

European microchips

Commission on horns of dilemma

THE European Commission finds itself in a cleft stick in trying to protect the interests of European semiconductor microchip manufacturers. What was deemed to be a breach of international trading agreements by Japan and the United States may constitute a serious case of dumping. The core of the difficulty is the pact signed in July between Japan and the United States that controls the prices of mass-produced memory chips (see *Nature* 320, 567; 1986).

The Commission's immediate reaction was to challenge the validity of the US-Japan agreement on the grounds that it is tantamount to a cartel and thus a breach of the rules of international trade as outlined by the General Agreement on Tariffs and Trade (GATT). The agreement also has features that seem to threaten the independence or commercial sovereignty of European member states.

The chip agreement was concluded at the eleventh hour, at a time when Japanese manufacturers were under the threat that tariffs would be imposed on memory semiconductors imported from Japan into the United States. The major US manufacturers, backed by the Department of Commerce, had insisted that chips were

being dumped on the US market.

The agreement went further in specifying that the chip trade would be monitored in third countries, including those of Europe, through which Japanese microchips might be imported into the United States. This seemed to the commission to be an extension of the extra-territoriality rules by which the United States has in recent years sought to regulate the use made of US technology in Europe. Under the agreement, even exports to the United States by off-shore subsidiaries of Japanese companies will be controlled, while US chip-makers are guaranteed favourable access to the Japanese domestic market.

The European Commission fears that the agreement will favour US over European companies. It also fears that one effect of the agreement will be to increase

the price of chips in Europe, thus giving a marketing edge to Asian and Pacific Basin manufacturers.

In the event, prices in Europe have not risen with the increases in the past few months in the United States, which is an embarrassment for the commission. Rather, some of the major European manufacturers of chips, through the European Electronic Components Manufacturers' Association (EECMA), have accused Japan of dumping cheap microchips in Europe, and have registered a complaint to that effect with the commission.

According to the secretary general of EECMA, Neville Lyons, "if a country takes on itself the dumping of goods, it should not be surprised if some counteraction is taken". EECMA insists that it does not seek an agreement similar to the US-Japanese accord but the imposition of a trade tariff. The complaint will formally be made to the commission within the next few weeks.

Bill Johnstone

Nobel chemistry

Molecular beams come through

THE Nobel committee for chemistry has singled out for this year's prize the technique for studying chemical reactions by the collision of molecular beams containing molecules whose mechanical state is well defined. The prize is shared by three people responsible for the crucial steps in the development of the technique, Professor Dudley Herschbach from Harvard University, Dr Yuan Tseh Lee, now at the University of California at Berkeley, and

enormously improved the scope of application of the technique by the use of mass spectrometers for the diagnosis of the reaction products. Polanyi, again independently, developed an infrared technique for the diagnosis of reaction products.

In the past 15 years, the applications of reacting molecular beams has been enormously extended, although the complexity of the equipment necessarily restricts the use made of the technique to a com-

Soviet Antarctic research

THE Soviet Union's Antarctic geophysical programme will continue and will even be "considerably expanded" in spite of the recent disappearance of the *Druzhnaya-1* station. According to Dr Evgenii Korotkevich, deputy director of the Institute of Arctic and Antarctic Research in Leningrad, there had been plans to work for many more years with the station, which was situated in the Weddell Sea region, near the Filchner and Ronne glaciers. The station was not normally staffed during the southern winter, and its disappearance (either down a crack in the ice or by drifting out to sea) was observed by satellite at the beginning of October. *Druzhnaya-1*, situated about 3 km from the edge of the Filchner glacier, came to grief when a slice of the glacier's 100-km-wide ice foot broke up and began moving out to sea.

Since it was established in 1975, the station had been the main base for Soviet geological and geophysical research, including the investigation of the Weddell Sea area to ascertain if oil or gas-bearing deposits were present. The 170 geologists due to arrive at the station as part of the 32nd Soviet Antarctic expedition at the end of October will now be deployed to the *Druzhnaya-2* and *Soyuz* stations. Further stations in the Antarctic will also be opened in the near future.

Vera Rich



Prizewinners Herschbach (left), Lee and Polanyi.

Professor John Polanyi from the University of Toronto.

Herschbach appears to have been, in 1962, the first to turn earlier tentative experiments with reacting molecular beams into the basis of the now widely practised technique. The first experiments involved the interaction of alkali atomic beams with those of simple molecules such as halogen hydrides. Polanyi's independent contribution, at this early stage, was the development of techniques diagnostic of the state of the reaction products.

For nearly a decade, the application of the technique was restricted to elementary variations of the reactions studied by Herschbach, but early in the 1970s, Herschbach in collaboration with Lee, then a post-doctoral fellow in his laboratory,

paratively small number of laboratories. It now appears possible to prepare beams of neutral molecules with well-determined kinetic energy which are homogenous in the sense that the vast majority of molecules are in well-defined states of vibration and rotation. Techniques of beam preparation have improved so that almost any material that will vaporize without molecular change can be reacted with other materials.

The benefits of the techniques stem largely from the lack of ambiguity in the interpretation of the results which are obtained. One physical chemist explained this week that the feasibility of being able to account for the activation energy of a chemical reaction not by some kind of 'Boltzmann smearing' over all possible states but by the identification of those states that would react and those which were indifferent helped to fix ideas in people's minds. In due course, he said, it would be necessary to rethink the way students are taught about reaction mechanisms. □