GEOPHYSICS

European Colloquium

from a Correspondent

ONE of the aims of the First European Earth and Planetary Physics Colloquium held at the University of Reading from March 29 to April 2 was to attract research students and others who find it difficult to obtain funds for long distance travel to attend scientific meetings. As it turned out, more than a third of the four hundred or so participants at Reading were younger scientists. The meeting was also successful in attracting Earth scientists from all over Europe; all Western European countries except Finland and Luxembourg were represented, and large groups attended from West Germany (46), France (31), Italy (27) and Holland (16).

The scientific programme was divided into six interdisciplinary symposia with invited speakers and three "open" sessions for submitted contributions. The importance of an interdisciplinary approach to many of the major problems of geophysics was clearly demonstrated. It was shown, for example, how studies of the dynamics of rotating fluids are applied to motions both of the Earth's liquid core and of planetary atmospheres; how physical chemistry and chemical petrology can contribute fundamental data on the composition of planetary atmospheres; and how petrological and geophysical approaches play complementary parts in the study of the physical properties of the Earth's mantle. Participants migrated freely among parallel sessions. Three successful "frontier" lectures were given in the evenings outside the normal programme, on topics in which major advances are being made.

Future policy was discussed at two open business meetings. Some senior scientists expressed reservations about the desirability of establishing a distinct European organization for geophysics, but most of the participants clearly felt this to be the simplest way in which regular European meetings, accessible to younger scientists, could be assured. Accordingly, it was formally resolved to establish an Association of European Geophysicists the primary purpose of which would be the organization, annually if possible, of the European Earth and Planetary Physics Colloquia. The programme of future meetings would broadly follow the pattern established at Reading, except that the "open" scientific sessions would be subdivided more along the lines found successful by the American Geophysical Union and the International Union of Geodesy and Geophysics, in order to ensure full participation by geochemists and others whose interests overlap conventional geophysics; it was felt that the

rather idealistic subdivision of these sessions at the Reading meeting into planetary interiors, planetary atmospheres and interplanetary processes may have deterred many geologists and geochemists.

A broadly based steering committee was set up with the task of finding national representatives to facilitate communications, and to ensure that other organizations, including the European Association of Exploration Geophysicists, were kept fully informed of the plans of the new association. Representatives of the American Geophysical Union and the Royal Astronomical Society undertook to distribute information through the newsletters of their organizations.

As a regional geophysical meeting the Reading colloquium was an undoubted success. The proposals for future meetings of its kind deserved support of everybody with an interest in the dissemination of ideas among geophysicists and a concern for the training of European Earth scientists.

BRAIN FUNCTION

Chemistry of Learning

from a Correspondent

TEN years ago, any meeting with behaviour in its title would have been unlikely to have a biochemist among its participants. But at a recent symposium on macromolecules and behaviour at the University of Birmingham on March 18 and 19, at least 50 per cent of the contributors were biochemists—a real indication that the biochemist is becoming more involved in the psychologist's problems, especially in the field of learning and memory.

The first session was concerned with neurochemical correlates of behaviour with particular reference to learning. Opening the session, Professor H. Hydén (University of Gothenburg) described some sophisticated techniques for measuring the uptake of labelled amino-acids into individual neurones and glia from discrete parts of brain. Rats were taught to use their unpreferred paw, during which training

Hamster Sarcoma Virus Identified

IN next Wednesday's *Nature New Biology*, Nowinski, Old, O'Donnell and Kingsley Sanders provide evidence that hamsters have their own antigenically distinct group of sarcoma and leukaemia viruses: chickens, mice, cats and some other species are already known to have their own private RNA tumour viruses (oncornaviruses). The hamster virus (HaSV) studied by Nowinski *et al.* is released into the medium by a tissue cultured line of hamster sarcoma cells established by Bassin *et al.* (*Intern. J. Cancer*, 3, 265; 1968). The sarcoma from which the cells were derived appeared in a newborn hamster following the injection of mouse cells infected with a murine sarcoma virus. The hamster sarcoma virus, however, does not infect mouse cells but, as has been shown by Zavada and Macpherson (*Nature* 225, 24; 1970), is very efficient in transforming the BHK21 hamster cell line, *in vitro*. The origin of the HaSV is therefore not clear; it may be a modification of the murine sarcoma virus or it may be a hamster virus stimulated by the inoculation of the infected mouse cells.

Nowinski *et al.* prepared rat antiserum against one of the major internal structural proteins (the group specific or gs antigen) of HaSV and showed that it reacted in immunodiffusion tests with hamster oncornavirus gs antigens, but not with comparable antigens derived from murine, feline, and avian oncornaviruses. These gs antigens are of general biological interest because they are present in the tissues of some apparently normal inbred chicken and

mouse embryos. Moreover, Payne and Chubb (*J. Gen. Virol.*, 3, 379; 1968) have shown that the expression of the antigen in chicken embryos is regulated by a dominant gene. Huebner *et al.* (*Proc. US Nat. Acad. Sci.*, 67, 366; 1970) have shown that an analogous situation occurs in mouse embryos. Normal adult tissues do not contain detectable amounts of the gs antigen found in their indigenous oncornaviruses and immunologically mature animals are incapable of producing antibodies against this antigen—a fact that suggests these animals have had previous experience of the antigen in embryonic life and may continue to receive antigenic stimuli during adult life.

It is difficult to reconcile all these facts and decide whether the gs antigen is coded by cell or viral genes or both. Are the antigens normal cell components that have a role in certain stages of embryogenesis and which in oncornavirus infections are produced and incorporated into the virus particle? Or are, as has been suggested by Huebner, the cell genes the DNA proviruses of that particular species' oncornaviruses? It seems very likely that the virus particles carry the genetic information for their own gs antigens, because some chicken sarcoma viruses transform rodent cells and, although these cells may not produce infectious virus, they usually contain chicken gs antigen. An alternative but less likely explanation of this result is that particular strains of oncornaviruses always elicit the same antigen even in the cells of different species.