

## Bhopal

## Birth defect fears allayed

New Delhi

ALTHOUGH there was an increase in the number of abortions, the gas leak tragedy in Bhopal last December did not result in the birth of handicapped babies as had been feared. Some 3,000 women were thought to be pregnant when methyl isocyanate (MIC) leaked from the Union Carbide pesticide factory on 2 December 1984, killing over 2,000 people. The Indian Council of Medical Research (ICMR), which has been following up 1,500 cases of pregnancy, says that by June, 500 babies had been born. Of these, five were born dead and three had congenital defects, an incidence statistically no higher than in a normal population. Most babies were low in birth weight (2 kg) but this too is not uncommon in India.

The rate of 17 abortions for 100 pregnancies was, however, above the national average. Dr V. Ramalingaswami, head of ICMR, says that this was not unexpected and that abortions increase by as much as four times during famine or epidemics, and the Bhopal tragedy was a comparable situation.

Soon after the accident, the state government of Madhya Pradesh considered compulsory termination of all pregnancies in the affected population. The proposal was dropped on the advice of ICMR which had no scientific data to warrant this step.

ICMR will, however, watch for any abnormality in the 1,000 babies expected to be born in the next two months from mothers who were in their first trimester of pregnancy at the time of the accident. "If MIC was really toxic to the fetus, it will be this group that needs watching", Dr Ramalingaswami said. According to his deputy, Dr S. Sriramachari, scattered anomalies in different organs would be a sure sign of MIC effect. But on the evidence so far, ICMR does not expect to find any anomalous births. In women yet to be delivered, ultrasonic scanning has shown fetal growth retardation in 15 per cent of cases, not unusual in India.

Meanwhile, ICMR has completed a health survey of 90,000 people, half the population that was exposed to MIC. Most are still undergoing treatments for respiratory and asthma-like problems, weakness of limbs and inability to carry on their usual work. Patients who had apparently recovered are said to be returning to clinics for recurring ailments. Some 1,200 patients are receiving injections of sodium thiosulphate (STS) which, according to Sriramachari, has been effective. STS is an antidote to cyanide poisoning but no one is sure why it works in MIC victims. It is possible that some MIC broke up into hydrogen cyanide when it escaped from the factory or that it produced cyanide radicals inside the body, after being inhaled. In any case,

ICMR's follow-up of STS-treated cases had revealed that STS mopped up the cyanide from the body and excreted it through the urine. ICMR is not sure how long to keep the patients on STS as they are found to develop symptoms once the injections are withdrawn.

While there has been no breakthrough in treatment, researchers claim to have obtained new information on the mechanism

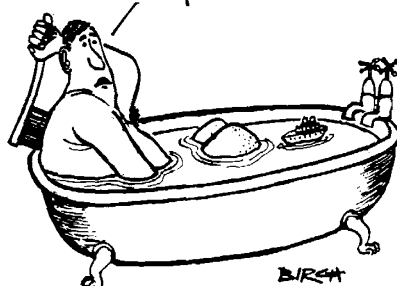
## Eureka

## Party launches agenda only

EUREKA, the French-led programme to unite European high-technology industry behind a handful of new products from driverless tractors to supercomputers, came into official existence on Wednesday last week. But exactly what Eureka is remains obscure, a situation that led the Paris newspaper *Le Monde* to comment that the decision was like film-maker Woody Allen's remark, "the answer is yes, but exactly what was the question?"

Nevertheless, officials present at the Paris meeting of ministers from 16 European states and the European commissioner for research count the broad agreement on Eureka a success. They point out that in the afternoon and evening allotted

We'll think of what it is soon...



to the discussion, there was hardly time for each delegation to make its own position statement, let alone to reach agreement on "points of detail".

Among the details not yet settled are the fundamental issues of who pays, how the programme is to be managed and on exactly what criteria projects are to be selected. The French President, M. François Mitterrand, put FF1,000 million (£82 million) on the table for 1986. West Germany made "ambiguous" noises about finding DM300 million (£75 million). But otherwise, there was silence from the 17 delegations.

There was, however, a frosty joke between Jacques Delors, president of the European Commission, and Roland Dumas, the French foreign minister. Delors, who has been put out by French insistence that Eureka should not fall into the hands of the "bureaucratic" Commission, has an ambitious technology programme of his own, and said he would

ism of MIC poisoning. According to Sriramachari, analysis of blood samples from 60 cases has clearly shown that MIC attaches "to the terminal amino group of the alpha chain of the globulin part of the haemoglobin by a process of carbamylation".

This mechanism, he says, "explains the observed clinical features such as respiratory distress, associated with cherry-red venous blood, and toxicity due to failure of utilization and removal of CO<sub>2</sub> and consequently, deoxygenation".

K.S. Jayaraman

dearly like 20 per cent of national research and development budgets, to run joint European projects. Dumas replied that he would dearly like 20 per cent of the Commission's budget, to support Eureka. Stalemate.

Predictably, Britain was adamant that no special funding was required. Foreign Minister Geoffrey Howe claimed that Europe spends more on research and development than Japan, but gets less out of it. Therefore the problem was not one of research budgets but rather of opening markets. He therefore suggested, as part of a British package of projects for Eureka, that any products created through Eureka collaborations should receive what he described as "Eurotype" certificates — which should guarantee the product free passage through the many restrictive trade barriers that exist in Europe. This proposal is said to have been well received.

For now, the management structure of Eureka remains an open question, despite a strong play by France for a "small" office to be set up in Paris. Dumas said after the meeting that "some countries" had asked France to host the Eureka secretariat, but for the moment Eureka remains without a home.

In the brief final communiqué from Paris, the European Commission is described as acting "in strict consultation" with the Eureka action group. The communiqué also says that Delors' proposals "adopted" by the recent summit meeting in Milan will be "put into action", but what exactly this means will become clear only in future European Council meetings, but it must be doubted whether it will go anywhere near as far as the doubling of Brussels research budgets that has long been in the Commission's mind.

Otherwise, the communiqué says that "particular importance" will now be attached to "encouraging and stimulating the formulation of concrete projects among the industries and research centres of Europe", and to "conceiving the appropriate financial mechanisms". That is what everyone, industry included, is waiting for.

Robert Walgate