

BIOPEN, the European-based genetic engineering firm, has had 600 "very good quality" applications for 18 post-doctoral positions in its new Geneva laboratory, Biopen's President, Robert Crawthorne, said last week. The applications come from throughout the world, but it seems likely that one third of the posts will be filled by applicants from continental Europe, one third from the UK, and one third from the US.

"The numbers we are looking for won't drain the pool of available talent" said Crawthorne "but we're looking for the best". Other companies may have had greater difficulty in recruiting, but Biopen has had something special to offer, he said: a chance to work with a scientific board of ten top academics in molecular biology (seven in Europe and three in the US) and "strong and open" links with the universities.

## Biotechnology

# 600 apply to Biopen

Biopen is also planning greater links with European companies, particularly in chemical, petrochemical, and process engineering, said Crawthorne. The first cooperative agreement is expected shortly. "We already have a strong European shareholding: 36%, with 41% in the US and 23% in Canada. But we are not looking for shareholders any more." Rather, Biopen wants to learn from relevant industries what might be the most profitable products to develop with genetic engineering. "We've got expertise in recombinant DNA" said Crawthorne. "The problem is knowing what line to work on."

Biopen has found it very profitable to work with the US pharmaceutical company, Schering Plough, to whom it has licensed interferon production based on the successful cloning and expression of the leucocyte interferon gene by one of Biopen's scientific board, Professor Charles Weissman of the University of Zurich. "We want to extend such links" said Crawthorne, in Europe and elsewhere.

On interferon, he said Biopen was nine months from producing enough for clinical trials. A number of laboratories may undertake pilot plant production, including Professor Brian Hartley's laboratory at Imperial College, London, but decisions on such matters would be undertaken in consultation with Schering Plough. However, there were still a lot of hurdles, particularly over yields and purification.

Robert Walgate

## Soviet Union

# Moscow seminar meets

EARLIER this week, several non-Soviet scientists gathered in Moscow with about 50 of their Soviet colleagues for the fourth annual "International Conference on Collective Phenomena". These conferences, which are held outside the usual rigid framework of scientific exchanges, grew out of the weekly "Sunday Seminars for Refusniks", which began in 1973 to provide some kind of intellectual life for Jewish scientists who, having applied for a visa for Israel, found themselves denied professional employment.

Under their restricted conditions of work, without access to libraries, laboratories, computers and the like, it is, inevitably, the mathematicians and theoretical physicists who have the best chance of producing meaningful research. The majority of scheduled papers, therefore, were of a mathematical nature. Indeed, the hosts of the conference, Viktor Brailovskii and his wife Irina, are themselves both mathematicians.

One of the participants, Aleksandr Ioffe, since losing his academic post in 1977 has published several papers in foreign journals, including the *Transactions of the American Mathematical Society* and the *Comptes Rendus* of the Academie Francaise. In February, 1980, his foreign colleagues held a two-day mathematical symposium in his honour at Imperial College, London, where all but one of the papers were developments of Ioffe's work.

Ioffe, unfortunately, is something of an exception among the refusniks, most of whom can have little contact with the scientific community abroad. The "Collective Phenomena" conferences (as opposed to the more domestic seminars) were founded

precisely to overcome this feeling of isolation. This year's seminar was sponsored by the UK Institute of Physics, the New York Academy of Sciences, the French Physical Society, the French Institute of Chemistry and the Norwegian Physical Society, inspired, one may assume, by feelings of scientific solidarity rather than the hope that any major new research would be presented there.

The same solidarity, since the conferences began, has encouraged several western scientists each time to make the journey to Moscow, and to present papers of their own. Under Soviet conditions,

organizing an "independent" scientific meeting is liable to run foul of the authorities. Although some intending participants were refused visas, those who actually reached Moscow did not meet with the particular brand of bureaucracy directed at Dr Anthony Kenny, Master of Baliol College, Oxford, last weekend. His lecture, at the underground "Patocka University" in Prague (which met in the flat of Dr Julius Tomin, the dissident philosopher) was interrupted by the security authorities, on the grounds that his visa had been given for tourism, not for addressing other scholars. □

# Spaceflight record-holder in orbit again

VALERII Viktorovich Ryumin holds the current record for orbital flight (175 days). His return last week to Salyut-6, where he established this record last year, has caused certain speculation abroad that the Soviets might be preparing a manned mission to Mars.

Such a mission, in fact, would conflict with all "classical" Soviet projects for space exploration. These, following Tsiolkovskii, the "father of Russian

cosmonautics" envisage the establishment of a permanent orbital station as a necessary preliminary to any deep-space mission. Such a station, it is understood, would be staffed by "several tens" of male and female crew and scientists for shifts of several months at a time. At least for this century, it is understood, lunar and planetary exploration will be left to the much cheaper automatic rover vehicles.

Nevertheless, Soviet space-medicine experts are showing considerable interest in the biological effects of long-term spaceflights. Last month, Academician Oleg Gazenko told TASS that the most important result to date was that no significant organic changes had been revealed which might limit the duration of future flights, and that people could work in space for six-month periods.

No doubt Ryumin, with last year's record-breaking flight to his credit, as well as a brief mission in October 1977 aboard Salyut-25, will prove an especially interesting "subject" — albeit a somewhat serendipitous one — during his current flight on Salyut-6. For, so far from being part of a Mars-preparation programme, he was, according to TASS, only included at a very late stage, when the original candidate, Flight Engineer Lebedev, injured his leg during final training.

Vera Rich

