

## SWEDEN

## Making sense of senselessness

*As progress falters in the drawn-out second round of the Strategic Arms Limitation Talks (SALT), concern is also growing about the implications of large-scale environmental warfare. But popular attention is often diverted away from both the true state of present technological developments and the strategically valueless damage which the military use of existing techniques has already done. From Stockholm, Wendy Barnaby reports.*

WHEN two such prestigious organisations as the Royal Swedish Academy of Science and the Stockholm International Peace Research Institute (SIPRI) collaborate to produce a public statement on a topical issue, it is not surprising that it should attract a lot of publicity. But press reports of their predictions about war and the environment, which are contained in the latest edition of the Academy's journal *Ambio*, have generally been both inaccurate and misleading.

The journal describes the damage done to the biosphere by war, and the ways in which natural environment phenomena could be manipulated for belligerent purposes. It also discusses some of the international negotiations to draw up treaties prohibiting modification of ecological systems for hostile ends. Most of the publicity surrounding the issue has concentrated on articles which document the worldwide spread of all types of sophisticated weapons, describe the likely results of a nuclear war in Europe, and catalogue the possibilities of weather manipulation.

Press accounts of the prospects for environmental warfare have dwelt on seeding clouds, modifying hurricanes, oceans, earthquakes and climates, and tampering with the ozone layer, without mentioning what *Ambio* stresses: that the techniques for doing these things involve many practical difficulties and are at the moment "theoretical and speculative" only. Geophysical modification as a weapon system is certainly not just around the corner, but the presumption is that the public has the right to know which stage in the sequence has been reached: a *fait accompli* is harder to oppose than something not yet completed.

The global proliferation of modern conventional weapons suggests that more attention might be paid to the damage they can cause. Dr Malvern Lumsden, a Research Fellow at SIPRI, describes the impact of strategic bombing in the Second World War, for example of Berlin, and of the bombing

of South Vietnam by the United States. He concludes that the level of social organisation (which is different from the level of "development") of the bombed population is the prime determinant of its ability to withstand environmental stress. This conclusion is interesting in the context of the environmental stress that urban guerillas seek to inflict through the use of terror—a topic on which the journal might have shed some light by considering which factors most often influence the outcomes of sustained campaigns of kidnapping, hijacking and attacks against embassies.

Apart from anticipating future weapon systems, the press could also publicise the extent of the damage caused by those presently deployed. In another article, a former US marine officer, Professor Arthur Westing, describes the three prongs of American tactics in South Vietnam between 1965 and 1973. Professor Westing, presently a botanist who visited SIPRI as a researcher in 1975, details the effects on the country's ecology of high explosive munitions, herbicides and land-clearing tractors ("Rome ploughs"): the instruments used by the USA to make the land inhospitable to enemy guerillas. One quarter of the land area of the entire country was covered by B-52 crater fields alone. One tenth of the land area—about 1.7 million hectares—was sprayed once or more with herbicides. And about 2% of the land area was cleared by Rome ploughs, 33,000-kg armoured tractors whose blades can split and topple trees of almost any size. These destructive techniques proved to be of only doubtful military value, but Professor Westing forecasts that future combatants will intensify their use in order to raise their military pay-off. The result will be even more desolation than was caused in South Vietnam.

Destruction on the scale implied by present levels of armaments can, of course, only be supported by enormous resources. Another SIPRI Research Fellow, Ronald H. Huisken, calculates that world military expenditure totalled \$210.300 million in 1974, and that the raw materials used for global military purposes are at present worth about \$250.000 million—the equivalent of the combined gross national products of the 65 countries of Latin America and Africa. That natural resources are used to desecrate the environment in which they were formed represents just one of the many ironies characterising the present ridiculous levels of militarisation. □

## CERN

## II on target

*The Geneva-based European Organisation for Nuclear Research (CERN), in which 12 European governments participate in a collaborative programme of subnuclear physics research, largely through teams of visiting scientists, has two particle accelerators that have been operational for many years. Peter Collins reports on the super proton synchrotron (SPS) now under construction*

THE meeting of the CERN Council just before Christmas marked the end of an era with the retirement of Professor W. Jentschke following his five-year term as Director General of CERN I, the original CERN laboratory. Since January 1 of this year the two CERN laboratories—CERN I and the one to house the SPS, CERN II—have been combined. Instead of two separate Directors General, the whole complex has two men working side by side: Dr J. B. Adams, as Executive Director General, is responsible for everything concerned with management, while Professor L. van Hove of Belgium fills the new appointment of Director General responsible for research.

Interest at CERN inevitably centres, however, on the 400-GeV SPS. Unlike many (and perhaps most) such building projects, its construction is moving ahead on schedule and within its estimated budget. The last of 744 bending magnets in the 6.9-km ring was installed a month or so ago to coincide with the meeting of the CERN Council. According to Dr Adams, who was the Director General of CERN II, there have been few serious problems during construction of the new machine.

Apart from the apparently inevitable delays arising from late delivery of components, only one major difficulty seems to have arisen. This was the discovery, early in 1975, of serious deterioration in the insulation of a number of the magnets that had already been installed. Urgent and intensive detective work showed that the failure was always in the same area of the coils: it was found to be caused by the use, on the ends of cables, of a cleaning fluid that contained a high proportion of phosphoric acid. Where this had not been completely cleaned off, the acid attacked the resin used for insulation, and had the effect of continuing its "curing". The result was that the resin hardened, shrank, and eventually cracked, allowing the acid to get through into the glass cloth used for the inner insulation, and thence to the

THE annual review of the Christian names of the "top children" whose birth are announced in the London *Times* appeared as usual in the New Year. For the boys, James, Thomas and Nicholas headed the list, with, for girls, Sarah, Emma and Alexandra in the corresponding positions. This year the list has stimulated an interesting correspondence on the sociological problems relating to the choice of what are perhaps more accurately described by the American term "given" names. No *Times* reader apparently calls his child Tracy or Charlene, though there is a growing tendency to saddle girls with classical names like Corinna, Flavia, Gratia and Xanthe. One writer, from the Savage Club, calling the list "astonishingly class distinctive", recommended the introduction of a Christian Name Discrimination Act, banning socially-divisive names and having, like the French, an approved list from which names must be drawn. This last course has given difficulties to Breton nationalists who wish to use names of folk heroes who were not recognised by Napoleon.

Names may be as interesting to the parasitologist as to the sociologist. In 1939 I became involved in the problem of lousiness in English children. Before the war official statistics suggested that the head louse was almost extinct, for only one or two per cent of children were detected with the parasites by the officials of the School Medical Service in their routine school inspections. However, when town children were evacuated to the country to escape the risk of bombing in September 1939, far more than had been expected were found to be verminous. The Board of Education, as it then was, defended its statistics, and suggested that the children had become infested during the long summer holiday. Political arguments arose. Socialist education committees in towns accused Tory reception areas of exaggeration. No one seemed able to produce the facts

which had led to what was rapidly becoming an ugly situation, particularly as there was as yet no enemy bombing to distract people's attention.

As no one else seemed to be trying to find out the facts, I approached

## Names to remember



**KENNETH MELLANBY**

the Board of Education with a plan. To the Board's credit, I was given every encouragement and £200 to investigate. I found that, in our cities, over half the girls between 5 and 12 years old were lousy, and that a third of the boys were similarly affected. There was no evidence that the rate of infestation rose during the holidays. It was clear that most infestations were not being detected at routine inspections.

These results were all published with the approval of the Board of Education and the Ministry of Health, though they were clearly critical of work of those government bodies. My paper was censored only

in very minor ways. I was asked to omit a section where I identified the incidence of infection in children who were registered as belonging to different religions and different Christian denominations. I agreed that this information might exacerbate inter-sectarian quarrels. But I was also asked to cut out a section on Christian names, which was thought to be too frivolous for wartime publication, and I think that the information may now be revealed.

In one city which had a particularly high rate of lousiness (70 per cent of all ten year old girls) I noticed that children named after film stars, children with saints' names and children with the names of the Royal Family were the most likely to be lousy. Marlene (often spelt Marleen), Shirley, Bernadette, Margaret, Rose, Marina—they always warned me in advance what to expect.

This, of course, brings us back to the sociological field. Lousiness tended to be highest in large families, where reinfestation from siblings even after successful treatment was common, and where individual attention by the mother was less effective than when she had fewer children to care for. It has been suggested that children named after film stars or royalty come from families with less of a tradition than those where the same few names are used generation after generation, and where parental care may be greater. This may be the explanation. But I suggest that anyone studying sociological problems relating to names bears these observations in mind. During the war I found them useful. Although the results had to be confirmed by individual examinations, I could make a good estimate of the lousiness of a class of school children simply by reading through the register. As the head louse is now staging a comeback in some British towns, it will be interesting to see whether it still prefers to infest the holders of any particular names.

coils themselves. The insulation system itself then became a conductor.

Every one of the 300 or so magnets already assembled was examined, and dismantled, repaired or rebuilt where necessary. As an extra precaution, further insulation in the form of two layers of kapton foil was wrapped round each coil, and it was found possible to do this with those magnets which had not deteriorated, but had already been installed. Every one of the 744 magnets in the ring has been treated in this fashion.

The fact that nearly 300 of these big

magnets were rebuilt within the SPS Assembly Halls, without delaying the very strict construction schedule and using CERN's own staff and facilities, is an indication of the efficiency and skill with which the whole project is being handled. Tested under conditions with peak fields equivalent to the 400-GeV energy level for which they are intended, the magnets have shown no further failing, nor do there seem to be any serious problems with any of the other components.

Apart from some delays in delivery of magnets for the beam transfer lines

to the experimental areas, the rest of the construction is well on target, and the accelerator is expected to be operational in the latter part of 1976. This is perhaps no more than was to be expected from an establishment that runs as sweetly as CERN. To many it is an object lesson not only in international scientific and technical cooperation but in the noticeably pleasant atmosphere and evidently high staff morale as well. It could well be studied by certain international agencies of the UN family a few miles away in Geneva itself. □