lems, cooperation in research and the interchange of information on research and development and mutual training programmes. The list of basic problems to be tackled using the "most effective forms of mutual cooperation" is long and somewhat vague in its terms, but seems to concentrate mainly on biology and biophysics, with special reference to agriculture and food production, mechanization, automation and computers, more efficient use of natural resources, including marine resources (the Pacific Ocean is especially mentioned, in a manner almost suggesting that it is a private preserve of COMECON), semi-conductors, and the demands of metallurgy and industry in general.

Much attention is given to the "organizational forms and legal principles" of the proposed cooperation, but no concrete projects are indicated. Information exchange is greatly emphasized, and, on the basis of the existing COMECON International Centre of Scientific and Technical Information in Moscow, a system of information exchange will be set up during 1972–73. The production of scientific instruments and apparatus will be one of the first fields to be reorganized and, during the next year, proposals are to be worked out by the member countries on the establishment of international societies for the production of high-precision instruments (including apparatus for nuclear research) and the establishment of a coordinating centre for cooperation on biomedical and clinical research equipment. Production of research materials is also to be integrated, including materials for optical spectroscopy, experimental physiology and high vacuum work.

Although the programme speaks throughout of the "member countries" and the "interested countries" involved in the various cooperative projects, it is inevitable that the Soviet Union will play the leading part in the planning. Although a COMECON scientific centre has sometimes been established outside the Soviet Union (Weed and Pest Control at Poznań, Timber Research at Bratislava), the location of the Information Centre in Moscow will tend to orientate all major planning towards Moscow.

EUROPEAN RESEARCH

Aigrain Projects Persist

PLANS have now been laid for a Pan-European conference on scientific and technical research in Brussels in November. The initiative comes from the Commission of the European Communities, and in particular from the technical working groups under Mr Pierre Aigrain which have in the past two years sought to define the fields in which European countries might collaborate on scientific and technical projects. At a meeting in Brussels at the end of July, representatives of nineteen countries in Europe picked out a number of particular problems from the shopping list which has been accumulating since 1969. The intention is that there should be a conference in the second half of September to settle questions such as the organization and financing of joint research projects, and that the conference of ministers in November should then set up a series of specific collaborative projects on which work could begin immediately.

According to an announcement in Brussels, the original list of proposals has been narrowed down—a term which must be understood to include selection as well as refinement—to a number of specific issues. It has, for example, been decided that the most tangible way of making progress in collaborative data processing is to set up a European Data Transmission Network and then a program library. This, as it happens, is a project developed by the staff of the European Communities on the instructions of the Hague Conference on technical collaboration in September 1969. It is now proposed that the collaboration of European states should be invited in long-term studies of passenger transport, what are called "various means of combating nuisances", a term now understood to include not merely the properties of sulphur in the atmosphere but the treatment of mud and other solid waste. A newish departure is a series of projects in metallurgical research. There is talk of collaboration on radio wave propagation.

One striking property of the shopping list now current is the disappearance of some of the more ambitious projects such as the scheme for the development of a large computer. This, as it has turned out, is at once such a risky venture and one that promises such large commercial gain that the companies able to make a contribution to the project have preferred to get together among themselves and—prudently—to enlist American interest as well. Similarly, the original proposal for collaborative research in telecommunications is conspicuous by its absence—nobody pretends that Europe has too much good work of this kind, but it is clear that there are too many companies in Europe who think of themselves, perhaps with justice, as potential competitors of AT&T for collaboration to be easy at this stage. And, of course, from the beginning of these discussions about the future of European collaboration on technical developments, it has been assumed that, having burned its fingers with Euratom, the European Community would not for the time being be able to turn its attention to fostering collaboration in the development of nuclear reactors. That is a stable door that nobody has the courage to shut even if the horse has not yet bolted.

HOVERCRAFT

How Fast for Hovertrain?

WITH the delivery this week from Vickers's Swindon factory of the first full-scale British tracked hovercraft, a new phase in the British development of this novel type of high speed surface travel is initiated. So far, the building programme of government-financed Tracked Hovercraft Limited (THL) at Cambridge has taken rather longer than scheduled for contractors to build a preliminary three miles of elevated box-beam track along the bank of a disused seventeenth century canal on the nearby Fens. In parallel, at the Cambridge laboratory, a variety of scale trials and studies of fundamental design features of the proposed vehicle have taken place, particularly concentrating on the specially developed single-sided linear electric motor for propulsion and the characteristics of the table-top sized hoverpads that will provide both lift and guidance.

The newly delivered 75 foot car is being equipped at a trackside workshop at the Erith terminal of the test monorail. All the interior equipment, the hoverpads and the linear motor installation are being handled by THL staff. The fitting out is expected to take some two months. The craft will then weigh 51 tons. Trials on track will then start. In view of the short length so far completed, the RTV3L vehicle is not intended to exceed 150 m.p.h. this year though rated for 300 m.p.h. (450 k.p.h.). The hope is to extend the track to five or eight miles next year when speeds up to 250 m.p.h. can be attempted. The craft will travel without a driver or passengers during the trials period. It is more efficient to control it electronically from the trackside and to use the interior space for every conceivable instrumentation so that no feature of "ride", vibration, acceleration, braking and so forth goes unrecorded.

There is one question to be answered: having received delivery of a 300 m.p.h. vehicle, is THL going to be able to exploit it? It seems to depend on a further subvention from government for extending the track to at least eight miles: eighteen were originally in view. The £3½ million initial investment is not yet exhausted, but by the end of 1971 the need of further investment will be becoming urgent. So far the government has studiously avoided committing itself in any way.