US plant science

Monsanto's shock firings

Washington

PLANT science laboratories across the United States have in the past month been deluged with the *curricula vitae* of the 80 or so researchers recently "deployed" from Monsanto Corporation's plant sciences group in St Louis, Missouri. Monsanto claims that the cuts reflect the deliberate and sensible shutdown of several unfeasible projects; even so, its action has roused a sense of foreboding among the many laboratories, both academic and commercial, that viewed Monsanto's exemplary programme as a prototype.

The chemical company's reputation for long-term commitment to basic research has lured top talents to its benches for decades. Now, in the wake of a 1 January consolidation that erased the plant sciences group as a separate entity, a team that was once more than 150 strong has probably dwindled to fewer than 50. Monsanto has eliminated its plant growth regulator and soybean hybridization projects, which seemed unlikely to yield returns in less than 15 years, but has retained traditional herbicide and fungicide programmes in the newly-formed Monsanto Agricultural Company. The basic research efforts that escaped the scythe have been subsumed under Monsanto's central research division, taking several reassigned plant sciences researchers with them.

The first wave of deployments struck at the end of October, at about the time Monsanto completed the \$559 million purchase of G.D. Searle. Twenty employees were informed that they were "relieved of their responsibilities", and would be paid until 31 March 1986, during which time Monsanto would either find them other posts within the corporate research structure, or help them to find jobs elsewhere.

Monsanto contends that the deployments were part of a larger, pre-announced restructuring effort, but they came as "quite a shock" to the plant sciences workers, especially as some of those concerned had joined Monsanto just two months previously. (Monsanto says these hirings resulted from "miscommunications" between corporate executives and the personnel department.) Sixty more researchers were given notice on 20 December.

Critics outside the company suspect that Monsanto's manoeuvres may not be the result of sagacious planning. Restructuring of the company caused a \$98 million net loss in 1985, compared with a net profit of \$439 million in 1984. And Monsanto's agricultural interests, in particular, may be threatened soon when the glyphosate and alachlor herbicides which generate over 80 per cent of agrichemical profits

go out of patent. Small wonder, then, that the fledgling agricultural company has turned its attention to herbicide and fungicide research, whose rewards may accrue more quickly.

Plant researchers are worried, however, that other companies may share Monsanto's pessimism, if not its plight. They fear that industry may launch long-term projects in agricultural genetics with expectations of short-term profits, then abandon these projects when the gap between expectations and returns begins to open up. Although genetic manipulation is a reality, plant physiology and pathogen

interaction are in many cases too poorly understood to show which genes should be manipulated. Product development in these areas will probably take at least ten years, by conservative estimates.

Some companies seem to have acknowledged these delays, keeping long-term plant sciences projects scaled down and short-term projects busy. Dow and DuPont, for example, maintain active plant genetics programmes, but count on their herbicide divisions for immediate returns: DuPont is anticipating an enthusiastic reception for its sulphonylurea herbicides, and Dow registered its latest herbicide, tridiphane, two weeks ago. When the dust settles, it may be that Monsanto's new structure will simply conform to this pattern.

Karen Wright

Indian science

All change at the top

New Delhi

AFTER liberalizing the import of overseas technology and giving a new direction to the Indian government's support of science (see *Nature* 314, 396; 1985), Mr Rajiv Gandhi, the Prime Minister, has now decreed a radical reshuffling of the senior science bureaucrats.

The chief casualty is Dr T.N. Khoshoo, secretary of the Department of the Environment, who was urgently recruited from his previous post at the Indian Institute of Botany at Lucknow just over two years ago. Dr Khoshoo will leave the bureaucracy. He has been replaced by a non-scientist.

During the past few days, it has also been announced that Dr Yash Pal, previously secretary of the Department of Science and Technology (DST), which plays a central coordinating role as well as being one of the chief sources of research grants for university people, is to be moved to the University Grants Commission. Pal's immediate predecessor at DST, Dr S. Varadarajan, who has been secretary of the Department of Scientific and Industrial Research (DSIR) for just over a year, and who in that role has been responsible for more than 40 national research laboratories, has been transferred to the Planning Commission, not as a full member but as its chief consultant, a post that carries no well-defined responsibilities.

Mr Gandhi has also made a radical change in the machinery by which the Indian government receives advice on science. The Scientific Advisory Committee to the Cabinet, consisting of some 22 top science bureaucrats, and set up only in 1982, has been abolished. Instead, there will be a new Scientific Advisory Committee to the Prime Minister consisting of seven people drawn from non-government laboratories and from private

industry. The chairman of the committee is Dr C.N.R. Rao, director of the Indian Institute of Science at Bangalore and president of the Indian National Science Academy.

Although the changes are ostensibly part of the Prime Minister's scheme to clear out dead wood and to improve the performance of the science establishment, they have inevitably provoked confusion and uncertainty. It is not clear whether the government means business or is, instead, using the changes as a means of shock therapy. One particular confusion is that the posts vacated by Pal and Varadarajan are for the time being left empty.

The removal of Varadarajan has been a big surprise. He was specially chosen as head of DSIR by the late Prime Minister, Mrs Indira Gandhi, because of his varied experience in the chemical industry as well as at government laboratories.

Another surprise is the appointment of Professor M.G.K. Menon to the new post of Science Adviser to the Prime Minister. Only a few days earlier, Menon had accepted a five-year appointment as research professor from the Indian National Academy of Science. He is known to have been unhappy with the government's policy on technology imports, which contradicts the recommendations of the 1982 policy statement that he helped to frame.

Critics of the changes now announced also say they are doubtful of the wisdom of replacing the old advisory council with the smaller group now chosen, which will have the responsibility of advising the Prime Minister on the major issues that will arise between now and the end of the century. How, the critics are asking, can three research chemists, a neurosurgeon, a theoretical physicist and an aeronautical engineer tackle the task laid down for them, to provide a perspective plan for the year 2001?

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