Soviet libraries

How Novosibirsk keeps up

SOVIET engineers and applied scientists consider the updating of their professional knowledge to be of "vital importance", according to a survey reported in *Pravda* two weeks ago. This, of itself, is fairly surprising. For the past ten years, the Soviet media, including the slogans of the May Day and Revolution Day parades, have urged them to keep abreast of the latest developments in their profession, while the universities, the higher education institutes, the radio "universities of the masses" and the All-Union "Znanie" (knowledge) Society maintain a vast network of updating and upgrading courses. Unexpectedly, however, the *Pravda* report indicated that few of those interviewed attend formal refresher courses or use specialized science libraries. This result is particularly surprising, because the survey was conducted in Novosibirsk, the home of the Siberian branch of the Soviet Academy of Sciences and of several major research universities, science libraries and information centres.

Participation in refresher courses brings a number of fringe benefits for Soviet scientists. There is generous provision for study and examination leave and, officially, a person enrolled on such a course cannot be compelled to work overtime. Yet out of 626 people interviewed, only 1.3 per cent are enrolled in university courses (leading to a degree) and 26.4 per cent in job-related "higher qualification courses". No fewer than 70.4 per cent said that they were studying on their own.

Pravda rightly points out that private study can be effective only if it has a proper information base. More than half of those interviewed claimed that they had too little time to use the Novosibirsk libraries as much as they wished. Often, they said, the time spent travelling to and from a library was several times that spent consulting the works they had gone to read. More than 70 per cent complained of the difficulty of finding what they wanted to read, even with the help of catalogues designed to facilitate searching. More than 80 per cent said they preferred to find the information they require directly at their work-place; about 30 per cent liked to study at home by way of television, radio, books or journals and only 14 per cent favoured going to libraries. When asked "from what source do you most often obtain information that is valuable to you?", the most popular answers were journals and television, with books in only seventh place.

The *Pravda* commentator, A. Fabrichnyi (a senior lecturer at the Novosibirsk Higher Party School), suggests that the figures indicate a need to rethink and improve the "scientific and technical propaganda system". The media, in general, should be involved more closely with the

dissemination of new scientific knowledge, particularly the high-circulation periodicals of individual industries, which, paradoxically, contain far less material of direct use to the industrial scientists than do the major all-union dailies and weeklies.

What the commentator fails to note is that the basis of the survey seems ill-defined, with improvement of qualifications covering both the sustained study required to obtain a higher degree and the reading of occasional information sheets from the Scientific and Technical Information Centre. The disproportion between travelling to a library and time spent in it, the emphasis on television and journals and the preference for working alone suggest that improving one's qualifications may often mean nothing more than browsing through professional journals or watching a science programme on television.

Vera Rich

Public understanding

Royal Society urges activity

THE Royal Society will soon be awarding an annual prize to the British scientist or organization doing most to further public understanding of science if it follows all the recommendations of the committee on the subject under Dr W.F. Bodmer (Imperial Cancer Research Fund) published this week*. The essential argument of the report is that public understanding is a public good which scientists have a "professional responsibility to promote".

The most subversive of the proposals in the report, which is said to have been accepted by the council of the Royal Society, are however those concerning the British educational system. Thus the Bodmer committee asks that no school student should be allowed to concentrate exclusively on science or non-science studies "even after the age of 16", and that students at universities should be helped to a broader education either by courses of general study or in some other way.

In an attack on present practices in British secondary schools, the Bodmer report says that the education of post-16 students is "appallingly narrow" and that the degree of specialization now common, entailing as it does a "wasteful repetition" at school of what is later studied at university, is "totally unnecessary". The document goes on to say that universities and other institutions of higher education help to restrict the broadening of education by their "unnecessary and unreasonable" demands for specialization and says that claims that reform would undermine the quality of British higher education are belied by the success of school systems elsewhere.

Research data

University sues laggard students

Washington

WASHINGTON State University has filed a \$150,000 lawsuit against two graduate students who, it alleges, have refused to turn over data on trace gases in the atmosphere that were gathered during an Antarctic research project. An affidavit signed by the principal investigator of the project says one of the students has threatened to destroy the data if the university tries to recover them.

The issue is important because it raises questions about the contractual obligations of people other than principal investigators to the grant-making agencies supporting university research. Questions about the responsibility of students to their supervisors, and of universities for their students, also arise.

The data were gathered as part of a four-year project supported by the

The committee also wants a broader education, including experience of work outside the educational system, for science teachers, and says that in-service training should be an integral part of their conditions of service, not "an optional extra for enthusiasts".

Broadly speaking, the Bodmer committee is appreciative of the treatment accorded to science in the British press but especially by the broadcasting media. It gives a sympathetic account of the problems encountered by science journalists in the internal competition for newspaper space, but also says that the low opinion among editors of the importance of science in newspapers is belittling and "unwarranted". The committee complains that, with one exception, it failed to evoke a response from the newspaper editors whom it asked for help.

On the scientific community's responsibility, the committee urges that scientists are not excused by the emergence of a substantial number of professional writers on the subject (with whom the committee also notes a persisting professional mistrust). Apart from the proposal that the Royal Society should award an annual prize, the committee suggests that PhD candidates might be asked to produce a summary of their work for a lay audience, that the Royal Society should take the initiative in organizing press briefings for science journalists and that it should set up a standing committee to monitor progress in the field. □

*The Public Understanding of Science (ISBN 0 05403 25756), from the Royal Society, 6 Carlton House Terrace, London SW1Y 5AG.

National Science Foundation (NSF). The students, Stephen and Annette Waylett, spent the 1983 Antarctic winter at Palmer Station, Antarctica, gathering data on atmospheric chlorofluorocarbons, ozone, carbon dioxide, methane and nitrous oxide, together with supporting meteorological observations. The data were to have been included in master's degree dissertations.

Stephen Waylett had already failed one essential course for his degree and had not completed another when the couple left, although both difficulties could have been rectified later, according to a former supervisor.

The couple did supply the university with weekly averages of measurements during the period of observations, so there seems little doubt that measurements were correctly made. The university contends that, as the intermediary which paid for the research, it owns the data. University officials say they have offered to let the couple keep a copy of the data and that the Wayletts' research contribution would be acknowledged in any future use of it.

NSF's legal department says it knows of no previous instance of a researcher refusing to release data gathered under a foundation grant. The grant conditions do not apparently specify who formally owns data gathered; that they will be made public is simply presumed.

NSF has said it will stay out of the dispute between the university and the Wayletts, at least until the final report from the \$600,000 research project falls due next summer. Although final reports are often fairly brief, the university will need the Wayletts' data, which represent year two of a four-year series, for statistical comparisons, according to the project's principal investigator.

Those who know the Wayletts are at a loss to account for their behaviour, although they did apparently have some complaints about their tuition. The couple's whereabouts, and that of the data, are now unknown. A temporary restraining order issued by a federal court judge forbidding the couple to destroy or damage the data has still not been served after two weeks.

Tim Beardsley

Sakharov

Does no news mean bad news?

Dr Andrei Sakharov may have been taken from his Gor'kii apartment to an unknown destination, a former Soviet dissident, the writer Lev Kopelev, claimed last week. Kopelev, who now lives in West Germany, told correspondents that the duty policeman who had been constantly stationed outside the Gor'kii apartment block in which Sakharov has been held had been removed in mid-August. When questioned by Dr Efrem Yankelevich, Sakharov's stepson-in-law and his representative abroad, Kopelev said that a recent visitor to Moscow had been told of it by a dissident source.

The last definite news of either Sakharov or his wife Elena Bonner was a postcard from the latter dated 4 July. This postcard, and one dated 29 June, broke an enforced silence of more than two months, during which, judging from the numbering of the postcards, 28 cards had been posted only to disappear *en route*. In both these cards, Mrs Bonner traced over the pronoun "Ya" (I) and the verbal endings indicating the first person singular, presumably to contrast, by implication, her condition ("I feel, physically, in good shape") with that of her husband, who at that time was on hunger strike in hospital.

At the end of June, the West German newspaper *Bild* came into possession of two videotapes showing Sakharov as a patient in the Semashko Hospital in Gor'kii, in which, *inter alia*, Sakharov was shown reading Western scientific articles and news magazines whose dates suggest that Sakharov was still alive in mid-June. A further video released through *Bild* indicated that Sakharov was discharged from the hospital on 11 July, but, says Dr Yankelevich, the evidence for the date was, in this case, only a notice on the hospital wall. According to the commentary, the *Bild* tapes were made specifically to refute Western fears that Sakharov was being medically mistreated.

Such reassurances were probably associated with the then impending tenth anniversary of the Helsinki Final Act on 1 August, and with the decision of the Soviet authorities, relayed to US Senator Paul Simon through the president of the Soviet Academy of Sciences, Dr Anatolii Aleksandrov, that it would be a violation of the Non-Proliferation Treaty to let Sakharov go abroad, since he could disclose atomic secrets to other governments and private organizations, "including terrorist groups".

If, indeed, the story of the vanishing policeman is true, and the Sakharovs have, indeed, been removed from Gor'kii, then the palliative was only temporary, and new fears for the couple's safety may well be justified.

Vera Rich

Framatome joins the fold

FRAMATOME, the French nuclear company which is the largest constructor of nuclear reactors outside the United States, has been taken over by a French nationalized group, the Compagnie Générale Électrique (CGE), a move that given the French state essentially total control of the nation's nuclear industry.

Framatome not only constructs the nuclear component of French pressurized water reactors (PWRs), but has an affiliate Novatome, the constructor of the French fast breeder Superphenix. CGE itself controls both Alsthom Atlantique which makes the turbogenerators for the reactors and Câbles de Lyon which provides the electrical cabling. Moreover, the civil engineers Dumez, involved in the construction of the buildings for many French power stations, is to become a minority (10 per cent) shareholder in Framatome, and the national atomic energy authority, the Commissariat à l'Énergie Atomique (CEA), will take 35 per cent. CGE will be the leading shareholder with 40 per cent, the national electricity utility Électricité de France (EDF) will take 10 per cent "to see the bills", and Framatome staff will have the remaining 5 per cent.

The reconstruction of Framatome was necessary because of the collapse last year of Creusot-Loire, the private French steel giant, which held 50 per cent of Framatome (CEA had the other 50 per cent), and which the French government refused to bail out. This led to long discussions over the future of Framatome, clouded by the end of major purchasing of PWRs by EDF. For EDF, Framatome expects to be constructing four nuclear systems (pressure vessels and associated steam generators)

next year, but only two in 1987, two in 1988, two in 1989 and then one a year.

Orders may pick up during the late 1990s, when EDF will want to replace its first PWRs (which went on line in the mid-1970s), but meanwhile the company must either rely on the slack export market or diversify. Profits are expected to amount to FF 800 million (£7 million) over the next four years, but are somewhat unpredictable thereafter. Diversification into computer software and desalinization had begun before the takeover, but the size of the CGE group (second only to Renault in France) should now simplify redeployment of the 7,600 Framatome staff.

Framatome may also be better placed to compete for the few nuclear contracts now available abroad. Framatome has feared that competitors would be able to exploit — and were exploiting — its anomalous position after the Creusot-Loire collapse. But there must be doubt as to whether the now monolithic structure of the French nuclear enterprise will prove an asset or a hindrance.

In the past, governments and utilities have tended to diversify risks by placing orders for different parts of a power station (nuclear, conventional, civil) with different companies and even different countries, and it is pointed out in France that the almost equally monolithic German nuclear constructor, Kraftwerk Union, has not had an export order since 1975. In France, however, the now closer government ties with nuclear construction — although always close before — may not harm export prospects in what was always a highly politicized market.

Robert Walgate