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** The senior officials representing the 19 European countries which have been invited by the Community to give an opinion on various projects for SCIENTIFIC AND TECHNICAL COOPERATION (see "Research and Technology" No. 64) held an important meeting in Brussels on 4 and 5 May, in the presence of representatives of the Commission of the European Communities, with the aim of examining the state of progress of the work of the experts in the seven priority sectors (metallurgy, data processing, telecommunications, new means of transport, pollution, oceanography, meteorology). They heard reports showing that it would be possible for a European Ministerial Conference to take CONCRETE DECISIONS ON THE IMPLEMENTATION OF A FIRST SET of cooperative projects.

The Ministerial Conference could be held in November 1971. The senior officials will meet again on 15 and 16 July and then on 20 and 21 September in order to prepare it, and in particular to regroup the projects chosen in the following three major categories:

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The information and articles published in this Bulletin concern European scientific cooperation and industrial development in Europe. Hence they are not simply confined to reports on the decisions or views of the Commission of the European Communities, but cover the whole field of questions discussed in the different circles concerned.

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- concerted projects (particularly in the metallurgical sector);

- projects for the coordination of programmes (e.g., standardization of meteorological instruments, and an oceanographic measuring network);

- projects entailing joint financial backing and a concentration of technical resources (e.g., a meteorological computing centre and a program library, at the appropriate time).

** Having regard to the latest discussions which it has had with the representatives of the Member States, and with reference to the present state of radiobiological research, the Commission of the European Communities recently forwarded the Council a communication designed to amend its previous proposals (see "Research and Technology" No. 57) for a MULTIANNUAL BIOLOGY AND HEALTH PROTECTION PROGRAMME. This five-year programme is divided into the following two main parts:

- research on radiation protection (including a major project on the study of the delayed effects of radiation), with a budget of 19,885 million u.a. over five years;

- research on the adaptation of nuclear techniques with a view to their application to agricultural and medical research, with a budget totalling 6,936 million u.a. over five years.

ANNEX 1 contains a short note on STUDIES ON THE DELAYED EFFECTS ON RADIATION, which the Commission of the European Communities proposes to centre on a group of European laboratories recently set up for this purpose.

** DECLARATIONS OF INVESTMENT received by the Commission of the European Communities for the STEEL INDUSTRY ran at a record figure of 4,063 million u.a. in 1970. Investment has been very heavy in all sectors. The table below shows the trend of estimated expenditure (in millions of u.a.) since the date of the implementation of the provisions of the Treaty of the European Coal and Steel Community (ECSC) designed to promote a coordinated development of investment:

Year	Value
1956	647
1960	1,808
1965	509
1969	1,848
1970	4,047
1971	244 (3 months)

The upward trend in investments which began in 1969 was followed after mid-1970 by a marked decline. However, the information which has hitherto reached the Commission of the European Communities suggests that this decline should not seriously affect the implementation of the important decisions taken by firms during 1969 and the first half of 1970; these decisions should lead to a considerable increase in real investment expenditure and output potential, although with a delay which might extend over several years.

The Memorandum on the general aims of the Community's steel industry for the years 1975-80, which has just been forwarded to the Consultative Committee of the ECSC, examines the question as to whether it is possible in this sector to avoid having a stop-go sequence of phases of keen investment and phases in which, just when the new production capacity due to this investment is beginning to appear, activity takes a sudden downward turn.

** The need to ensure free competition imposes LIMITATIONS ON COOPERATIVE AGREEMENTS on research and development between two companies. The Commission of the European Communities recently defined its position on this subject, when dealing with an individual case. ANNEX 2 contains a summary of this affair.

** The FRENCH ATOMIC ENERGY COMMISSION (CEA) plans to carry out in 1971 a new series of experiments at the CENTRAL BUREAU FOR NUCLEAR MEASUREMENTS (CBNM), at the Geel establishment of the Joint Research Centre.

The experiments carried out at the CBNM by a team of CEA researchers in 1970 have proved particularly interesting: they are concerned with the measurement of the neutron spectra produced by a subcritical fast-neutron multiplier assembly previously designed and built by the specialists of the Centre of Nuclear Studies at Cadarache, France. This device, which amounts to a reactor core, was excited periodically by a series of neutron impulses from a conventional uranium target arranged against one of its faces and bombarded by the electron beam of the CBNM linear accelerator.

This first series of measurements forms part of the CEA research and development programme on fast-neutron reactor physics and more particularly of the part of this programme connected with neutron spectrometry. The CBNM was chosen for this work because it alone among the laboratories of the six countries possesses a powerful linear accelerator together with a large-scale target room capable of housing such large subcritical masses.

** In reply to a written question from Mr Vredeling, a Dutch member of the European Parliament concerning the MERCURY CONTENT IN FISH, the Commission of the European Communities states that the problem of the pollution of aquatic media by micropollutants, including mercury and its compounds, is receiving its attention. The data at the disposal of the Commission show that significant concentrations of mercury have been found in the flesh of certain fish, of both the freshwater and the saltwater varieties.

The Commission of the European Communities considers that it is desirable to draw up scientifically-based standards for the maximum permissible concentrations in fish, not only of mercury and its compounds, but also of the other toxic pollutants in the various media. It considers, however, that in the present state of the art, and in the absence of sufficient scientific data, it would be premature to fix standards for mercury.

** On 15 April representatives of the Commission of the European Communities and 18 specialists of the Member States of the Community attended a conference in Brussels on THE MONITORING OF NUCLEAR POWER PLANT COMPONENTS BY VIBRATION AND NOISE ANALYSIS, WITH A VIEW TO THE EARLY DETECTION OF POSSIBLE DAMAGE. The aim of the conference was to examine the possibilities of collaboration at Community level in this field.

Experience has shown that vibrations in major nuclear power plant components (such as the reactor-vessel and steam-turbine internals) can lead to prolonged outages. It may be presumed that appropriate monitoring methods and installations would make it possible to avoid or considerably reduce these incidents.

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The primary aim of the proposed collaboration is to compile an inventory and make a critical analysis of the resources available for such a monitoring system. It would then be possible on this basis to draw up recommendations for the future development of methods and equipment.

** The Committee on TECHNICAL IRON SMELTING RESEARCH of the European Coal and Steel Community met on 30 April at Maizières-les-Metz in France in order to pass an opinion on various research projects presented by Community institutes.

** Representatives of the Community Member States met in the Ispra establishment of the Joint Research Centre on 19 April to hold a technical discussion on research on STEELS FOR HIGH-TEMPERATURE USES; this work is being carried out in various Community metallurgical laboratories and is partly financed by the European Coal and Steel Community (ECSC).

Some preliminary results were presented of the study at present in progress at Ispra on the formation and propagation of microcracks in steels. This study is based on a new highly-sensitive method for the differential measurement of density developed at Ispra. This technique should make it possible to estimate accurately, on the basis of a "density/quantitative microscopic" examination, the utilization factor of a metal whose mechanical and thermal stress history is not exactly known. This method of "dating" the metal may have important practical economic advantages (e.g., by making it possible to control the effective utilization factor of major power plants by sampling structural elements).

** Experts from Community countries entrusted with the task of studying MINEWORKING TECHNIQUES were brought together by the Commission of the European Communities at Essen, Germany, on 6 and 7 May in order to examine various research programmes being carried out in specialist institutions of the Member States and partly financed by the European Coal and Steel Community (ECSC).

** In reply to a written question from Mr Adams, a German member of the European Parliament, the Commission of the European Communities states that a proposal for a directive concerning the EMISSION OF POLLUTANTS FROM DIESEL ENGINES in motor vehicles will be submitted to the Council as soon as possible. At the same time the Commission, while proposing concrete measures designed to reduce the noxious level of diesel engine exhaust gases, considers that they represent only one of the aspects of the pollution problem, and that it is bound to examine these questions as a whole. For this reason it has recently decided to prepare a programme of projects on environmental matters, and to set up the necessary administrative infrastructure.

** Four new TECHNICAL NOTES, each summarizing a result obtained under Euratom research programmes, have been issued by the Commission of the European Communities. The purpose of these texts is to enable industrial firms to assess the prospects for the industrial exploitation of the results described. The subjects of these new technical notes are as follows:

No. 1004. A furnace for the specimen table of a microscope
No. 609. A neutron chopper
No. 65. A technique for the adjustable extension of tensioned bolts
No. 842. A float for measuring liquid levels.

In addition, a LIST of the titles of Technical Notes disseminated during recent months has also just been published.

A Community Research Programme Proposed by
the Commission of the European Communities:

THE STUDY OF THE DELAYED EFFECTS OF RADIATION

A controversy has recently shaken American scientific circles: certain scientists estimated at 0.002 deaths per year the damage caused in the United States by the development of the use of nuclear energy; others put it at several thousand!

There is little doubt that the latter estimate is greatly exaggerated. But it is certain that the increase in the dose of radiation received by a certain fraction of the population entails some damage for the population and some risks for the individual. The extraordinary differences at present noted in the assessment of these risks have only one explanation: the extrapolation of the information at present available to us can lead to a very favourable or a very hostile attitude to the nuclear industry, depending upon the motivation of those who perform it. The only way of avoiding this kind of controversy is to accumulate a sufficient number of scientific data to reduce their extrapolation to a reasonable scatter band. This is also the only legitimate way of arriving at any relaxation of the radiation protection regulations, which would result in major savings for the nuclear industry.

It has long been known that radiation can ultimately cause tumours, leukemia, aplastic anaemia, cataract, malformations, etc. The problem is not, of course, to confirm these facts but to acquire a more accurate knowledge of their pathogenesis, and above all to determine the correlation between the doses and the effects and also of the factors capable of changing them. Only in this way can we establish completely unambiguous standards of exposure.

This is the aim which will be pursued by the "European Late Effects Project Group". This group consists of 14 institutes, 10 of which form part of the Community. With a view to efficiency and economy, and in the knowledge that the scope of the problem transcends national frontiers, these various institutes have together drawn up a research programme representing the consensus of specialist scientific opinion within the Community on this subject.

The Commission has from the outset watched and encouraged the preparation of this project, for it believes that the study of late effects is a typical Community responsibility. It also considers that such an undertaking could provide an excellent model and an apt instrument for the later study of the effects of other physical or chemical agents which affect our environment.

The research programme with which the Commission has recently asked the Council to associate the Community will try to find the answers to the following three questions:

1. What are the conditions which influence the appearance of post-irradiatory cancers (including leukemia), and what is their mechanism of action?

2. How do lesions of the vascular system contribute to dysplasic and dystrophic effects, and how do they affect the repair mechanism?

3. How do radiation-induced cell losses and/or alterations in the cellular functions affect highly specialized organs such as the central nervous system, the ovaries, etc.?

Cooperation Agreements on Research and Development May Distort Competition within the Common Market

The need to ensure free competition imposes limitations on cooperation agreements on research and development concluded between different companies, since the exploitation of the results must not lead to measures liable to restrict trade between the Member States.

The Commission recently defined its position on this subject in connection with a particular case. In November 1970, two major companies in different countries and of roughly equal economic importance notified the Commission of an agreement to create a joint subsidiary with a view to carrying out certain research and development projects. Under this agreement, the two firms would share equally in the financing and the management of this research company. In particular, it was stipulated that each of the contracting enterprises had the right to a cost-free non-exclusive ten-year licence for its principal market; for the market of its co-contractor, and for all other countries, it had the right to obtain from the joint research company a non-exclusive licence at a royalty of not more than 2% of the net sale price.

In December 1970 the Commission of the European Communities informed the contracting enterprises that the pooling of their research activities on this basis would restrict the free play of competition for the following reasons:

(1) The fact that the two companies each had privileged access (in the form of a cost-free licence) to the results of joint research on its main market, would tend to reserve this market to the firm concerned.

(2) As regards the other markets, if one only of the two contractors requested a licence, it alone would in practice be able in certain markets to exploit the results of the joint research. The parallel imports of other companies could be paralyzed or complicated were the joint subsidiary to institute proceedings against them for violating patent or knowhow rights. But such proceedings would be the outcome of an agreement or joint action by the two firms, acting through their subsidiary, and tending to restrict competition at distribution level. It would lead to "disguised restrictions on trade between the Member States" such as are condemned by the Treaty of the European Economic Community.

Following this declaration of objections the contracting companies informed the Commission of the European Communities that they had decided to suspend implementation of the agreement.