journals. Such men will reject any scheme which suggests that they are second-rate doctors.

The working party has devised an ingenious answer to this problem. It starts with the premise that the awards are not merit awards at all, but are awards for service to general practice. The quality of care given to patients will not be a criterion. The report states that " advancement allowances would not be intended to convey and must not be interpreted as conveying or even implying any judgement as to the professional merit or distinction of recipients in relation to the actual quality of the care which they may give to the patients." The report puts forward nine criteria which should be used in the selection of doctors for awards—preparation for practice, postgraduate study, practice organization, teaching, research, " original ideas," administrative service, work for the community, and " other." The working party explains that it does not expect proficiency in every sphere and recognizes that in some circumstances, such as single-handed practice, special conditions may apply. Doctors must now decide if these criteria conform with their concept of the best general practitioner of the future—for if accepted this scheme will be the mould from which the new generation will be cast.

Measures Against Drug Addiction

The Government will introduce a Bill this session to give effect to the Brain Committee's recommendations. Among other things it will empower the Home Secretary to specify a new category of dangerous drugs and provide for the licensing of doctors to prescribe them to addicts. It will not affect the right of doctors to prescribe any drug for the treatment of organic disease. The Bill will also require doctors to notify cases of addiction.

These measures are being taken to meet the increasing addiction to dangerous drugs in Britain and have already been endorsed by the B.M.A. Representative Body.[1] In outlining the forthcoming Bill's provisions Miss Alice Bacon, Minister of State at the Home Office,[2] stated there were 62 known heroin addicts in 1958, 132 in 1961, 342 in 1964, and 521 in 1965. The data for 1966 were incomplete but for the first nine months amounted to 670 cases, which included 279 new cases. The pattern of heroin addiction has changed dramatically over recent years.[3-5] Cases in which the source of addiction was therapeutic outnumbered non-therapeutic addicts until 1964, and it is clear that the recent increase in prevalence is almost entirely due to addiction of non-therapeutic origin. In 1959 addicts under the age of 35 were rare, while now they account for more than half the total cases. Abuse of heroin by adolescents was virtually unknown before 1959, yet in 1965 there were over 100 known addicts aged under 20. I. Pierce James[6] has shown that the mortality among heroin addicts in the United Kingdom addicted from illicit sources is 22 times the expected rate in an equivalent normal population. Seldom can a memorandum have become outdated faster than the first Brain Report.[7] The second report,[8] published in 1965, was forced to reverse most of the 1961 recommendations: events had moved on with astonishing rapidity. Now the Vera Institute of New York is quoted[9] as forecasting 11,000 heroin addicts in Great Britain in 1972.

One important decision that the Government has made is that outpatient clinics shall be set up to offer maintenance prescribing of addictive drugs by specially appointed staff. Every effort will be made to persuade the addict to proceed from maintenance to withdrawal. J. Merry[10] has recently described his experience with a clinic like those envisaged. And interesting results have recently been reported by V. P. Dole and his colleagues[11] on methadone substitution. They find that a single daily dose of this drug by mouth blocks the euphoric effects (and withdrawal symptoms) of heroin, and preliminary results on the treatment of 128 chronic heroin users are most encouraging. Several important questions remain to be answered. Who is to staff the clinics ? Is money to be forthcoming for the large-scale testing of blood and urine which may be needed if dosage is to be properly adjusted ? Are addicts of eccentric appearance easily accepted in the registries or waiting-rooms of outpatient departments, or will new building be necessary ? If these clinics are to offer energetic therapy rather than act merely as centres for handing out drugs they will be expensive to run, yet one of the reasons why the American Narcotic Clinics of the 1920s fell into disrepute seems to have been that they largely abdicated any true therapeutic role.[12] If the clinics are to keep the black market out of business the staff will have to cultivate much skill in gaining and holding the confidence of their patients: M. E. Chaftez[13] has shown that with alcoholic outpatients a clinic properly designed to meet their immediate needs greatly improved the reattendance rates. Essential to the working of these clinics will be the proposed notification of addicts. The details of the scheme have yet to be worked out, but the arguments for an effective system are now overwhelming.

The Minister of Health favours small specialized inpatient units which would take not more than 12 heroin addicts at one time,[14] and A. Kaldegg[15] has described a unit of this type which is being run at Cane Hill Hospital. M. M. Glatt[16] believes, on the basis of considerable experience, that addicts and alcoholics can be treated in the same wards, while other authorities would fear that heroin may spread by " infection." The question of compulsory detention for treatment has also been debated,[17] but the Government is not at present accepting this particular recommendation of the Brain Committee.

The importance of rehabilitation is stressed in the Government's current proposals. There is talk of hostels, with a glance across the Atlantic,[18] but though there have now been some years of experience in Britain with hostels for the rehabilitation of alcoholics[19] no one is yet sure whether putting

[1] *Brit. med. J. Suppl.*, 1966, **2**, 48.
[2] *Hansard*, 30 January 1967, col. 167 ; see *Brit. med. J.*, 1967, **1**, 311.
[3] Bewley, T., *Lancet*, 1965, **1**, 808.
[4] —— *Brit. med. J.*, 1965, **2**, 1284.
[5] —— *Bulletin on Narcotics*, 1966, **18**, 1.
[6] James, I. P., quoted by Bewley, T., *Bulletin on Narcotics*, 1966.
[7] *Drug Addiction : Report of the Interdepartmental Committee*, 1961. H.M.S.O.
[8] *Drug Addiction : Second Report of the Interdepartmental Committee*, 1965. H.M.S.O.
[9] *The Times*, 22 January 1967.
[10] Merry, J., *Lancet*, 1967, **1**, 205.
[11] Dole, V. P., Nyswander, M. E., and Kreek, M. J., *Arch. intern. Med.*, 1966, **118**, 304.
[12] Narcotics Addictions: Official Actions of the American Medical Association. A.M.A. 1963.
[13] Chafetz, M. E., *Quart. J. Stud. Alcohol*, 1961, **22**, 325.
[14] *Hansard*, 30 January 1967, col. 138.
[15] Kaldegg, A., *New Society*, 2 February 1967, p. 154.
[16] Glatt, M. M., *Lancet*, 1965, **2**, 171.
[17] —— *Bulletin on Narcotics*, 1966, **18**, 29.
[18] Volkman, R., and Cressey, D. R., *Amer. J. Sociol.*, 1963, **69**, 129.
[19] *The First Five Years*. West London Mission Alcoholic Rehabilitation Centre. 1965. London.
[20] *The Times*, 23 January 1967.
[21] Ministry of Health Hospital Memorandum, No. 43. 1962.
[22] *Brit. med. J.*, 1966, **1**, 1493.
[23] Chein, I., Gerard, D. L., Lee, R. S., and Rosenfeld, E. *Narcotics, Delinquency and Social Policy : the Road to H.* 1964. London.

a group of young heroin addicts together is likely to produce anything but chaos. Some experts[20] would favour using extended hospital stay as a sort of hostel care, with eventual placement in a family. Getting the addict back into work and a settled way of life is an immensely more difficult problem than drug withdrawal.

There is again a lesson to be learnt from the treatment of alcoholism. The Ministry of Health's 1962 memorandum[21] emphasized specialist inpatient psychotherapy, with relative neglect of outpatient services and of rehabilitation. Clearly what is needed for alcoholism—and every other variety of drug dependence—is an integrated treatment service. This implies continuity of care and continuity of relationship, seeing the patient through from first contact to final rehabilitation. Should not the Government plan for at least one such experimental "model service"—a model no doubt as much for the problems it would throw up as the problems it would solve?

Many aspects of the growing addiction to heroin need urgent examination. What, for instance, is the relationship between experimenting with "soft" drugs and addiction to heroin and cocaine? Will morphine take the place of heroin as control of heroin becomes more stringent? That dependence on amphetamines and barbiturates is also a growing problem must not be forgotten, and the L.S.D. cult casts its shadow.[22] What are realistic aims of treatment—cure or containment? Is the "stabilized" addict a myth except for the rare middle-aged addict of therapeutic origin, or can the young addict function socially on a carefully maintained dose? The social and psychological roots of addiction may to some extent be illuminated by American research,[23] but generalization from conditions in New York, with its Puerto Rican and Negro slums, to London with its subculture of psychologically disturbed adolescents would be misleading. These are perhaps the type of questions to be tackled by the Addiction Research Unit which the Minister proposes to establish at the Institute of Psychiatry. The impact of legislative policy will be continuously under review by the Standing Advisory Committee already in operation.

The next few years present a great challenge. The outbreak of drug addiction on this scale in Britain is a grave symptom of social disorder, and the ability to deal with the emergency demands alike intelligent central organization and the skills and energies of individual doctors and nurses. But it must never be forgotten that, while addiction has many of the features of a contagious disease necessitating determined control, every addict is a sick person deserving compassion and skilled medical care.

Mercurialism Extraordinary

Mercury in pure metallic form is reckoned to be non-poisonous. But it can maintain this happy state only if it is in a vacuum or in contact with ion-free water. When it is in contact with body fluids, either in tissues or in the alimentary or respiratory tracts, it slowly releases mercury ions, which block the sulphydryl radicle in many enzyme systems.

Elsewhere in the *B.M.J.* this week are reports of two remarkable cases in which metallic mercury was self-injected (pp. 340 and 342) and a report of a third case (p. 347) in which mercury gained entrance to an artery during the collection of blood. After a few days local inflammation and necrosis developed, with later evidence of more widespread damage, particularly to the kidneys. In one case this was fatal. An interesting observation was the widespread dissemination of the mercury, illustrating aptly a quality which earned for the metal its name "quicksilver."

During recent years there have been several instances of parenteral poisoning with metallic mercury which has gained entrance from its use to secure a gas seal in syringes employed to withdraw blood from cardiac catheters and intravascular needles. J. T. Buxton and colleagues[1] have described a technique whereby the risk can be avoided. It would be even better not to use mercury for this purpose. Well-fitting syringes, promptly capped after detachment, are entirely suitable. Even if a small bubble of air gains entrance to the blood, the effect it will have on the gas content of the sample is less than the technical errors of the analytical methods and, in the physiological sense, is negligible. To use mercury is to strain for a degree of precision on one point out of proportion to the theory and practice of the whole technique.

[1] Buxton, J. T., jun., Hewitt, J. C., Gadsden, R. H., and Bradham, G. B., *J. Amer. med. Ass.*, 1965, **193**, 573.

Immunological Development and Antibody Deficiency Diseases

At birth the human baby is called upon to adapt himself rapidly from the highly protected intrauterine environment to an outer world swarming with pathogenic micro-organisms. In his Leonard Parsons lectures C. A. Janeway[1] discusses the complex means by which this is achieved and the clinical manifestations that result from maldevelopment of the immune mechanisms.[2]

The immune response consists of a cell-mediated component expressed as delayed-type hypersensitivity, and of antibody production. These two aspects are controlled by separate central lymphoid systems,[3] both derived from primitive mesenchyme but subject to their own developmental defects. In the chicken the thymus controls the small lymphocytes which mediate delayed-type hypersensitivity and homograft rejection, and the bursa of Fabricius in the hind-gut gives rise to lymphoid cells, which are the precursors of antibody-making cells.[4] In man this separation is much less clear-cut. The studies of R. A. Good and his school provide some evidence that adenoids, tonsils, and the lymphoid tissues lining the intestinal wall may be "bursa-equivalents,"[5] but it seems that in higher animals the thymus controls some aspects of antibody production as well as the ability to reject grafts.[6]

In the normal baby the thymus is fully developed at birth and the lymph nodes are well populated by thymus-primed small lymphocytes, though delayed hypersensitivity and skin reactivity reach maturity at 4–5 months of age. The spleen and gut lymphocytes are also well developed, but lymph follicles and plasma cells appear only after the baby is antigenically "challenged"—for example, by an infection—and antibody production is not fully effective until about 7–9 months of age. To overcome this the human baby receives immunoglobulins (IgG) containing many specific antibodies via the placenta from about the 5th month of foetal life, and these maternal immunoglobulins diminish after birth. The level is down to half at 28 days, so that the gradual catabolism corresponds with the baby's increasing antibody-making capacity. This protective mechanism[7] is not without its dangers. Firstly, the maternal immunoglobulins can carry