crack the United States market where housewives are apparently against pre-soaking—once through the washing machine must suffice. The enzyme content of these products is less than 1 per cent by weight, and the enzyme material itself is merely a partially purified culture filtrate so that the traditional cost of enzyme separation barely makes itself felt. Not content even with the performance of the new alkali-resistant proteinase, however, several manufacturers are now looking for an enzyme which would have a shelf life of months when mixed with liquid detergent—all the products so far have been solid.

PATENT LAW

Protection for Programmers

ARE computer programmes industrial processes, works of art or abstractions of the mind? If the first, they can be patented; if the second, they can be copyrighted; but if the third, law offers them no protection. To the chagrin of software companies—programme bureaux, computer consultants and the like—opinion on both sides of the Atlantic seems to be drifting to the conclusion that programmes are in this third category. Last week, Edward J. Brenner, the US Patent Commissioner, announced the decision of his legal staff that programmes are not patentable. Copyright protection is available, but apparently it is of little use. It protects only the mode of presentation of a programme and it is a trivial matter to change the presentation while leaving the logic intact.

Early this year, the US Patent Office unwittingly granted a patent for a "sorting system" defined in terms of specific equipment. Afterwards, the deviser of the system announced that his invention was a computer programme and no more. The patent will stand unless challenged in the courts. This episode emphasizes the legal and logical confusion that surrounds the situation. A programme may start off as a sequence of intellectual ideas, become a stack of punched cards and end up as a hard-wired piece of electronic circuitry integral to some manufacturing process. Somewhere along the line, the programme becomes patentable, but nobody—neither lawyer nor programmer—is prepared to say just where.

The British Patent Office has not so far followed its US counterpart in issuing a hard line on the subject. A spokesman for the office said this week that any patent application for a computer programme would be treated strictly on its merits, the criterion being whether the programme amounted—in a phrase dating from 1624—to a "manner of new manufacture". So far, no patents have been issued, but a couple are pending. British Petroleum, Ltd, filed an application for a linear programme method in 1962, and the application was published in 1966. IBM promptly lodged an objection and the Patent Office hearing of this objection is yet to be completed.

Computer manufacturers such as IBM are opposed to the patenting of programmes on obvious commercial grounds, while programme consultants defend the idea for reasons just as obvious. CEIR Ltd, a London firm of programme consultants, takes a philosophic view, however. It feels that the difficulties of proving someone has infringed a programme patent would be so enormous as to make the securing of patents valueless from the start. CEIR may invest £200,000 in the development of a particular programme, so that some form of commercial defence is necessary, but the firm chooses to rely on contract law for its dealings with employees and clients. It is, however, debatable whether contract law is adequate in an industry so inured to a rapid turnover of personnel.

SOCIAL MEDICINE

Doubts about Screening

THE future of medical screening as a means of diagnosing disease in the presymptomatic stage remains very much in the balance. Out of ten screening procedures that are already in use, only four—tuberculosis, rhesus disease of the newborn, phenylketonuria and deafness in childhood—can really be justified on both biological and economic grounds. This much is made clear in a recent report, *Screening in Medical Care: Reviewing the Evidence*, published by Oxford University Press for the Nuffield Provincial Hospitals Trust (35*s*).

Screening for cervical cancer comes under particularly heavy fire from E. G. Knox, professor of social medicine at Birmingham University. One of the chief difficulties here, he says, is that little is known about the natural history of the disease; for example, the frequency with which non-invasive lesions become invasive, the interval after which this is likely to happen, and the frequency with which non-invasive lesions regress. In addition, the optimum time interval at which examinations should be carried out has not yet been fully established. Also, although some workers recommend that all women older than 20 should be screened, the Ministry of Health scheme (now the Department of Health and Social Security) virtually limits screening to women over 35; that is, those women believed to be at highest risk. Yet another problem that has to be taken into consideration is that treatment, especially of clinical cancer, is far from satisfactory, and loss of fertility after conization of the cervix and hysterectomy is not unknown.

If 50 per cent of women over 21 accepted the offer of a four-yearly screening programme, the report says that the total annual cost would lie somewhere between one and four million pounds. Professor Knox adds that there would probably be little saving in terms of clinical disease for the first ten to fifteen years so that, at the highest estimate, a total expenditure of about £40 million would be involved before substantial returns could be expected. Taking the most optimistic view, screening would prevent about 1,400 invasive cancers a year in the long run.

Undaunted by these claims, Lady Donaldson, chairman of the Women's National Cancer Control Campaign, is actively promoting a project launched last week by Sir John Peel. The intention is to send out mobile clinics to test women for breast and cervical cancer. Lady Donaldson has recently complained that a number of clinics providing screening facilities for the detection of cervical cancer are closing down, chiefly because of inadequate publicity. Although there are no available figures on these closures, publicity—which is the responsibility of local authorities—seems to be very hit and miss, and there is clearly a need for women (particularly those who do not read middle-class newspapers) to be made aware of the