deal with unwanted insects is the recent discovery that plants will respond to insect attack by releasing a chemical that attracts the natural enemies of the attackers (which are also insects) to the site so that the two kinds of insects can battle each other and provide some relief to the plants.

Humans also have a great deal of problem with insects, particularly with insect pests of agricultural crops. However, our attempts to deal with insects pests have a barely hundred-year-old history. It is not surprising that we are far from scoring many major victories in our battles with insects. One of the serious handicaps we have in dealing with insects is that they largely use a chemical language. Insects find favourable hosts and avoid unfavourable ones by tracking the chemicals produced by the plants themselves. Insects also engage in a multitude of interactions among themselves by producing a plethora of chemicals collectively designated as *infochemicals*.

It is very unlikely that we will be able to deal with insect pests of agricultural crops without a sound grasp of the chemistry and physiology of insect–plant interactions. Unfortunately these are likely to vary a great deal from case to case. There is therefore no choice before us but to undertake extensive basic research in this area and accumulate very detailed descriptions of the chemical and physiological basis of insect–plant and insect–insect interactions. The article by T. N. Ananthakrishnan (**page 215**) begins to tell us how fascinating the findings of such research are likely to be, but at the same time it also tells us how long and complex the task before us is.

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