vertebrate loci have been reported to be polymorphic. Sometimes the polymorphism is such that individuals carrying different alleles differ with respect to the degree of activity of a particular protein (often an enzyme) or in other cases they may either possess or lack the protein concerned.

In his review of the extent of biochemical variation in mammalian populations, Dr Lush remarked that about 30 per cent of enzyme structural loci can probably be shown to be polymorphic in man, and other mammals may contain as much variation of this sort. He suggested that some of the variants are subject to natural selection, while others are not. The maintenance of many polymorphisms in a species by natural selection is clearly compatible with survival.

The advantage of such variations to animals in the wild was illustrated by Dr R. J. Berry (Royal Free Hospital). As well as skeletal dimensions and oxygen consumption he has looked at protein polymorphisms in the British house mouse (*Mus musculus*) on the Pembrokeshire island of Skokholm. It seems that different genotypes have different survival value at different times of the year, which means that the population can maintain greater numbers throughout the year than would be possible if it were genetically uniform. Thus the variation is a stabilizing influence in the varying environment.

Professor R. K. Selander (University of Texas) has been using biochemical techniques to show differences between populations of mice. On a large scale he quoted the transferrins, of which there are variants in the British house mouse, but not in the North American members of the species. On a much smaller scale he has found differences in the frequency of, for example, haemoglobin variants between the mouse inhabitants of different barns within a farm, and even between those occupying small areas on the floor of one barn. He thinks that the clustering of genotypes that has been revealed represents tribes and families of mice.

Making a more ecological contribution, Professor D. I. Rasmussen (Arizona State University) explained that biochemical variations within species of the deer mouse (*Peromyscus*) provide the opportunity to assess ideas about the spatial organization and genetic structure between and within local populations. The patterns of polymorphisms he found in Arizona indicate that within a species there are small units, or demes, of the order of a hundred or so mice that do not mix with other demes. Professor Rasmussen's data will be good news to those who uphold the idea that certain mammalian species, particularly rodents, have a genetic structure composed of small demes which together form patterns of macrogeographical variation.

GEOPHYSICS

Russian Translations

from our Geomagnetism Correspondent

ARE cover to cover translations of Russian geophysical journals necessary, or even useful? The question needs to be asked because the American Geophysical Union (AGU) has announced that its translation programme is likely to be in financial difficulty in the near future. The union now publishes translations of eight Russian journals of which the three most important are the two parts of *Izvestiya, USSR Academy of Sciences* (*Physics of the Solid Earth* and *Atmospheric and Oceanic Physics*) and *Geomagnetism and Aeronomy*. The whole programme is run on a no profit basis; but journal sales still fail to cover costs, and the programme is heavily subsidized by the National Science Foundation (NSF).

A crisis is now imminent because the NSF has reminded the AGU that its subsidy has always been regarded as a temporary measure and is to be removed in less than three years. Needless to say, the union wishes to continue its full translation programme, but admits that it will not be able to do so without the NSF subsidy unless there is further financial support in the form of increased sales. Meanwhile, the president of the AGU, Dr Helmut Landsberg, has accused the NSF of wishing to return to the "ignorance of the pre-Sputnik days"—an incidental reminder that the translation programme was a direct outcome of the panic that followed the launching of the first Russian satellite.

The first thing that needs to be said is that geophysicists do not seem to find many of the translated papers relevant to their own work. For example, a quick check of two issues of the *Journal of Geophysical Research* published (by the AGU) in October shows that of about seven hundred cited references only eleven are to Russian works, and only five of the papers cited appeared in journals translated by the AGU. Possibly these figures merely reflect ignorance of the availability of translations. But whether they arise from ignorance or a considered decision on relevance, or even from other causes, they suggest that cover to cover translation is not the most economical way of bringing Russian work to the attention of western scientists.

One solution might be to try out a suggestion which has been made to overcome the whole problem of the proliferation of journals. Numerous groups throughout the world are considering the future of scientific journals; and several have suggested that in many cases it would be sufficient to publish only abstracts, and just issue complete papers to those who demand them. If such a scheme were to be tried with translations it would cut the cost of the programme by making the full translation of unwanted papers unnecessary and at the same time give valuable clues to the feasibility and desirability of extending the scheme to papers originally published in English.

MARS

Mariner Pictures Discussed

from our Astronomy Correspondent

Two questions crystallized at the November 14 meeting of the Royal Astronomical Society devoted to Mars. One was why the oblateness of Mars—the extent to which it is flattened at the poles—seems to depend on the method of measurement, and the other was the explanation of the dark markings on the surface of the planet.

Dr G. A. Wilkins (Royal Greenwich Observatory, Herstmonceux) described the background of the oblateness measurements. Mars has two natural satellites, Phobos and Deimos, which orbit close to the planet and are too faint to have been yet observed at Herstmonceux. Phobos is at 2·7 Mars radii and Deimos at