European Commission responsible for industry and technology.

Outlining the makings of a European computer policy, Mr Layton told the committee that although IBM dominates the European computer market there are specific areas where IBM can be beaten by European companies. A large company like IBM needs disciplining by effective competition, he said, and Europe must provide this, although the United States and Japanese markets will have to be penetrated if a large European computer company is to become viable.

The five leading companies in Europe are ICL, Philips, Siemens, CII and AEG-Nixdorf. Philips, Siemens and CII have already discussed the possibilities of developing a new range of computers together, and Mr Layton suggested that ICL and AEG-Nixdorf would also make a good partnership. "If ICL can find a European partner with whom it can merge effectively the commission would warmly welcome it."

Mr Layton also discussed support given the national computer companies from public funds in Britain, France and West Germany. Such support is clearly against the spirit and letter of the Treaty of Rome, he said, but "in fact the aids are tolerated by the commission and protective national procurement practices continue at the present time". This situation cannot continue indefinitely and the question is whether the national preferential policies are to be replaced by a community preferential policy—at least for a time. Massive government support in the form of orders accounts for IBM's success in the United States, and without this support Mr Layton does not believe the European national companies would be viable.

ESRO

Choosing the Next Step

from a Correspondent

THE European Space Research Organization is to decide by the end of this month which satellite to launch later this decade to follow COS-B and GEOS. The three options—only one of which will be chosen this month although the others may be added later—were presented at a lively symposium in Frascati last week to a wide selection of European scientists.

The Venus orbiter would investigate the atmosphere and surface of Venus, HELOS (Highly Eccentric Lunar Occultation Satellite) would provide observations of X-ray sources, and the mother–daughter projects would study the earth's magnetosphere and the adjacent regions of interplanetary space.

The Venus orbiter mission would link up with NASA's proposed biennial Venus project which includes a probe that will explore the Venusian atmosphere. The orbiter would be provided by ESRO and the experiments selected by a joint NASA/ESRO team. Venus is of particular interest to geophysicists as its mass and radius are the closest of all the planets to those of the Earth. It is also hoped that studies of the comparatively simple circulation patterns in the atmosphere of Venus will lead to a greater understanding of the more complex circulation patterns on Earth.

The original concept of the HELOS mission (see *Nature*, **228**, 756; 1970) used moon occultations to obtain positions and structures of X-ray sources with high precision. An off-set mode now offers the additional capability of making continuous observations over periods of many hours. Variable X-ray sources can thus be observed from a satellite, which because of its eccentric orbit, does not suffer from the frequent interruptions of the radiation belt and Earth occultations as it would be in a near Earth orbit. HELOS is a purely European project complementary to NASA's X-ray programme. However there are now difficulties in the funding of NASA's high energy atronomical observatory in the late 1970s.

The mother–daughter project involves the launch of two satellites on one Thor Delta rocket. They will be launched in conjunction with NASA's IMP programme to combine with its heliocentric satellite which will be in solar orbit close to the libration point at 250 Earth radii. These missions should increase the understanding of the physics of the magnetized plasma in which the Earth is embedded. The multiple satellite mission will help unravel the spatial and temporal variations of the radiation belt, the magnetopause, the bow shock and magnetotail. When the mother and daughter are within the magnetosphere the heliocentric spacecraft will act as the monitor of the solar wind and thus establish the relationship between such phenomena as substorms with changes in the solar wind.

The launch dates for the three satellites if they are chosen later this month are mid-1977 for the mother–daughter satellite, mid-1978 for the Venus orbiter and the end of 1977 for HELOS. Estimates of the costs of the three satellites are not yet available.

COMPUTERS

No Freeze

THE Computer Board for Universities and Research Councils spent £9.3 million in 1971–72, a twenty-six per cent increase over the previous year. Not only did the expenditure go up by this amount but the spending in 1971–72 was almost £200,000 less than the board allocated for the year. Of this total £6.23 million was spent on hardware, £2.7 million on recurrent costs and only £0.38 million on buildings (Cmnd. 5220, HMSO, £0.16).

Computer capacity in British universities is now ten times greater than it was in 1965, and the board estimates that by March 1974 more than twenty-five times the 1965 capacity will be available—a growth rate of about 40 per cent a year. But the board says that this increase is only a lower estimate of the available running time chiefly because the quality of computer performance has increased during the past decade and users now have better access to the facilities.

During the past two years, the Computer Board has authorized the buying of eighteen new computers of which twelve have already been delivered. The new installations include the CDC 7600 at the University of London which is also providing facilities for other universities in the south-east of England, the CDC 7600 and its linked partner the ICL 1906A at the University of Manchester, the 1906A computers installed at the Universities of Birmingham, Leeds, Nottingham and Oxford and the IBM 370/165 at the University of Cambridge. The Cambridge machine is the only IBM machine installed recently, and the board says that the

Support a Tree

Two £50 prizes are being offered by the Crown Estate Commissioners for the best designed tree support and guard. This exercise, which coincides with Plant a Tree Year 1973, will ensure that trees planted this year will have the maximum chance of survival.

The commissioners are looking for two types of support/guard one primarily for local use, a do-it-yourself product that would be manufactured from timber or other easily accessible materials, and a second type that could possibly be manufactured and widely sold.

The closing date for the competition is May 21, when plans must be submitted to the Crown Estate Office. But by June 18 a model of the support/guard has to be delivered to the Royal Show at the National Agricultural Centre at Stoneleigh in Warwickshire.

The support/guard has to achieve two objectives. First it must support a tree until it can establish itself and second it must be proof against rabbits, hares and stock for not less than ten years.