

Geological Sciences and the National Institute of Oceanography. Pisces performed excellently, reaching a depth of 1,250 feet, which is deeper than anywhere on our continental shelf. A makeshift drill was used to take core samples and external cameras shot some excellent film and videotape. There is no doubt that Pisces will become increasingly useful as more sophisticated tools are developed, of the type already in use on American submersibles. Its use by institutions in Britain is expected to become a regular occurrence.

APPLIED PSYCHOLOGY

Watching Men at Work

WHAT colours are best for postage stamps? How many television screens can be monitored at once? How much noise can be tolerated on a telephone line? These are some of the questions which are being answered at the Medical Research Council Applied Psychology Research Unit in Cambridge, which put some of its work on show last week. The staff of the unit tackle problems set by clients who can be food manufacturers or the army and navy, and they pride themselves for having saved money and effort on many occasions. At the same time the information that their labours accumulate is contributing knowledge about how the human brain works.

The problems facing somebody who has to scrutinize several television screens simultaneously are being investigated on behalf of the Home Office. Television is used for surveillance in several British prisons, and if the full potential of the system is to be exploited certain questions must be answered. For example, what is the largest number of screens that can be watched; what size should they be and for how long can they be watched before the viewer becomes bored or inefficient. To answer these and other questions, Mr A. H. Tickner has made sixteen one-hour films inside and outside prisons. Subjects watch them all simultaneously on small screens arranged like a block of television sets, and are asked to pick out certain incidents which were specially staged to look suspicious in a prison context. So far only thirty-six subjects have been tested, and Mr Tickner cannot say whether any trends are emerging, but it seems possible that the efficiency with which the suspicious incidents are recorded could vary with sex and age of the observer.

A task recently completed by Dr I. D. Brown and Mrs A. J. Hull has been to advise the Post Office on the best colours to use for fourteen low value decimal stamps. Discrimination tests revealed that sorters identified stamps most easily if seven colours were used each at two distinct levels of saturation, for example, dark blue and light blue, dark green and light green. If colours are used purely to produce stamps which are aesthetically pleasing there may well be difficulties in distinguishing one value from another at a quick glance.

The Post Office has another problem with noisy telephone lines; when pulse code modulation comes into regular use it will be very expensive to remove all background noise, and so the engineers would like to know how much subscribers ought to be able to tolerate. Dr C. M. Holloway's experiments have shown that if a line is so noisy that numbers can only just be identified they are hard to remember.

MEDICINE

Hope for Flu Victims

As winter approaches, it is comforting to know that there is promise of a new drug, called amantidine, which may be able to prevent and even to cure influenza. Meanwhile the search for an effective vaccine progresses, and the Department of Medical Microbiology at the University of Liverpool has just received a grant of £6,348 from the Medical Research Council to continue research, directed by Dr D. Dobson, into methods of immunization.

Amantidine has been on trial for nearly ten years but only recently has there been any reliable indication of its ability to protect against the influenza virus, particularly the A2 virus which is active at present. In *The Practitioner* this month there is a report of a small but significant trial conducted during the epidemic of Hong Kong influenza last year in a town in Surrey when nearly a quarter of the population of 5,500 was affected by influenza. Of twenty-two influenza patients treated with amantidine, all responded with a diminution of malaise and headache and twelve returned to a normal temperature the day after the treatment was begun. The results were better than any that could have been expected with other available treatments. Ten contacts were also given the drug as a prophylactic, and none developed influenza. Another trial in Rumania, reported in the *Bulletin of the World Health Organization*, showed the preventive possibilities of the drug. During an epidemic also caused by the A2/Hong Kong influenza virus, 112 people were treated with amantidine daily for twenty days and 103 were given inert tablets. Of those given amantidine, only two developed influenza, compared with twenty in the control group.

The way in which amantidine works is not clear. It does not kill the virus, but it may prevent it from entering the cell. Whatever the mechanism, if future studies confirm the therapeutic value of amantidine, it could become a considerably more flexible control of influenza than any vaccine. Whether or not it can cope with the new strains of virus as they appear, however, remains to be seen.

There are additional problems to be overcome before an effective vaccine can be developed. Of all the antibodies produced in response to influenza infection, it is not known which is essential for protection; the role of the serum antibody in protecting the body against influenza has not been completely defined. The other problem is that the immune response by the host to the virus is relatively poor. This is because the virus enters the respiratory passages directly and the infection remains localized there, separate from the antibodies circulating in the bloodstream. It is now believed, however, that a different type of antibody (of the immunoglobulin A variety) is made in the respiratory epithelium itself and is responsible for a more direct combat with the infection. This antibody is of great interest to the team at the University of Liverpool. They are concerned with finding out which of the several different kinds of antibody is the most effective in giving protection and with determining which is the best form of purified vaccine to produce the right amount of the right kind of antibody in the right part of the body before the epidemic season begins.