

research and data analysis.

Some argued last week that, at a time when both research councils are under financial stress, it would be better for geophysicists to compete more strenuously with other disciplines for existing research council funds. The current structure of the councils means, for example, that the radar altimetry project is in direct competition

with big spenders such as the X-ray astronomers.

Sir Robert Boyd of the Mullard Space Science Laboratory, himself an X-ray astronomer, argued that in times of shortage, a greater proportion of the money available should go towards such projects as radar altimetry which promise important scientific information and also

provide more direct industrial and technological spin-off than some of the more glamorous astronomical projects. However, calls from some speakers for more open warfare within the grant-awarding committees were dismissed by others as being potentially disastrous for science as a whole.

Philip Campbell

US personal computers

Shakeout comes at last

Washington

THE long-forecast shake-up in the overcrowded personal computer industry arrived with a vengeance last week. Texas Instruments announced that it was pulling out of the home computer market and ending production of its 99/4A home computer. A day later, the International Business Machines Corporation (IBM) unveiled its Personal Computer Junior (PCjr), the product previously codenamed the Peanut and the cause of turbulent trading on the stock market for the past two months.

IBM's PCjr, which will be on sale early next year, will cost \$700 and is designed to complement the company's more powerful Personal Computer, which has already captured more than a quarter of the market for machines in the \$1,000 to \$5,000 price range. The basic machine will have 64



kbytes of memory but a 128 kbyte version with a disk drive will be available for \$1,300. A key selling-point will be the fact that the PCjr is compatible with the Personal Computer, so that buyers who already use the Personal Computer in their offices will be able to use many of the same programs at home.

The fact that the PCjr has drawn mixed reviews from trade experts hardly matters. IBM's name and its growing market dominance should ensure that the new machine will sell well and that software publishers will increase their efforts to make their programs IBM-compatible. Since introducing its Personal Computer two years ago, IBM has already forced Apple, previously the leader in the small computer market, very much into second place. Apple's market share has fallen from 29 per cent in 1981 to 17 per cent this year.

With the success of IBM virtually

guaranteed, other competitors are beginning to lead the field. The Osborne Computer Corporation, one of the pioneers of small computers, declared bankruptcy last month. And Texas Instruments' decision to leave the home computer market is a sign that even large corporations have become disenchanted. The company's withdrawal sent the price of its shares soaring from \$22.75 to \$124.50, but added little to the value of the shares of its principal rivals in the small computer market, Commodore and Atari (a subsidiary of the Warner Corporation).

Texas Instruments' 99/4A was a popular machine but one that became a victim of the sharp price-cutting war that has characterized the home computer industry. By concentrating on its strengths in semiconductor manufacture and defence electronics, the company hopes to compensate for a \$200 million loss this year which it attributes to poor sales of home computers.

A reduction in the number of companies manufacturing home computers may be good news for consumers. Although less competition may allow prices to rise, standardization of the industry around the hardware of several major companies will

enable software publishers to write programs for markets that have until now been fragmented. Educational software, for example, has been relatively neglected. In congressional hearings recently, Secretary of Education Terrel Bell said the incompatibility of the computers bought by schools had hindered the development of high quality teaching programs.

The drive towards standardization is not confined to the United States, however. In Japan, where the absence of standardized software has been the bane of the home computer industry, five companies — Hitachi, Matsushita, Mitsubishi, Sanyo and Toshiba — have introduced new computers standardized around the MSX operating system produced by a US company, the Microsoft Corporation of Bellevue, Washington.

William Gates, Microsoft's chairman, said the arrangement would open the Japanese home computer market to software companies in the United States and Europe. The US Department of Commerce, however, is concerned about the corollary: it will also open the United States home computer market to Japanese companies. Clyde Prestowitz, an official of the Department of Commerce, said both Apple and the Commodore Corporation had complained about the implications of the Microsoft deal.

Peter David

Nature index of biotechnology stocks

12-Month high	12-Month low	Company	Close previous month	Close 28 Oct.	Change
23 1/4	10 3/4	Biogen (Switzerland)	14 1/4	12	-2 1/4
6 1/4	2	Bio-Logicals (Canada)	2 1/2	2 1/8	-3/8
16 1/8	7 1/4	Bio-Response (USA)	14 7/8	11 3/4	-3 1/8
19	11 5/8	Cetus (USA)	12 7/8	11 1/8	-1 1/4
15 1/2	8 7/8	Collaborative Research (USA)	11 1/8	9 1/2	-1 5/8
39 7/8	15	Damon (USA)	25 1/2	20 1/8	-5 3/8
34 1/4	16 3/8	Enzo-Biochem (USA)	25 1/2	24 1/4	-1 1/4
18 7/8	8 5/8	Flow General (USA)	8 3/4	9 1/4	+ 1/2
49 3/4	25 7/8	Genentech (USA)	35 1/2	26 1/2	-9
17 3/4	8 3/4	Genetic Systems (USA)	11 1/2	9 1/4	-2 1/4
23 1/4	12 7/8	Genex (USA)	18 3/4	15 1/2	-3 1/4
31	19 1/2	Hybritech (USA)	19 3/4	22 1/2	+ 2 3/4
22 1/4	12 1/4	Molecular Genetics (USA)	17	13 1/4	-3 3/4
23 1/4	13	Monoclonal Antibodies (USA)	14	14 1/4	+ 1/4
73 1/2	42	Novo Industri A/S (Denmark)	67	66	-1
30 1/8	13 1/2	Pharmacia (Sweden)	26 1/2	25 1/8	-1 3/8

Closing prices are for the last Friday of the month. For over-the-counter stocks, bid price is quoted; for stocks on the American and New York exchanges, the transaction price. *Nature's* weighted index of biotechnology stocks stood at 203 on 28 October, compared with 221 a month earlier. Data from E.F. Hutton, Inc.