European organizations, such as the International Society of Cell Biology, the International Cell Research Organization, EMBO and national societies. The president of the new organization is Professor P. J. Gaillard of the Institute for Cell Biology and Histology, Leiden, and the vice-president is M. Chèvremont of the Institute for Histology at Liège. Other members of the executive committee are W. Bernhard, Institute for Scientific Cancer Research, Villejuif; L. M. Franks, Imperial Cancer Research Fund, London; J. Paul, Beatson Institute for Cancer Research, Glasgow; M. Feldman, Weitzmann Institute of Sciences, Rehovot; and A. Lima-de-Faria, Institute of Molecular Genetics, Lund.

AVALANCHES

Swiss Example to France

LAST week's avalanche disaster at Val d'Isère in the French Alps has provoked some searching questions on the adequacy of present monitoring and prevention techniques and on the amount of research that is being conducted on avalanches. Poor coordination of data is reflected in the almost total lack of statistics on avalanches in France, and the nine man enquiry set up by the French government to investigate the disaster may well feel compelled to suggest the setting up of a central institute for avalanches on similar lines to the one at Davos in Switzerland.

The Swiss research institute has an impressive record. More than a hundred major avalanches that have fallen in the last twenty years have caused only 24 deaths, and although no attempt is made to forecast individual avalanches a general pattern of snow conditions is formulated from statistics collected from fifty points throughout the country. Twenty or so physical quantities are monitored, including snow and air temperatures and snow hardness. All data are sent to the centre in Davos, which employs fifty people working full time to analyse and disseminate the information.

Although there are links between the warning services of the countries sharing the alpine land mass, it seems clear that research in France is much more fragmented than in Switzerland.

The CNRS (the government organ for scientific research) has a laboratory at Grenoble university for the study of snow, ice and avalanches, but funds seem to be too short for anything resembling a major programme. There is also a laboratory in the Haute Savoie which specializes in the melting of snow, and a group at the scientific university at Chambéry is carrying out a survey of all avalanches known. The possibility of diffusing avalanches with explosives is being investigated at the nuclear centre in Grenoble, but the Alps are probably too densely populated for such violent techniques.

ATOMIC PHYSICS

Anti-helium at Serpukhov

from our Soviet Correspondent

THE Soviet Institute of High Energy Physics reports that nuclei of "anti-helium" have been successfully produced by a team of young physicists at Serpukhov, under the direction of Professor Yu. D. Prokoshkin.

The experiment was carried out using a beam of protons accelerated to 70 GeV, aimed at a target within the vacuum chamber of the accelerator. The negatively charged particles generated by the collision of the protons with the target were deflected by a magnetic field and formed into a beam of defined momentum. A special complex detection apparatus was developed by the Institute of High Energy Physics for the identification of the secondary particles in this beam (several million per second); this apparatus comprises more than 50 high-speed detectors and a nanosecond electronics system containing some 500 elements.

The anti-helium nuclei were identified in several different ways. The charge on each particle passing through the apparatus was determined by two methods: by the ionization produced by the particle and by the Čerenkov radiation. The velocity of the particle was determined in three ways: by means of differential and threshold Čerenkov counters and by direct measurement of the time of flight (this latter method had an accuracy of the order of ten nanoseconds).

The simultaneous application of these methods provided reliable means of recording any nuclei of anti-helium which might be formed. During the experiment, more than 200 thousand million particles passed through the apparatus—of these, five were identified as nuclei of anti-helium.

This discovery of the nucleus of an "anti-element" is, in the opinion of A. Loginov, director of the Institute of High Energy Physics, of great significance as a confirmation of the theoretical concept of anti-matter, and hence to the whole understanding of the nature of the space–time interaction of particles. It is understood from his report that further experiments in this and related fields will be carried out using the Serpukhov accelerator.

ROCKET

Fourth Member of the Space Club

THE announcement on February 11 that Japan had succeeded in launching a small satellite by means of a Japanese rocket at the fifth attempt, and so become the fourth member of the "space club", prompts consideration of the space programmes and ambitions of a country whose situation in many respects is so comparable with Britain's. The Lambda 4S solid fuel rocket launcher is claimed to have cost only the equivalent of £138,000—a record in cheap space launchers.

Shortly before the successful satellite launching, the national Space Development Committee announced a programme for eight satellites to be nationally launched in the next six years. Six of these are for scientific purposes; one is described as ionospheric and there will be one communications satellite (largely for proving systems and feasibility, presumably). Further satellites for meteorological and navigational purposes are under consideration but have not yet been definitely adopted. There has been a 17 months delay in developing the Japanese satellite programme because of the shortage of American expertise as well as opposition from fishermen living near Japan's Pacific-facing rocket range who feared that the disturbance would spoil their livelihood.

This year for the first time the Japanese Antarctic expedition will launch rockets from their mainland