

before the British trials are completed. Then it would take perhaps another 2 years for production methods to be perfected and for the necessary product licences to be issued.

As well as the "conventional" approach, the "biotechnological" route to a herpes vaccine is being tried by at least one company. Molecular Genetics Inc. of Minnesota, working with the drug company Lederle, has got as far as producing an immunologically-active chimaeric protein containing a glycoprotein from type 1

herpes simplex virus (see *Nature* 3 March, p. 72). The gene for the protein is expressed in the bacterium *Escherichia coli*, but much work remains to be done before a vaccine becomes a practical proposition.

So there is still no cure for herpes and it looks like being some years before one comes along. In the shorter term, however, there is the prospect of new drugs following on from acyclovir, which has already proved effective in reducing the severity of infections, but cannot eliminate the risk of recurrence.

Charles Wenz

## Space Telescope

# Delay as troubles mount

Washington

THE National Aeronautics and Space Administration (NASA) confirmed last week that the Space Telescope, still haunted by technical uncertainties, would not be launched until the latter half of 1986. But James Beggs, NASA's administrator, promised a congressional subcommittee that the telescope would eventually conform to all its original performance specifications.

Beggs' testimony contradicted the findings of a report sent to the House of Representatives Appropriations Committee by congressional investigators (see *Nature* 2 June, p. 366). The report claimed that dust contamination of the primary mirror, and deficiencies in the fine guidance sensors supposed to aim the mirror at distant objects, had prompted NASA to ask the scientific community to accept a lower standard of precision.

At hearings last week officials from NASA and the Perkin-Elmer Corporation, which is building the mirror, said new studies of the dust particles on its surface had found that 0.2 per cent of the mirror's surface contained particles, a degree of contamination acceptable in the visible range and "marginally acceptable" in the ultraviolet range. But because of the likelihood that contamination will increase in the three years remaining before launch, the mirror will have to be cleaned. Perkin-Elmer conceded that any attempt to clean the mirror would risk damaging its coating. NASA's project office is reviewing possible cleaning methods but is expected to recommend inverting the mirror and blowing the dust away with clean dry air or filtered nitrogen.

NASA officials told the committee that design problems associated with the crucial fine guidance sensors had proved serious enough to persuade the agency to transform the first flight model, which has still not been completed, into an engineering test model, and to start work on an alternative design in case the original concept proved unworkable. Beggs said the ability of the sensors to track a 14.5 magnitude star and maintain a lock on it for 24 hours had not yet been demonstrated, but preliminary tests of the system's Koesters prism interferometers

were said to be "encouraging".

Speaking a day earlier at the opening of the Space Telescope Science Institute in Baltimore, project scientist Robert O'Dell was equally guarded about the prospects for the fine guidance sensors. He said he was confident they would operate with their specified accuracy "at least most of the time". In an interview later, he said that the Lockheed Corporation had found that the continuously moving reaction wheels used to point the telescope caused vibrations at certain speeds which would make the spacecraft tremor excessively.

O'Dell also disclosed new anxieties about the possible implications of the recent discovery that the space shuttle, and other spacecraft, emit a glow while in orbit (see *Nature* 26 May, p. 282). Current speculation is that the glow is caused by the interaction of hydrogen on the spacecraft surface with residual oxygen in the space atmosphere. The glow threatens to contaminate any astronomical experiment operating aboard the shuttle. O'Dell said an experiment designed to explore the phenomenon was being planned for next year, and might result in new materials being selected for the Space Telescope.

In evidence at last week's hearings, Beggs acknowledged that NASA had not foreseen the scope of the technical difficulties the telescope project would encounter, but insisted that recent organizational changes — including the establishment of closer links between NASA and the telescope scientists — would enable the agency to complete the telescope successfully by the end of 1986.

He warned, however, that many of the problems had been unavoidable given the pioneering technology the project entailed. And he anticipated new problems when it became necessary to verify the optical integrity of the instrument prior to launch. Because the telescope is designed to operate in zero gravity, the primary mirror will be distorted by the Earth's gravitational field while it is on the ground. NASA intended to devise a number of "limited" tests that could be performed on the ground and hoped to be able to alter the figure of the mirror when it was in orbit.

Peter David

## Madagascar

# Western scientists back in favour

PROSPECTS for field researchers wanting to study Madagascar's unique fauna and flora appear brighter than at any time in the past decade. The island's government, after years of discouraging Western scientists, is now seeking to enlist overseas expertise to help in its conservation efforts.

The closed-doors policy started with political upheavals in the early 1970s that came to a head with a military coup in 1975. Thereafter the new left-wing government effectively barred the doors to Western scientists by refusing to grant visas for stays of more than 3 months. Overseas scientists were viewed with suspicion and there was a feeling that the country was not benefiting from their investigations. Eight years later, the government has gained more confidence in its sovereignty, and the efforts of a number of individuals — notably M. Barthelemy Vaohita of the World Wildlife Fund's Madagascar branch — have secured a change in direction.

When news of the government's change in outlook began to spread two years ago, the Department of Scientific Research on the island was flooded with more research proposals than it could cope with. The problem of evaluating the proposals was tackled at a meeting in Jersey early this year, organized by Dr Lee Durrell of the Jersey Wildlife Preservation Trust. Biologists and conservationists from six countries, together with Mme Berthe Rakotosamimanana, director of the Department of Scientific Research, agreed to set up an International Advisory Group of Scientists (IAGS) to review research proposals and make recommendations to the Malagasy authorities. IAGS, which started its work in March this year, has already forwarded three recommendations; the first expeditions to apply through IAGS could set out in August.

Although the Malagasy government is anxious to foster research that is partially oriented towards nature conservation, this condition is unlikely to exclude any sound biological research project. Dr Durrell, IAGS's chairman, says the most important condition is that copies of publications resulting from research in the country should be forwarded both to the university in Madagascar and to the government. One recent expedition was also asked to employ a Malagasy technician.

Tim Beardsley

## Correction

In last week's article "Polish pollution: Changes may come at last", the first sentence on p. 567 should read: "A plea last autumn by Deputy Premier Roman Malinowski for 'close cooperation' with Czechoslovakia and the German Democratic Republic to save 60,000 hectares of threatened trees in the western province of Jelenia Gora..."

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