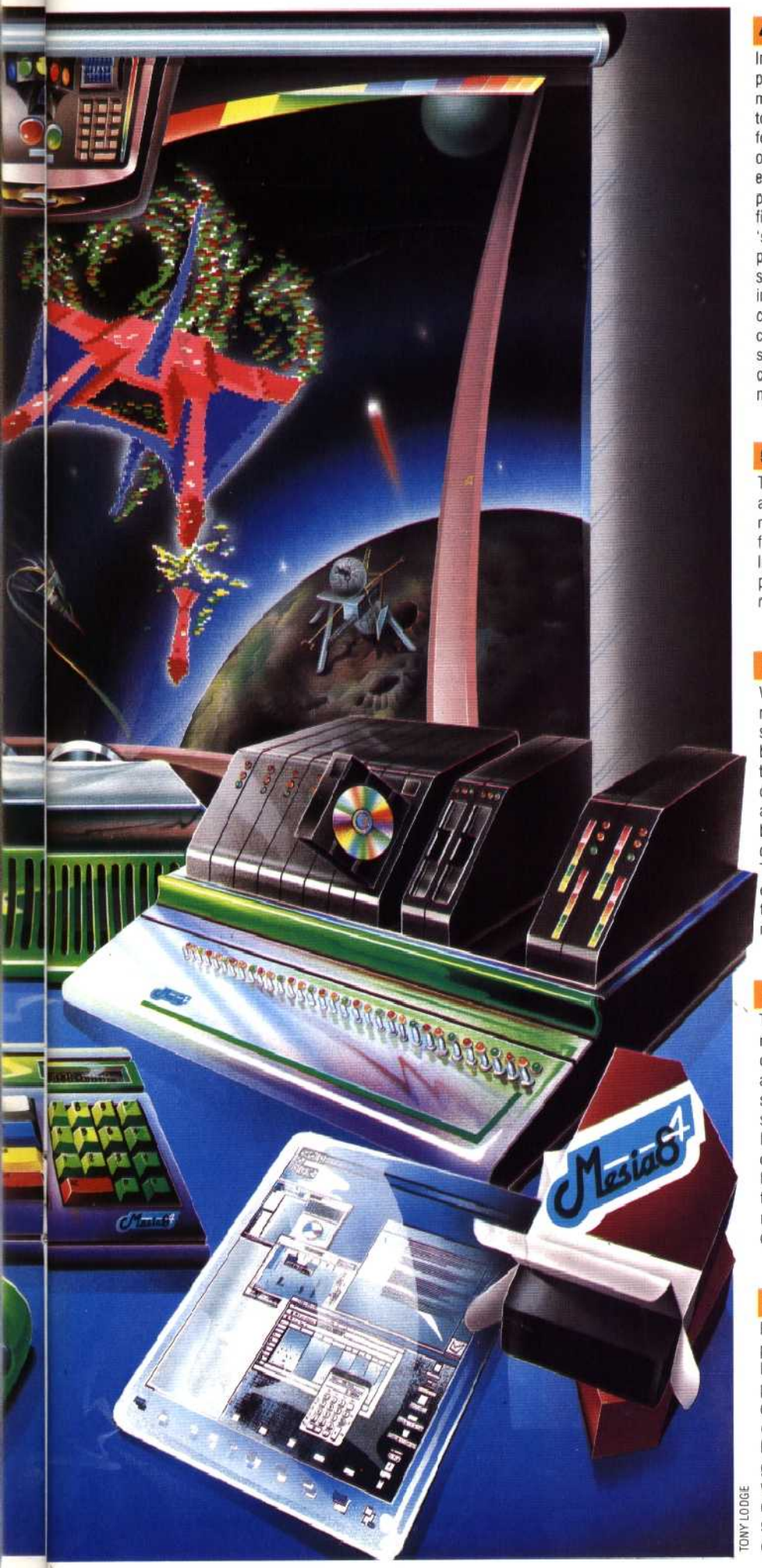

TONY LODGE

4 Alternative Processors

In addition to the main 32-bit processor, it is likely that the micro of the 1990's will be host to additional processors in the form of plug-in modules. Some of the processing — for example, the operation of a particular peripheral or sorting a file of data — can then be 'subcontracted' by the main processor to the most suitable sub-processor. Alternatively, inexpensive plug-in modules could emulate the classic computers of the 1980's, so that software from any other computer could be run without modification

5 Random Access Memory

The 32-bit processor can address up to almost 4 300 million memory locations — a far cry from the 65,536-byte limit imposed by the eight-bit processors that brought microcomputers into the home

6 Communications

While dish aerials for the reception of signals from satellites will be commonplace by the 1990's and most telephone channels will be digitised, rather than relying on analogue signals, there will still be a need to regulate the speed of transmission and reception. These communications controllers will perform some of the control functions of today's modulator/demodulators

7 Power Supply

The increased load and the multiplicity of devices connected to the microcomputer are likely to require a significantly greater power supply than those in use today. It will incorporate smoothing circuits and rechargeable battery back-up, so that mains fluctuations or power failures do not cause data to be lost or corrupted

8 Portable Screen

Flat-screen technology — probably involving a fast-acting liquid crystal matrix and perhaps connected to the central processor by an infra-red (or even microwave) link — may be employed to display text and graphic matter. If this device were touch-sensitive, too, it could double as a menu-selection board and bit-pad or digitiser

9 CDROM

The Compact Disk ROM, which uses a laser beam to read optically-encoded information, is likely to replace conventional ROM cartridges because of its much greater capacity — a typical CDROM will hold four megabytes

10 Floppy Diskettes

By the end of the decade floppy diskettes should have evolved to compete directly with Winchester disks, both in speed and data-packing densities. At the same time they should reduce in diameter to less than the current minimum of 3 ins

11 Front Panel

On the early computers, before the advent of high-level languages and keyboards, programs had to be entered in binary notation by means of the front panel — a line of lights and switches giving the user control over every bit of the address, data and control buses. For experienced machine code enthusiasts, a front panel can still be a useful tool, so this idea might re-emerge on future home computers.

12 Infra-Red Mice

The IBM PC-Junior already makes use of infra-red radiation to transfer data from keyboard to computer without a cable link. This technology could provide the interconnection between all peripherals, including mice, thereby eliminating the 'spaghetti effect'. Both left- and right-handed models will, of course, be available

13 32-Bit Microprocessors

The first 32-bit microprocessor-based home computers appeared in 1983, but were forced to rely on 16- or even eight-bit data buses to maintain compatibility with existing memory and peripheral chips, and thus could not deliver the power they promised. With the introduction of devices such as Motorola's 68032 chip, which offers 32-bit processing and 32-bit data transfer, the speed and data-handling capabilities of these large-capacity microprocessors will become the accepted standard. Many minicomputers costing tens of thousands of pounds have 32-bit processors