

antigen, and the test has a high specificity. It gave 3.1% of positive results among males and 1.5% among females. Clinical evidence of syphilis was found in 1.4% of the 1529 patients. A survey of the records of necropsies on 976 patients over 60 years of age between 1958 and 1965 showed that evidence of syphilis had been found in 50. These high figures probably represent an aftermath of the disease at the time of the 1914-18 war. If the findings in Glasgow apply to the rest of the country, a sizeable pool of unsuspected and probably untreated syphilis exists among older people. Judicious treatment can do much to halt progression or ameliorate symptoms even in these longstanding cases; and further cooperative studies by geriatricians and venereologists along the lines of the Scottish survey might prove fruitful.

Annotations

PAYING FOR THE N.H.S.

IN the current discussion in these columns, correspondents have sought to support their criticism of *The Lancet's* insistence on equal benefits for all under the National Health Service, without payment by the patient, by referring to the growing movement towards disparate benefits under other social services. Thus Dr. Sim this week (p. 509) and Mr. Carter last week¹ seem to think that a speech by the Minister of Labour reinforces their argument for some sort of charge or payment through private insurance. In this speech (Aug. 19) the Minister said:

"In this period, when the priority must inevitably be adapting ourselves to the second industrial revolution, we need to look carefully and argue constructively about the social benefits we pay ourselves. There is no cold inhumanity in testing and probing the way and the manner in which vast sums are paid in such benefits. It is a proper subject for argument in the Labour movement. Should such benefits as family allowances and housing subsidies be paid to those whose financial position makes them unnecessary? Or alternatively should not the available resources be concentrated on those in the greatest need? We still have a biting problem of poverty in this country, hundreds of thousands of underprivileged children who can never have the good life or the equal opportunity. These are the priorities, and just because the hated words 'means test' always crop up in the argument is no reason why we should not argue it out in a constructive manner. The means test of the 'thirties was a vicious, evil thing in its application, but I doubt if emotional memories are really relevant to what is a different world. We are dedicated to the abolition of poverty, equality of opportunity, and the decent maintenance of our elderly. Is there not a case for concentrating what we have available on those in the greatest need?"

In this speech the Minister was expressing the case for a differential distribution of cash or subsidies to aid the poor: he did not say or imply that patients should help to pay for their treatment under the N.H.S. The distinction is important. This journal has more than once made clear that, to bring the poor up to subsistence level, it would welcome greater differentiation in cash benefits,² notably in family allowances (the two likeliest solutions being higher allowances limited to the neediest families

by a means test, or an all-round increase in allowances accompanied by a reduction in income-tax relief for children). Like the Minister, we believe that only by concentrating on the needy will their need be met. (By analogy, those needing hospital investigation or treatment should have first claim on hospital beds; and they would be largely excluded if all who fell ill were admitted). But defined need to mitigate poverty is very different from the undefined and unpredictable need for medical treatment which may befall anyone, rich or poor. Knowing that they can least afford to pay when they are unwell, and that the severity and duration of their illness may range from the trivial to the extensive, the prudent will insure themselves completely against the risk; and the N.H.S., as now constituted, does provide universal and almost complete insurance. *The Lancet*³ resists Mr. Houghton's suggestion⁴ (to which Dr. Sim refers) for imposing charges, because these would penalise patients—and penalise them unequally—and tend to prevent those who need treatment from seeking it. This is the practical objection to the proposal, reiterated by Dr. Sim, for a charge on prescribed drugs.

Dr. Sim, in common with some others, seems to believe that if, in one way or another, payment could be exacted from patients, the money that accrued would be added to the Exchequer contribution, which would be calculated as though these extra funds did not exist. This is surely unrealistic. Any Government would be less than human if it did not take account of extraneous funds; and, in doing so, it need not overtly cut back the Treasury contribution—after all, hospital costs are rising by some 10% per annum. Thus payment for the N.H.S. through general taxation would to a greater or lesser extent give way to payment by the individual patient, who, with no promise of an improved service, would contribute twice over—once according to his means, and then according to his need. The only fair way is to leave the main burden squarely where it now resides—with the taxpayer.

HALLUCINOGEN AND TERATOGEN?

MOST advocates of the use of lysergic-acid diethylamide (L.S.D.) as a "mind-expanding" agent will admit that some people who take it suffer serious psychiatric damage, even permanent psychosis; but this, so it is argued, is the inevitable price paid by the unfortunate few for the benefit of the many. Just how frequent are these casualties is uncertain, since they tend to be covered up by the hippie community, especially on the west coast of the U.S.A., where the drug is illegal. But the alarming impression is that psychiatrists seem to be seeing many cases of damage due to L.S.D., and apparently even more due to dimethyl-tryptamine (D.M.T.).

Recent work suggests even darker possibilities. Cohen et al.⁵ examined the effect of L.S.D. on cultured human leucocytes from normal individuals and found a striking increase in chromosomal abnormalities, particularly damage to chromosome no. 1. This effect seemed to be related to time and dose, since the higher the concentration and the longer the exposure, the greater the damage. They also studied the leucocytes of an apparently physically healthy man of 51 with paranoid schizo-

1. Carter, A. E. *Lancet*, Aug. 26, 1967, p. 473.

2. *Lancet*, 1966, ii, 479; *ibid.* July 15, 1967, p. 141.

3. *ibid.* July 29, 1967, p. 250.

4. Houghton, D. *Paying for the Social Services*. London, 1967.

5. Cohen, M. M., Marinello, M. J., Back, N. *Science*, N.Y. 1967, 155, 1417.

phrenia who over six years had had 15 treatments with a total of 2505 µg. of L.S.D. The leucocytes were examined eight months after the last dose of the drug. The chromosome-breakage rate in this man was considerably above the normal and one "quadriradial" formation was observed between two no. 1 chromosomes. Such changes were not observed in the chromosomes of 35 other schizophrenics screened who, apart from the L.S.D., had received a similar range of tranquillising drugs. "Quadriradials" and increased chromosome breakage are seen in two human autosomal recessive conditions (Bloom's syndrome and Fanconi's anaemia), and they are also found in tumours and in cells "malignantly transformed" by an oncogenic virus (S.V.₄₀). Since there is an apparent tendency to neoplasia in both these human diseases, Cohen et al. regard L.S.D. as yet another agent capable of producing chromosomal damage in vitro and probably in vivo—damage that is long lasting and may indicate that L.S.D. can be both neoplastic and teratogenic.

Irwin and Egozcue⁶ looked at the chromosomes in the white cells of 8 people who had had L.S.D. In 2 young men, the heaviest users of L.S.D., the Philadelphia chromosome seen in myeloid leukaemia was found; and, in the group as a whole, the chromosome-breakage rate was significantly increased. The damage was more severe in those who had taken the largest amounts of L.S.D.

A case has been mentioned⁷ of a girl who took a single dose of L.S.D. in the first month of pregnancy and later had a seriously deformed child with megacolon. Now workers in New York report⁸ abnormalities in the offspring of rats given L.S.D. by injection early in pregnancy. Of 5 rats which received a single subcutaneous injection on the fourth day of pregnancy, 1 appeared to abort early, 2 had stunted stillborn offspring at term, 1 had a litter of 7 healthy and 1 underdeveloped young, and the 5th rat had an apparently normal litter. All 5 matched controls, given saline injections, went to term and had normal healthy litters of 11–16 offspring. Experiments at Wisconsin University are said⁹ to have produced malformations and brain defects in mice born to mothers given minute doses of L.S.D.

In view of these findings, L.S.D. must now be considered as a possible cause when a deformed child is born.

TIDES AND BABIES

THE moon has been credited with many strange properties, but, as man closes in on earth's sole natural satellite, few of these notions survive. One known influence is the part played by the moon in controlling tides: Dr. Walter Menaker tentatively suggests another.⁹ The moon goes through its phases in approximately 29 days 13 hours, and completed thirty-seven of these synodic lunar cycles between Jan. 3, 1961, and the end of 1963: in this time half a million babies were born in New York City. Dr. Menaker divided the lunar month into fifteen pairs of half-cycles and compared the birth-rates in them. The most disparate of these pairs was obtained by dividing the cycle at F.Q. + 1 (the day after the moon was in its first quarter): the birth-rate was a statistically significant 1.01% higher than in the corresponding half-cycle,

L.Q. + 1. F.Q. + 1 is centred almost on full moon; L.Q. + 1 is distributed about new moon, and is almost the darkest half-cycle. This finding is not very dissimilar from an earlier result,¹⁰ and Dr. Menaker hopes to report on at least a decade. A child born under a full moon is likely to have been conceived in the same illumined circumstances since the human gestation period is exactly nine lunar months: indeed, an influence on conception seems more likely. The extra light can be ruled out as a cause: the last time New Yorkers demonstrated an unexpectedly vigorous procreative urge they were stimulated, not by the bright romance of a silvery moon, but by the stygian darkness of electric-power cuts. Human reproduction is influenced by many social factors, including holidays. Until this year three British public holidays were influenced by the moon: playing around with the traditional Whit Monday is a precedent which could have wide implications.

NEEDS OF SCIENCE

IN his presidential address to the British Association on Aug. 30, Lord Jackson of Burnley, professor of electrical engineering at Imperial College of Science and Technology, London, spoke of the discouraging prospect for manpower resources in British science and technology.

Whereas the estimated overall demand of employers by 1968 was given as 24% greater than the 1965 employment figure of about 330,000, the new supply from higher education over 1965–68 would not raise this 1965 figure by more than 14.6%. This meant that, against a requested rise of 7.4% annually, there was an assurance of growth from new supply of only 4.6%. Moreover, the recent evidence of entry to the university departments of science and technology, and of the trend away from science in the sixth forms at school, suggested that this 4.6% annual rate of growth was unlikely to be maintained beyond 1968. It was distressing for those who had striven to provide greatly improved facilities that, during the past academic year, there were 1600 vacant university places for scientists and technologists. Employers would have to learn, and quickly, to use more effectively the scientists and technologists they already had.

The plain facts were, Lord Jackson added, that courses in science and technology, or the careers open to graduates in these subjects, were failing to appeal to a majority of the sixth-form students who wanted to attend a university; that among the minority many were choosing science rather than technology; and that among the scientists most of the best academically were opting for research, preferably within a university (and many were prepared to emigrate if this wish could not be met at home to their satisfaction).

Turning to the need for a policy for basic science, Lord Jackson observed that the scientific decisions, or recommendations, which lay within the formulation of such a policy could be made only by scientists, and they were decisions which must now be made in the knowledge that the resources available could not continue to grow at the rate of recent years, expressed in terms either of money or of qualified manpower. A continuing increase in expenditure on basic scientific research would be possible only in so far as the successful exploitation of the results of research already completed made increasing resources available. Regrettable though it may be to the scientist, the fact was that the strength of our national

6. Irwin, S., Egozcue, J. *Science*, N.Y. 1967, 157, 313.

7. Davidson, B. *Saturday Evening Post*, Aug. 12, 1967.

8. Alexander, G. J., Miles, B. E., Gold, G. M., Alexander, R. B. *Science*, N.Y. 1967, 157, 459.

9. Menaker, W. *Am. J. Obstet. Gynec.* 1967, 98, 1002.

10. Menaker, W., Menaker, A. *ibid.* 1959, 77, 905.