interest in controlling the Middle East.

The PetroStudies group finds that a recent 11-20 fold rise in the reference price of oil, from $0.75 — $1.50 to $17 — $20 per barrel, will correct the "systematic underexploitation of Soviet oilfields over the past thirty years". The reference price is the figure planners use to assess the cost of opening new oil fields, compared with the cost of intensively developing existing ones. The higher reference price represents a recognition by Soviet planners that development of new oil fields has created unacceptable pressures on capital, labour and material, necessitating a new economic approach to oil development. The PetroStudies report says that the new policy means that "there is no danger whatsoever that the USSR will be forced to become a net importer of oil this decade and highly improbable that it will become so in the 1990s".

An additional feature of the new policy will be a decline in Soviet imports of American oilfield machinery, the report says. Intensive mining of existing fields by many wells will substitute for high capacity pumping from a few wells, a policy which will significantly decrease Soviet dependence on US-produced high capacity oil pumps.

According to the *International Herald Tribune*, diplomatic sources have suggested that the PetroStudies' findings may be "part of a Soviet campaign of disinformation". M Jermol of PetroStudies explained that their analysis is based on original Soviet sources obtained though normal institutional channels. The materials include Russian texts of official oil industry documents, specialised books and journal articles, reports from Soviet research institutes, and petroleum conferences, extending back over ten years. "It would be impossible to base a report like this on a few privileged documents" said Jermol.

Joe Schwarz

**"Soviet oil production reform of 1980 and its potential", PetroStudies Co., Sjoblads vag 27, S-21370 Malmo, Sweden. 260pp.*

Instruments

New homes for old instruments

Is Britain's scientific heritage being ignored and forgotten by its museums? Arthur Frank, a collector of scientific instruments, believes that it is. About half of his collection of instruments dating from the early eighteenth century, which runs into thousands, has been placed in British museums — mainly central museums in London and Edinburgh. But the other half is on display only in his garage in Jersey, while Mr Frank searches for more conventional homes, so far with little success.

There are more than 1,100 museums in Great Britain and Ireland, but Mr Frank says that fewer than a dozen of them take scientific instruments seriously. But they do appear to differ in their reactions. Some have bought or borrowed instruments from Mr Frank. Others have declined to do so either on the grounds that the instruments which he has available would not fit in well with existing collections or because they would not be able to afford the prices asked. But many, mainly provincial museums, have said that they are the wrong organisation to approach because they do not have the expertise to judge scientific instruments.

One of the few provincial museums to house part of the Frank collection, however, is the Museum and Art Gallery, Doncaster, Yorkshire. Mr J Barwick, the museum's director, had to draw on outside expertise to mount the exhibition. His interest in the Frank collection stemmed from his wish to display a selection of early mining and surveying instruments appropriate to an old mining and engineering town; the public response has now persuaded him also to borrow some of Mr Frank's microscopes and astronomical instruments and he is planning to extend this section of the museum.

Doncaster Museum's special interests may be exceptional. Elsewhere, according to one official, regional and municipal museums are likely to be more interested in a display of instruments representative of different types than of a specialist sub-collection from Mr Frank's garage.

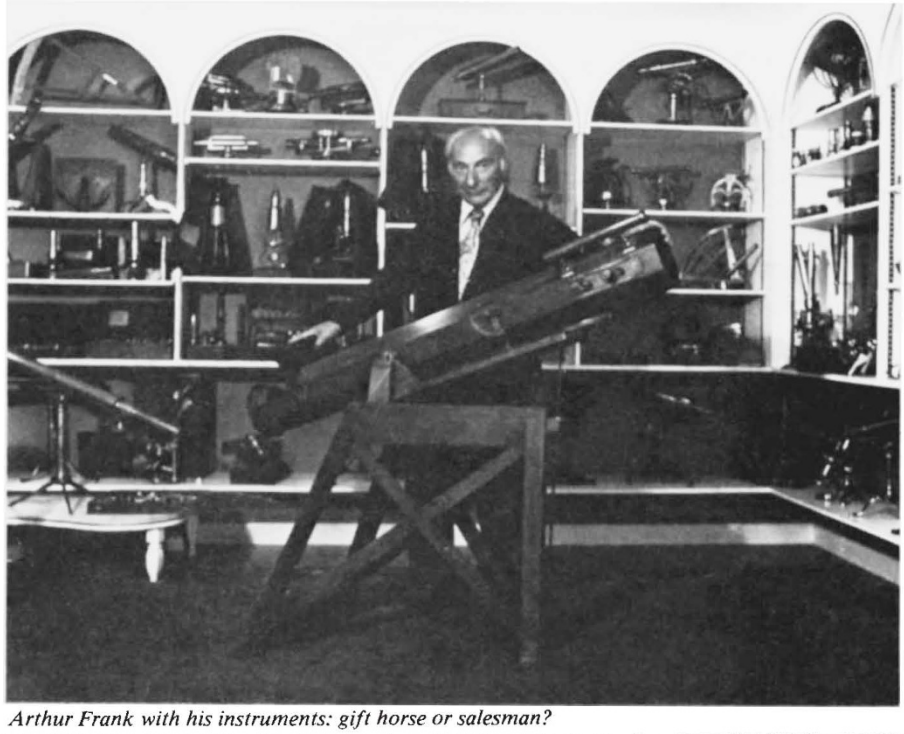
Mr Frank, nevertheless, is determined that his instruments should not be disposed of one by one. He also requires that recipients of objects from his collection should catalogue the instruments and put them all on display. He says that he is prepared to make gifts of them, lend them for twenty-one years, or sell them at two-thirds of the estimated value, dealing with learned societies as well as museums. One snag that may deter some museums is that Mr Frank's valuations seem high.

So far, the large specialist and national museums have been the chief recipients either loaning the instruments or more usually buying them under the two thirds of value offer. The Science Museum in London has about 1,500 of his cameras and accessories, and there is a permanent exhibition of field and opera glasses and of prismatic binoculars. Inevitably, however, such a museum is primarily concerned to fill gaps in its present collection.

Elsewhere in Britain, the Royal Scottish Museum in Edinburgh has a display showing the development of the achromatic microscope in the formative years 1800-1860 (and is also negotiating for the remaining Scottish instruments in the Frank collection). There is also a collection of astronomical and terrestrial telescopes at the Royal Observatory, Edinburgh.

The parts of the Frank collection not yet disposed of are strong on spectroscopic and stereoscopic devices, as well as early spectacles. He is especially proud of his Marshall microscope (*circa* 1700) and his Ramsden astronomical instruments from the late 1700s.

Judy Redfearn



Arthur Frank with his instruments: gift horse or salesman?

0028-0836/80/220181-01$01.00

© 1980 Macmillan Journals Ltd