

# UK research council hits back at 'horror lab' allegations

THE UK Agricultural Research Council last week held a press conference to present journalists with a defence of its use of animal experiments, after the *Sunday Mirror* had published 'shock' accounts (see right) of experiments at the ARC's principal laboratory, the Institute of Animal Physiology at Babraham near Cambridge. "Scientists transplant udders!" said the *Sunday Mirror*, and "Our verdict: vile".

But last week the director of the centre, Dr Barry Cross, countered that the story was "a statement about human reaction, not about animal cruelty". He questioned the credentials of the *Sunday Mirror*'s two witnesses of what went on at the institute. The first, Dr Cross said, "was a grade EW6 technician — the lowliest form of human life — no O-levels, no CSEs", and he was remembering 10 years after the event. The second "was a window cleaner or an asphaltter who strayed from his proper job". To an expert, their reports "indicate pain and distress on the part of the unqualified observer".

Dr Cross's response was perhaps not calculated to enlist the sympathy of the journalists from the popular press (the *Star*, the *Express*, the *Sun*, the *Daily Mirror* and the *Sunday Mirror* were present); but the statement that followed was.

"I'm not here to defend cruel experiments on animals", Dr Cross said. "I was the first student president of the Union for Animal Welfare". Cruel experiments "would frustrate all our work — because we are studying healthy animals".

The experiments questioned by the *Sunday Mirror* involved udder transplants in goats and cows, to investigate secretions into the milk; permanent access to the animal's stomach, to investigate the digestion of the rumen; and an operation to bring a vein in the neck closer to the surface, to allow less painful injections to be made.

The ARC scientists have developed techniques, involving skilled surgery such as would "shame the National Health Service", which induces only mild post-operative pain while the wounds are healing, said Dr Cross. After that, the animals enjoy "a life of 5-10 years of cossetted living".

Stress levels in the animals are remarkably low. A researcher attempting to measure cortisol levels — a stress indicator — in Babraham cattle was shocked to discover amounts well below textbook levels. At first he thought that the Babraham cattle must be of a particularly phlegmatic strain, thus disqualifying many previous experiments, but then the cortisol shot up to the standard level when a noisy visitor entered the room. "Animals are

more stressed on a farm than in our laboratory", said Dr Cross. "Our animals are the friendliest I know. They don't expect hostile people."

Moreover, said Dr Cross, referring to the case of a goat udder transplant, which appears to have caused most public reaction, a new-born kid actually prefers the transplanted teat, "and he must be considered unbiased".

"We have never been refused a Home Office licence" said Dr Cross. (The Home Office controls animal experiments through the 1876 Cruelty to Animals Act.) "I've only been a director at Babraham for five years; previously I've worked in seven laboratories in the US, Scandinavia, and the UK, and I've visited many hundreds of others, and I have never seen a standard of care that surpasses or even equals Babraham's."

Dr Cross also defended the Babraham work on scientific, economic, and medical grounds. "One in seventeen women suffer from breast cancer", said Dr Cross, "but ruminants do not. Our experiments may give a clue to what predisposes women to this." Tranquillisers derived from experiments in the 1940s and 1950s on the effects of drugs on animal brains. The contraceptive pill based on hormones secreted by the ovary, a lot of work on which was done at Babraham. Furthermore, "there is a lot of evidence" that the brain is altered by sex hormones at a very early period, and there is a question of injurious effects from the mother's milk if the mother is on the pill. The basic work on the udder at Babraham may shed light on this, said Dr Cross.

More direct agricultural benefits have been: pregnancy tests, synchronisation of oestrus in herds of cows to save veterinary labour, the use of prostaglandin to induce pigs to give birth in daylight (which reduces mortality), the improvement of animal welfare in intensive production, a reduction in methane production in the digestion of cattle (so lowering energy



costs), and the protection of plant protein in the rumen (so increasing the conversion efficiency of plant to animal food). "If you lock up Babraham, you lock up these advances", said Dr Cross.

It was also "a complete myth" that Babraham concealed its work. The institute has produced 2,700 scientific publications, and nine biennial reports — with photographs. Large numbers of the public have been admitted — 12 parties a month of students, farmers, foreign correspondents "and all sorts of layman" pass through. In the past 18 months there have been four visits from journalists; four TV teams; and three broadcasts.

Nevertheless Dr Cross refused to allow *Sunday Mirror* journalists, whom he called "propagandists", or photographers into the laboratory; but there was an agreement to allow an observer acceptable to both sides. Subsequently (8 July) the *Sunday Mirror* commented: "He is really saying to the public: 'It's none of your business, and you are too ignorant to be told the facts anyway'".

Meanwhile, Jean Pink, organiser of the anti-vivisection group 'Animal Aid', has claimed that the *Sunday Mirror* is prepared to give further press coverage to the "diabolical tests", and will photograph demonstrators outside the Institute on Saturday.

Robert Walgate

## Polish science writers go too far

Last month the Polish media celebrated the first anniversary of the flight of Cosmonaut Miraslaw Hermaszewski. Ironically, their special features coincided with a growing disillusion among Polish scientists not so much with the space programme itself but with what they see as its propaganda exploitation — notably in the case of the controversial 'Syrena' results.

'Syrena' was a Polish-designed experiment, carried out aboard the Salyut-6 space station, in order to obtain semi-conductor triple crystals of mercury, cadmium, and tellurium using a gradual

cooling method and of mercury, cadmium and selenium, using gas phase sublimation. In order to maintain controlled conditions of weightlessness, the production of the crystals, using the Soviet-built 'Splay' furnace, was carried out during the cosmonauts' rest period, lest undue motion disturb the space-craft.

Nevertheless, last autumn, Hermaszewski intimated to *Nature* that he had got up several times during the 'night' to ensure that the experiment was working properly, since the project, named after the symbol of Warsaw, had considerable national significance.



Not surprisingly, initial reports in the Polish media claimed the experiment as an unqualified success. Monocrystals of high homogeneity were it was said, obtained, such as would be totally impossible to produce under conditions on Earth. Then in February 1979, a meeting was organised in Krakow by the Japan Electro-Optics Laboratory for Polish users of its equipment.

A paper presented here by Warminski and Zahorowski of the Institute of Physics of the Polish Academy of sciences indicated that 'Syrena' had simply yielded a mixture of crystals of various compositions, in which the degree of homogeneity and the composition of the specimens depended on experimental parameters such as temperature gradient.

This would not in itself have disconcerted the scientists — a negative result is also of scientific value — had they not felt the results had been deliberately exaggerated by the media, which had claimed the alleged hyper-homogeneous triple crystals as a triumph for Polish science within the framework of "Interkosmos" (the Comecon space programme). "Science has become a state prostitute!" one young physics graduate put it.

Nor, apparently, was the disillusion confined to the lower echelons. According to a circumstantial report published by the "opposition" (i.e. underground) *Biuletyn Informacyjny KOR*, Professor Adam Gierek, the son of the party leader, remarked to a prestigious gathering of specialists that 'Syrena' has brought us back from space to Earth with a bump!"

The disappointment with 'Syrena' does not, however, extend to the Polish Academy of Sciences. Dr R. Galazka, of the Institute of Physics, who presented the results of the 'Syrena' experiments at the European Space Agency Conference in Grenoble in April, told *Nature* that "it was not our aim to produce crystals for some specific purpose, but to check the process of crystallization in space. We were able to use a diffusion controlled technique, impossible on Earth, to get crystals with some parts up to 50% homogeneous. Also we were able to study the problem of cavitation under pressure. We never aimed at getting a single crystal — indeed the technique of the experiment made this impossible. But we did get some 5mm single crystal blocks".

Professor Stanislaw Grzedzielski, of the Academy's Institute of Space Research, had just returned from a discussion with Dr Jan Kaczmarek, Academic Secretary of the Academy (a post which carries Ministerial rank) on the future of the space programme. He told *Nature* that plans for 1981-85 would include projects taking into account the results of Syrena. These results, he said, were not strictly speaking a surprise "because we simply did not know what to expect. Had we known, we need not have done the experiments."

Any exaggerated claims in the media, he said (and he himself always avoided popular science features), must have been due to patriotic zeal on the part of the reporters and/or their inability to understand the nature of the experiment. Even in a "controlled" press, he intimated, such divergencies can and do occur.

He himself, although not an expert in materials science, was not unhappy with the results. "Had they simply obtained perfect monocrystals every time", he said, "then there would be nothing more to find out, and the matter would no longer be one of space science but only of space technology. As it is, we can do a lot more experiments. Indeed it is expected that the Americans will try to replicate our work."

"Now that the work has started," he added, "it is far too valuable to stop. And it is very cheap, too. You see, it is not true that it involves 'cosmic sums of money' as some people would like one to believe. We don't pay for the 'ride' at all — the place on the rocket, the launch, ground control systems and so on. We only pay for the

apparatus produced in Poland, and the associated data processing etc."

The Soviet Union, he explained, were so far prepared to provide launch facilities free. "Fraternal solidarity is very important to them. If you are a big power and want your neighbours as friends you have to give them something they wouldn't have had otherwise".

This assurance, if passed on to the Polish public, would doubtless allay the rumours that 'Syrena' cost "several tens of millions of dollars" (from Poland's scanty hard-currency reserves) — if, of course the public were to believe it. Disillusion with the reporting of 'Syrena' however, bids fair to percolate from scientific circles to the wider public — carrying with it a disillusion with all forms of science reportage. It is perhaps not without significance that at this year's meeting of the Polish Academy of Sciences, a determined effort was made to bring forward a resolution calling for an end to press censorship — a motion which was thrown out by an amendment proposed from the chair. **Vera Rich**

## Mystery beams affect UK satellite

BRITISH scientists are mystified by signals emanating from regions around British Columbia and the Caspian Sea that are turning off high voltage supplies in the UK research satellite, Ariel 6. After each satellite orbit over the areas, the high voltage of two experiments is switched off while a third supply is completely unaffected. The commands controlling the switching consist of a 148.25MHz carrier with a 5kHz subcarrier carrying the command signal so the interference has to be highly specific in order to affect two supplies but not the third. Dr Len Culhane Chief Project Scientist in Mullard Space Science Laboratory's X-ray astronomy group has no explanation. "We think the signals are being generated spuriously but we can't figure out how."

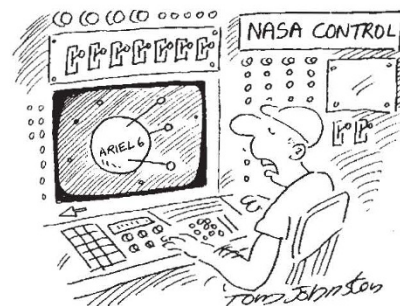
Five additional NASA ground control stations have been brought into play to turn the switches on after the satellite passes through the regions. Culhane is hopeful that eventually the satellite can be brought up to 80% of its operational capacity by further interventions.

Two other features of the interference puzzle the experimenters. First the interference occurs only when the Sun is shining on British Columbia or the Caspian. And second the experimenters have discovered that the satellite can be "immunised" against being switched off by beaming pure carrier frequency at it just before it enters the mysterious zones. The satellite orbits are such however that the satellite passes close enough to a neighboring ground station only 30% of the time — thus it cannot be immunised completely. Alan Wells of the Mullard group thinks that the likely cause is a jolt effect — a ground based radio signal combines with electrical noise in the space

craft to produce coding signals that activate the equipment switches. The possibility that the interference has been caused by vhf blasting signals coming from a dam construction site has been ruled out as has the possibility that interference is random.

In spite of the mystery the spacecraft is taking useful data. A Bristol University experiment on ultra heavy cosmic ray nuclei ( $26 < Z < 92$ ) using a gas Cerenkov counter has been unaffected. The two X-ray experiments, one by Leicester University and the other a Mullard-Birmingham University collaboration has been fortunate enough to observe an X-ray burst from the X-ray source 1735-444 which was one of the hoped for observations of the mission. However a solar panel experiment designed by the Royal Aircraft Establishment at Farnborough has been unable to operate.

But short of some unexpected revelation it is likely that the reason for the interference will not be found, leaving the possibility that a space variant of the Bermuda triangle legend may be in the making. **Joe Schwartz**



"As it's a British satellite, it's probably just taking a tea-break!"