considered to be of epidemic proportions in the United States, where 300,000 new cases are reported each year. Each new patient becomes a carrier for life. Acyclovir has generated great enthusiasm at Burroughs Wellcome, its developers, as a real advance in treating the disease. One worry, though, is that viruses may acquire resistance.

Herpes simplex virus (HSV) can infect any part of the skin or mucous membrane. HSV Type 1 cause the familiar "cold sore" blisters on the lip. Genital herpes, caused by HSV Type 2, is a more severe condition and causes painful blisters in the genital area. In the Dallas trial the drug will be applied as an ointment over skin areas where patients feel a tingling, burning or itching sensation (a "prodrome") suggesting that a blister is about to develop. Acyclovir will be compared with placebo cream containing no active agent. If the drug succeeds in reducing the period of recurrences to one or two days, it should not only reduce the period of pain for the patient, but also reduce the capacity for passing on the disease to others.

Because viruses are parasites of the normal systems of the cell they infect, antiviral drugs tend also to act against the host cell. There are few points at which the life processes of the virus can be properly differentiated from those of the host, but acyclovir acts specifically against herpesvirus through one such reaction (*Nature* 272, 583; 1978). It is phosphorylated by the herpes-specified enzyme thymidine kinase, so that the active triphosphate derivative is present in much greater quantities in infected than in uninfected cells. In a sense, the virus thereby invites its own destruction. It remains to be seen whether acyclovir will prove active against even the dormant form of the virus. Herpes infection is characterized by the way in which all outward evidence of the infection can disappear, but the virus persists undetected in certain nerve cells.

Acyclovir is being used as an ointment in the Dallas study, but later tests will include systemic (for example intravenous) injections which could increase the range of infections against which the drug can be used. Already acyclovir has proved active as an eye ointment against herpes simplex corneal ulcers, and less conclusively against viral pneumonia.

The US National Institutes of Health are to fund trials of intravenous acyclovir in newborn babies with neonatal herpes, in comparison with adenosine arabinoside (vidarabine), and in cases of herpes encephalitis, in comparison with the adenoside of adenosine monophosphate. Neonatal herpes is a herpes simplex infection contracted from the infected mother during passage through the birth canal — if the virus reaches the brain it can cause death. Herpes encephalitis is caused by reactivation of the virus in the brain.

Charles Wenz

European Earth sciences

Unity prevails

Strasbourg

Europe's Earth scientists may yet unite. A meeting on 13–16 April at the assembly of the Council of Europe saw the first public appearance of the European Union of Geosciences (EUG). At present, EUG consists of a founding committee and has the official status of a working party of the Parliamentary Assembly of the Council of Europe. Its aim is to provide an organization which encourages the exchange of ideas and information across the more traditional subject barriers that separate geologists from the geochemists, geophysicists and oceanographers. To that end, membership is open to any geoscientist, but officials of EUG are to be nationals of the member countries of the Council of Europe.

At present, EUG is run by a founding committee under Professor C. J. Allègre of the University of Paris, and its formal statutes are to remain provisional until approved at a future meeting. EUG intends to hold a regular meeting in the spring in Strasbourg every other year; its interdisciplinary scope is to be complemented by more specific topical conferences to be held between the more general meetings. The concept and format of EUG owe a lot to the success of the American Geophysical Union and its big annual spring and fall meetings, which have almost become a must for many European researchers. However, the scope is to be wider insofar as it is to encompass all Earth scientists, not only those in the geophysical community. In this way, it hopes to avoid rivalries and misunderstandings with the European Geophysical Society, which caters for the same scientific community as the American Geophysical Union.

Although the European Science Foundation (ESF) did not play a major part in the organization of the Strasbourg meeting, it appears that ESF is prepared to help set up and support a small permanent office for EUG in Strasbourg. Is this the beginning of ESF taking a more active interest in the Earth sciences, an area hitherto neglected by its working parties?

The European Parliament building was made available by the Council of Europe for this first EUG meeting. Although organized at relatively short notice, it nevertheless managed to attract more than 600 participants and enough presentations to run a full four-day programme grouped in 16 different sessions.

The abstracts from the first meeting appeared as the first issue of an ambitious new publication called *Terra Cognita*. EUG hopes to develop this into a quarterly journal which should serve as a forum for scientific information on research projects and activities as well as to promote the discussion and exchange of ideas within the Earth sciences community. Konrad Guettler

Out on a limb

Brussels

Dutch Socialist Member of the European Parliament, Annie Krouwel-Vlam, is trying to whip up support for a European Community directive on common rules for organ transplants. She is surprised that there are no rules regulating relations between organ banks and facilitating access for would-be recipients of new parts. Such measures would implant a greater awareness of the benefits of the European Community in the breasts of its citizens, she asserted.

Her suggestion has been passed to the Community's organ banks and the European Commission. So international banking could soon take on a new meaning.

Jasper Becker

Interferon business

Trials ahead

Rotterdam

That interferon is big business can only have escaped the notice of those totally occupied for the past two years in preventing the pollution of space by small plastic tiles. That it continues to be big business was evident from the number of companies represented last week (19–24 April) at the interferon meeting organized by TNO, the Netherlands organization for applied scientific research.

Half of the British participants were from Beechams, Celltech, Fisons, ICI, G.D. Searle and Wellcome, with about the same proportion of commercial people among the West Germans. The large United States contingent included representatives of Cetus, Du Pont, Enzo Biochem, Electro Nucleonics, Genentech, Hoffman LaRoche, Hydron, Meloy, Sepetex, Schering and Shell. Not a slide went unphotographed nor a talk unrecorded by one or more commercially interested party.

Many of these companies already had a declared interest in interferon but some were new to the game. ICI let it be known that it has cloned an interferon gene from lymphoblastoid cells in collaboration with Dr E. de Maeyer's group at the Institut Curie in Orsay. ICI says that this is just an exercise in cloning, but with the setback in the fortunes of the company earlier in the year (*Nature* 12 March), there must be thoughts of trying to cash in on clones.

There is little doubt that the demand for highly purified interferon is growing, but the growth can be fitful. Wellcome, for example, recently claimed that supply had outstripped demand for its alpha-interferon (from white blood cells). That situation could easily be reversed if the current clinical trials of Wellcome's interferon show promise. The interim results, reported in Rotterdam, of several relatively large trials of a variety of different alpha-

interferons suggest that it has a tantalizing degree of activity against a broad spectrum of viral diseases and tumours. But activity is not enough, or consistent enough, in most diseases to give a final verdict without more trials. Also, as genetically-manipulated bacteria start to yield sufficient amounts of the ten or so subtypes of alpha-interferon, the permutations of subtypes and diseases becomes huge.

Meanwhile, large-scale trials of beta-interferon (from fibroblasts) lag slightly behind. The largest has yet to start. Financed and organized by the National Institutes of Health (NIH), the trial will use 50,000 million units of beta-interferon, enough for several hundred patients. The interferon is being supplied by Flow Laboratories Inc., which won the \$2 million contract a year ago. First deliveries were due a few weeks ago, but NIH appear to be in no hurry. This is lucky for Flow Laboratories, whose own production has not been going smoothly. Fortunately, they have a subcontract with the West Germany company of Dr Rentschler Arzneimittel GmbH which has continued to amass beta-interferon made by its own, less advanced, techniques.

The next big contract, also for NIH, will be for gamma-interferon (from cells of the immune system). Far less is known, at least publicly, about this type of interferon, but Biogen and Genentech are rumoured to be on the verge of cloning the relevant genes.

Other commercial interests centre on monoclonal antibodies against the interferons. Several new monoclonals against either alpha or beta-interferons were announced in Rotterdam, but only the original monoclonal (see *Nature* 285, 446; 1980) is as yet commercially available. The sellers are the British company Celltech Limited, so far its only product. It will be surprising if the Celltech catalogue does not double soon.

Peter Newmark

Dioxin hazards

Secrecy at Coalite

Secrecy about the medical consequences to workers exposed to dioxin continues at the British company Coalite and Chemical Products Limited. Documents now to hand show that Coalite will not agree to the further medical investigation of workpeople if the physicians concerned insist that the results are eventually published.

Coalite's shyness is not unprecedented. Last year, the company withheld information on an epidemiological survey of workers exposed to dioxin (2,3,7,8-tetrachlorodibenzodioxin) at its Bolsover (Derbyshire) plant in 1968-71 (see *Nature*, 6 March 1980). The exposure followed an explosion in a vessel used for the manufacture of 2,4,5-trichlorophenol and the workers affected by dioxin developed the skin disease chloracne.

The fresh trouble which has arisen at Coalite results from the need for more

detailed investigations of individual workers to make up for the deficiencies of the epidemiological survey of 1977-78. That involved only 41 of the 90 workers known to have been exposed, but revealed (almost a decade after the event) some abnormalities of blood chemistry and immune function — but none of the expected chromosomal abnormalities in circulating lymphocytes.

The news that Coalite was unwilling to disclose information about this survey served to alert the statutory Employment Medical Advisory Service of the Health and Safety Executive to the existence of such data, which was disclosed on a confidential basis after three weeks. The service has also persuaded Coalite that its medical adviser, Dr George May, should publish some of the results.

The employment service has in the meantime been uncomplimentary about the survey which, it says, is deficient in its failure to follow up past employees and in the inadequate matching of the control populations. The survey covered 41 workers known to have been exposed to dioxin, 54 who might have been exposed and 31 intended as a control group but drawn for convenience from senior office, laboratory and works staff, most of whom were being investigated for blood lipids at the time.

The 1977-78 survey showed blood-lipid disorders, with elevated concentrations of serum cholesterol and triglycerides, and depressed levels of high-density lipoprotein. The enzyme γ -glutamyl transpeptidase, diagnostic of liver function, was abnormally high in the exposed group. On the other hand, levels of two immunoglobulins (IgD and IgM) were depressed in the exposed group, suggesting impairment of immune as well as liver function.

The significance of these findings is far from clear, with the consensus among physicians in the field that further investigations are needed. They argue that the persistence of the phenomena uncovered by the earlier study should be confirmed — but also that further surveys should be more carefully controlled.

Dr George May, Coalite's company doctor, confirms that those workers included in the original survey have since been offered a second medical examination, but that "not everybody availed themselves of the opportunity". In the event, 29 of the original sample of 41 workers were re-examined, but measurements of immunoglobulin were not made.

There are no plans, however, for further investigations of the Coalite workers, according to Dr George Sorrie, deputy director of the Employment Medical Advisory Service, who says that his service has not been presented with any "realistic and useful" proposals for a long-term assessment of the health of the Coalite workers. The reassessment of the state of health of dioxin-exposed workers at

Dioxin a sarcoma risk

Reassessing clinical data is not the only reason for monitoring the health of workers exposed to dioxin. Recent letters in *The Lancet* (P. A. Honchor and W. E. Halperin, i, 268, 31 January 1980; and R. R. Cook, i, 618, 14 March 1980) highlight another reason.

The authors of the letters point out that in four industry-sponsored mortality studies of dioxin-exposed workers in the United States, 105 deaths were recorded. In four of these cases, death was caused by soft tissue sarcomas. These are rare forms of cancer and for most the aetiologies are unknown.

Soft tissue sarcomas have also been identified in another cohort of workers considered to have been exposed to dioxin. According to two Swedish epidemiologists, Dr Lennart Hardell and Anita Sandstrom of the Centre of Oncology at the University of Umea, exposure to the dioxin contaminated herbicide 2,4,5-T (2,4,5-trichlorophenoxyacetic acid) or chlorinated phenols 6 to 20 years previously could be responsible for the sixfold greater incidence of soft tissue sarcomas recorded in a survey of Swedish forestry workers (*British Journal of Cancer* 39, 711; 1979).

Alastair Hay

Coalite is thus far from complete. One clinician describes the re-examination of the 29 workers as a "totally useless piece of work" which cannot be expected to yield any meaningful results.

Coalite's managing director, Mr Charles Needham, has been approached by several clinicians prepared to carry out further investigations. Coalite's reluctance to agree to publication of the results from any future comprehensive medical screen of its workers has, however, forced at least one clinician to abandon his proposal.

Mr Needham, described by his secretary as solely responsible for press relations, has not been available for comment. One consequence of criticisms of the 1977-78 survey, and of Coalite's continued insistence on secrecy, is that the financial sponsor of the survey (an independent non-governmental source) will be unwilling to provide further support.

As the law stands, Coalite may have the last word. Hitherto, the company has been able to exploit an ambiguity in the 1974 Health and Safety at Work Act when deciding whether or not to release medical information on its workforce (see *Nature* 6 March 1980, p.2). The routine powers of the Health and Safety Executive to demand medical records of workers likely to have been affected by a product lapse when manufacture stops. Although Section 27 of the act allows the executive to disclose whatever information it requires (see *Nature* 1 May 1980, p.4), epidemiologists at the executive consider that a test case is required to clarify the law.

Alastair Hay