amorous favours.[5] We can see from this that they are as advanced as we are!

When medical evidence is too contradictory or inadequate, Courts may fall back on what is called "the commonsense viewpoint of the average man". Of course, the average man is one inferior to oneself, but who somehow manages to possess the same prejudices. A Court may go further, as in Tennessee, where the Court ruled—"The Court takes judicial notice that climbing of stairs is condemned by the medical profession as among the activities most harmful and dangerous to persons afflicted with heart trouble and arteriosclerosis".[1]

While some doctors may support the Court, and deny their patients the right to ascend 30 steps at work, they do not yet deny them the right to the pursuit of Venus, which is very interesting, because the work of the heart during this chase has been measured as the equivalent of running up five to ten flights of stairs.[6] One dare not produce this information before the Workers' Compensation Board lest Counsel may seize upon it as the explanation of why so many men die in bed. So much for the doctors and Courts.

I must concede that I have referred to extreme examples of medical witnesses and Courts straining to aid the applicant worker. The Courts administer justice according to the law as they find it. In America and here there is continual pressure at a social and political level to expand the availability of Workers' Compensation Benefits. As one physician said to me after leaving Court—"Well, we all want them to win, anyway". Now, really we do, and this is for a very good reason. This country runs second to the U.S.A. for the possession of the weakest social security system of any comparable industrial society.

Table 2 sets out the levels of sickness benefits available through Compulsory National Insurance Schemes in Western Europe,[7] together with the fixed rate Sickness Benefits available in New Zealand, Britain and Australia.[8] For the European countries, Sickness Benefits are available as a percentage of wages; premiums are from the weekly wage, as a percentage, deducted at source. The scheme may be national or through nominated Insurance Agencies. We fall behind all. In Britain,

5 "National Association of Compensation Claimants." *Attorneys Law Journal.* 9, 47, May, 1952 (Supreme Court of Mississippi).

6 Dock, W. "The Relative Etiological Importance of Various Stresses in Cardiac Disorders" in *Work and the Heart* ed. Rosenbaum, F. F. and Belknap, E. L. Pub. Paul B. Hoeber, Inc., New York, 1959.

TABLE 2

Sickness Benefits (National Insurance Schemes)
(% of wages, 1961)

Sweden	70-90
Norway	70-90
West Germany	90 then 50
Netherlands	70-80
Denmark	60-80
Austria	50-75
France	50-67
Belgium	60
Italy	50
(% of minimum wage, 1963 for man and dependent wife)	
New Zealand	85
United Kingdom	68
Australia	48

the Welfare State also supplies free medical and hospital treatment during disability. However, in Australia, we have a non-insurance scheme of benefits, which may make us look at Eastern Europe and the Peoples Republic of China for comparative benefits.[7]

TABLE 3

Sickness Benefits (Social Welfare Systems)
(% of wages, 1961)

P. R. of China[1]	60-100
U.S.S.R.[2]	50-90
Czechoslovakia	60-90
Yugoslavia	50-90
Rumania	50-90
Hungary	75
Poland	70
(% of basic wage, 1963)	
Australia	48

Again, expressed as a percentage of wages, one sees that sickness benefits are higher than here. Our standard of living may be higher, but this is related to our rate of fixed expenditure and does not affect the significance of these figures. One still has to pay the rent, the hire purchase instalments and buy the food.

[7] *Social Security Programs Throughout the World, 1961.* (U.S. Department of Health, Education and Welfare, Social Security Administration Division of Program Research). Pub. U.S. Government Printing Office, Washington, D.C. 1961.

[8] Summary of Social Security Benefits in the United Kingdom, New Zealand and Australia. April, 1964. Department of Social Services, Research Section. Melbourne, 1964.

I have not included dependent children in the calculation. It costs £150 to £200 per annum to keep a child at what we regard as a normal living standard. On sickness benefits he brings in 15 shillings a week.

The (1) over the Peoples Republic of China indicates a weakness in an otherwise excellent system because there are exclusions. One of these is for persons deprived of civil rights. Thus a sizeable section of the community must work or die or both, or escape to Hong Kong. The (2) over U.S.S.R. indicates something which would gladden the hearts of some. There are reductions; 10 per cent for rural workers (a cost of living adjustment) and 50 per cent reduction for non-unionists. Of course, the benefits are administered through the unions. The Eastern European countries have a cleaner social conscience and they do not have these restrictions or exclusions.

Having looked at the basic problem, it is perhaps advisable now to look at the patients. Workers' Compensation benefits, at a higher rate than Sickness Benefits and entitling a patient to free medical and hospital treatment, are meant to assure him of a reasonable chance of weathering his illness without economic distress and anxiety. This is usually effective where there is no question of liability. However, in the cloud cuckoo land of coronary occlusion, liability is likely to be contested. It is, for this reason, through heart cases, that the extension of Workers' Compensation into the field of social security has produced a tragically farcical situation.

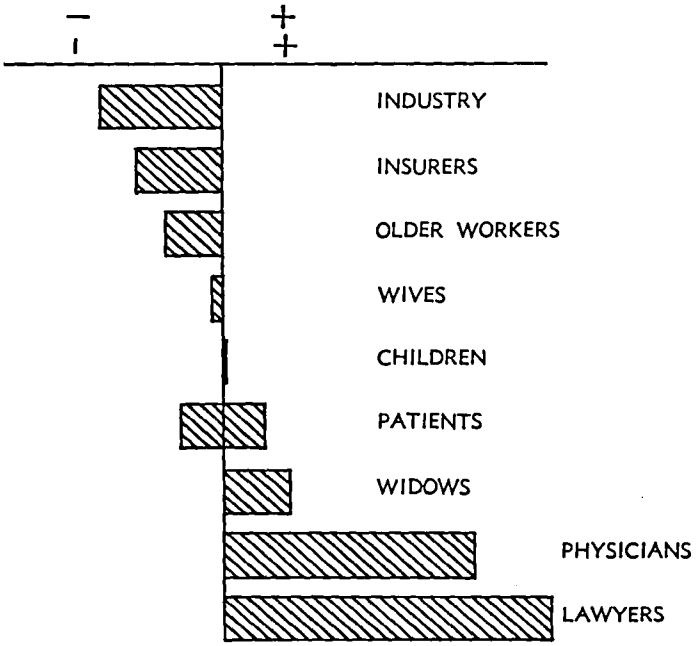
Let us view the gains and losses in this situation.

Table 4 shows a scientific way of presenting unscientific information. I ask you to look at it carefully as the implications of it pervade the remainder of this discourse. To understand it you need to know that a dependent wife brings the compensated worker twelve shillings less per week than would Sickness Benefits, dependent child a shilling more. The patient is £4/13/6 better off theoretically, but he receives his money after the time of need is past. His widow does well, in due course.

The man who suffers a coronary occlusion is likely to become anxious for several reasons; through fear of death, disability and through fear of financial insecurity. He is likely to become saddened or depressed through grief for his lost health, or his anticipated dramatic separation from his loved ones. He may become sick with worry and unfit for work. Financial insecurity may force him into pinning his hopes upon a successful Compen-

TABLE 4

Compensatibility for Cardiacs—Gains and Losses



sation claim. To Dr. Miller and to others this may be regarded as desire for gain;[9] to me, and also again to others, it represents a desire for survival.

If the patient had obtained Sickness Benefits he may have had a "bird in the hand" at least. Commonly he has not. He did not seek them. After all, he was going to receive Workers' Compensation benefits to which he was informed he was entitled. His union representative or his doctor, and others, may become angry when the money does not come, but they overlook telling him he can obtain alternative temporary benefits. Of the last ten men I have seen for Insurance Companies, who have had coronary occlusions, six had had no income from any source during the first three months, two had obtained Sickness benefits very late, and two received wages. Naturally, none was receiving Workers' Compensation.

[9] Miller, H. *Proceedings of the Medico-Legal Society of Victoria.* (this volume).

At the Work Assessment Centre of the National Heart Foundation in 1962, 45 per cent of the patients seen were unfit for work.[10] The reasons are set out in Table 5.

TABLE 5

Reasons for Unemployability of Cardiacs
(Work Assessment Centre, 1962)

Physical Handicap	76%
Psychological Handicap	69%
Age	31%
Workers' Compensation	24%
Language	10%
Poor motivation—financial	10%
Unsuitable	8%
Absconded	5%
Refused work	4%

More than one disability was present in most cases. Physical handicaps can be overcome by choosing suitable work. Age and language barriers can also be overcome if there are either special skills or little or no physical disability. The problems lower on the table cannot be overcome. Psychological handicaps could be reduced by the handling of each of the patient's problems as they were defined for him in a detailed rehabilitation programme. For these men, financial problems loomed large.

Workers' Compensation claims or actual awards were a barrier to employment for two reasons. In some of these men, fear and frustration, concerning the possible outcome of claims, outstanding for many months, produced sickness in the man which could not be overcome until the case was decided. In others, the patient who was receiving weekly payments would not attempt work because, should he do so, payments would cease, and if he were unable to continue work, he feared they may not be resumed. This is a rather important Victorian problem. A method was devised of testing whether these men would work, if their fears about risking their tenuous security could be overcome. The method was to approach the Insurer, that is the previous Insurer, with a view to guaranteeing (by gentleman's agreement) a resumption of payments should the worker be unable to continue. Should a new episode occur, this would be the responsibility of the new employer. We could tell them which it appeared to be. The undertaking was limited to three

[10] Goble, A. J., Adey, G. M. and Bullen, J. F. "Rehabilitation of the Cardiac Patient", *Med. J. Australia* 2, 975, 1963.

months. This may seem a dangerous and meddlesome little experiment.

TABLE 6

(Work Assessment Centre—from March, 1962)

Average time off work	13 months
Maximum Time off work	3 years
Assurances obtained	21
Resumed work	18
Broke down temporarily	3
Working now	17
Alive now	21

There were 21 cases. All are still alive. 17 are still working. They had all been off work a long time and would not have otherwise resumed work.

This approach proved profitable to all concerned. Here is an example. A 57-year-old man, unskilled, was seen in March, 1962, having been off work for 9 months on weekly payments. After an assurance was obtained from the Insurance Company, and after considerable difficulty in view of his age and lack of skill, suitable work was found for him. This took six months' search and psychological preparation. One year later, after some confusing and conflicting medical advice, he started to worry about his heart condition once more, feeling tired and depressed. He was unable to work. Despite his having worked for one year, the Insurance Company, only committed for the first three months, resumed "ex gratia" payments to cover him while he received treatment, for a period, for depression and anxiety. He is now confidently working once more. This excursion into social welfare, which was voluntarily undertaken by a claims manager, saved this man from psychological disintegration.

Malingering with heart disease is, I think, outstandingly rare. There are external precipitating factors of neurotic, hysterical or depressive behaviour in practically all cases. Workers' Compensation practices have been amongst the most important. These include things probably recognized by us all: delays, repeated demands for certificates, taciturn medical examinations, conflicting medical advice, failures to respect human dignity at some quite surprising levels, unreasonable termination certificates, and hearing one's case in Court, including statements about prognosis. It is as well that most people are resilient and fairly tough.

In an attempt to overcome these problems, the Queensland Government set up a Cardiac Board in 1960.[11] This was composed of three cardiologists. A similar practice had been established in Utah ten years before. The State Government Insurance Office, the sole Workers' Compensation Insurer in the State, has the responsibility for collecting the medical records. The Board sits twice weekly and handles four cases at each half day sitting, having done some homework the night before.

In Queensland, it is necessary to connect work with the cardiac condition, through causation, acceleration or aggravation.[12] The Board found favourably for 42 per cent of 542 applicants during its first two years. This was apparently liberal, being a higher percentage than was the case before the Courts. The hearing is usually three to four months after a coronary occlusion rather than nearer the two years of before. The hearing is informal. The applicant may be represented, but no other persons may; he rarely is represented. Medical examination and electrocardiagram are included. There are no privileged medical records; all are available to the Board. There are no settlements. There is no appeal. There is little place for counsel. There are now no complaints: it works.

However, there are some weaknesses. Again the money comes after the illness is past. Some people believe that every man is entitled to his day in Court, no matter how it may affect him. The decision of the Board is absolute. Brisbane Sunday "Truth" attacked the Board in 1962, as an instrument of the State Government Insurance Office and for "Star Chamber" tactics, supported by human interest stories[13]. It is now accepted and has not been attacked during the past year.

In all States, many claims are survivor's or widow's claims. The delay involved in a death case may be up to two years. The successful applicant widow has her fixed award of, say, £2,240 handled by the Workers' Compensation Board. This is usually disbursed in weekly instalments to supplement her widow's pension, at a rate of, say, £3/10/- per week. This is necessary for reasons I shall not discuss. However, this process endorses the fact that widows' pensions in Australia are as inadequate, propor-

11 The *Workers' Compensation Acts* 1916 to 1960. See 14C (i) Queensland. Government Printer, Brisbane, 1961.

12 *Ibid.* Sec. 14C (ii).

13 *Brisbane Sunday Truth,* 21 October, 1962 and 2 December, 1962.

tionally, as sickness benefits. The same applies to invalid pensions and unemployment benefits. This inadequacy is recognised by some—one teaches medical students that, here, the adults with vitamin deficiencies are the pensioners and the chronic alcoholics.

Now, I think, one should look at the effect of all this on employment, industry and insurance. Employers are loth to engage men with heart disease irrespective of their apparent physical fitness. The results of surveys conducted in Melbourne and America are shown in Table 7.

TABLE 7

Reasons for Rejection of Cardiacs as Employees

Melbourne { 120 firms, 50% rejection	Minnesota { 450 firms, Illinois { 38% rejection
1. Physically limited	1. Workers' Compensation Liability
2. Safety risk	2. Other Insurance risks
3. Workers' Compensation Liability	3. Physically limited
4. Absenteeism	4. Absenteeism
	5. Safety risk

It is notable that, in America, the chief reason for rejection is financial.[14] In Melbourne, financial considerations were third. There are good reasons for this. The American Heart Association and other bodies for years have been campaigning and demonstrating that men with heart disease make good employees; that disability is often imagined by the employer, not real; that absenteeism is, in fact, less with cardiacs; that, possibly because they

TABLE 8

Changes in the Proportions of Compensation Cases and Awards for Heart Disease in New York State

	1947		1956	
	Heart Cases	% of all Cases	Heart Cases	% of all Cases
Total number of cases	167	0·14	619	0·71
Fatal cases	65	—	224	27·4
Permanent Total disability cases	10	—	16	7·3
Total compensation awarded	1·02 million dollars	1·8	5·92 million dollars	17·6
Average cost per case	6,100 dollars	—	9,632 dollars	—

[14] Warshaw, L. J. Cardiovascular Disease in Industry in *The Heart in industry*. ed. Warshaw, L. J. Pub. Paul B. Hoeber. Inc., New York, 1960.

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are more careful, industrial accidents are less common for them. In Australia, this has only just begun. Also, in America, there is increasing awareness of Workers' Compensation claims experience from heart disease.

In table 8 you will note that in New York the overall cost of heart cases rose from 1·8 per cent of the successful claims in 1947, to 17·6 per cent in 1956.[14] The same pattern is apparently occurring here, but the figures are not known.

Although one may believe that the cost of the claim is borne by the Insurance Company this, in fact, is not so, certainly not entirely so, nor is the cost truly spread over an industry; in fact, it is largely borne by the employer. The book rate for insurance rises from a minimum of 6/6d. per £100 of wages for clerks (so much for heart disease), to £20/4/6 per £100 of wages for non-coal miners underground (which indicates that some industries could do with some investigation of their safety measures). Low claims bonuses, or Claims Experienced Discounts, were initially introduced to aid industrial safety programmes through financial incentive. The State Government, in 1951, amended the Workers' Compensation Regulations, permitting up to 25 per cent reduction of premiums, dependent upon the insured's claims experienced during the previous policy period.[15] One heart case can wreck an employer's claims experience, thereby costing him money.

In 1958, the State Government received the Report of a Board of Enquiry into the Accident Rate in Industry.[16] This Board recognized and predicted that claims experience discounts, though valuable in one respect, could militate against employment of older workers. The Board was correct.

This letter, quoted by Warshaw,[14] was addressed to an American State Court which had found for a Worker in a claim for compensation for heart disease: ". . . this particular award is no more vicious or false in its premise than . . . others. . . Mr. . . . suffered a heart attack which is not unexpected in a man of his age.

"I have made a firm and fast rule in all our operations in this State, wherein we employ better than 600 men, that under

[15] Amendment to the Workers' Compensation Regulations 1942. *Victoria Gazette* No. 1028, October 31, 1951, p. 7137.

[16] Report of the Board of Enquiry appointed to enquire into and Report upon the Most Practicable Manner and Means in or by which the State of Victoria might Assist in Reducing the Accident Rate in Industry in Victoria. Pub. Government Printer. Melbourne, 1958.

no circumstances will men past the age of 55 be hired, irrespective of their qualifications. If industry must pay a price for every sickness and ailment that occurs while an employee is working on the job, then, of course, we must limit our employment to the ages when diseases and infirmities, that come with later years, will not result in claims being granted by your department. This is a pity, for there are many people in the older age group, who can perform adequately in many of our job classifications.

"My next step will be to discharge employees in certain age classifications, because of the exposure involved by reason of your rulings. I am also recommending similar action to all employer groups to which I belong . . ."

You may think, gentlemen, that this would not happen here. It does. Some employers will not engage men over 50 or 55 years, and will admit verbally that they are influenced by the reason given in the letter. As yet, however, I know of nobody putting this reason in writing. There is a trend with some to discharge from employment men with known heart disease. This is done in different ways.

A 38-year-old man, working with a large firm for the past 15 years, developed a coronary occlusion. It was decided that light work was required in the future. Different reasons for rejection were given on each occasion, when an approach to the company was made regarding re-employment. The man was not re-engaged. The Insurance Company happened to be a subsidiary of the Employer Company. Alternate work was found for the man with a new employer. His employer told him, after one month, that he was to be dismissed because the Insurance Company would not cover him. This of course could not happen. What probably happens is this. The employer, or his Personnel Manager, seeks advice regarding whether his discount may be affected by employing a man with heart disease. The Claims Manager informs him that, if a further attack occurs, and the employer is liable, his discount is adversely affected. With a large firm, one or two heart attacks could cost a few thousand pounds profit. I have been informed by an Insurance Company claims manager, that this type of query is not uncommon.

Employment rejection can also occur through the doctor who screens men prior to engagement or on return after illness.

A 53-year-old metal finisher, employed by a large manufacturing concern, had a coronary occlusion. Although certified fit to resume work by his local practitioner, he could not pass the

industrial medical officer. When the doctor concerned was questioned about this, he replied, amongst other things, punctuated with vernacular, "In my job I've got a dual responsibility, to the company and to the employees. I've got to protect the Company. I've saved them a few thousand pounds on Compo, and I reckon I do a good job." The man obtained a job elsewhere. So, eventually, did the doctor.

It is difficult to determine how widespread these practices are, but if we continue following the American pattern, they will increase. The methods used there to gain a wider cover of social security through one benefit or another, do not reduce the problem; they compound it. Group Insurance, for sickness and disability, is increasing. The premium is paid by the employer to encourage employee stability. The man with heart disease presents a threat to the premium rating. This form of insurance is held with the Workers' Compensation insurer. Sickness benefits, under these schemes, are better than Workers' Compensation benefits. This has resulted in an extraordinary event. In some areas, the greater number of Workers' Compensation claims are brought by the Insurer, attempting to prove that the worker's heart disability is compensable. This, of course, would commit him to the lower benefit. When this occurs here there will be an interesting re-alignment of expert medical witnesses. Believers in the class struggle will be embarrassed to have, as medical bedfellows, those whom they presently regard as "Insurance Company Hirelings."

Another natural extension of Workers' Compensation legislation making medical evidence unnecessary, is to legislate that coronary occlusion and hypertension are due to the stressful nature of work, and therefore automatically compensable. This would presumably be supported by unions whose spokesmen have, from time to time, stated that these diseases are especially prevalent amongst their members. This is practically all unions. The painters consider it is due to the stress of climbing around inadequate scaffolding.[17]

In Massachusetts, policemen and firemen now receive automatic compensation for coronary disease and hypertension. This legislation was thought to be preparatory to similar legislation to cover the legislators. This is not, necessarily, medically unsound: prevailing medical opinion is that the outstanding factors in the production of coronary disease are "gluttony and

17 Melbourne *Herald*, 15 August, 1962.

physical indolence".[18] Before looking askance at this type of legislation, one must remember that the Australian electorate was recently given the opportunity of assuring that cancer would become due to war service.

His Honour, Judge Stretton, has written of Workers' Compensation—"It has opened up a new field of social insurance, the benefits of a great part of which are denied to many, and are to be won by the rest, by chance, and chance alone. If that was what was intended by the Legislature, so be it. Whatever was intended, one feels that one may, without impropriety, address to those who have induced the present burgeoning of the law, the question whether the perennial Hesperidean crop, which they have brought to fruition, may not yet break down the tree which bears it".[19]

I hope, tonight, I have shown you that the award of Workers' Compensation benefits for heart disease, and for similar conditions, is achieved not only through temporal chance, but through the necessary acceptance of scientifically insecure medical evidence. Though helpful to the few, it is harmful to the many. It is a cause of unemployment, disability and waste; it acts against the employment of older men; its socially damaging effects can be only partly eased by setting up medical boards; its further extension will lead to legislation bordering on the farcical; it permits us to avoid facing an important social problem.

With an adequate Social Security System, there need be no place for Workers' Compensation Acts. European experience suggests that Sickness Benefits should be, at least, two-thirds or three-quarters of the weekly wage.

It is best that this be at the same level as for industrial accidents, thereby avoiding a cause of psychologically damaging litigation. Hungary and Poland represent one model; Sweden and Norway the other. The former is preferable, being simpler, but it matters little.

Meanwhile, at a Federal level, political parties offer small handouts to sections of the community whose votes they wish to win, while in the States, squabbles continue about Workers' Compensation. The real issue is lost from sight. What is recommended tonight has worked overseas for years. The community

[18] Arnott, M. "The Changing Aetiology of Heart Disease." *Brit. Med. J.* 2, 887, 1954.

[19] Stretton, L. E. B. in foreword to *Workers' Compensation Acts*, by Anderson, K. and Beach, B. W. Pub. Butterworth, 1958.

must bear the added cost to obtain the added benefit. Of course, nobody will suffer but the doctors and lawyers, and they only financially.

Discussion

MR. G. LUSH, Q.C.: I should make it clear that I have not seen tonight's paper and I have listened to it on the same terms as everyone else here. It is impossible, in those circumstances, to deal adequately with all its social implications.

In the comparison that was made between social benefits in this country and those available elsewhere, the figures on which the comparison applicable to Australia was made were based on a percentage of the total basic wage. One can, perhaps, ask legitimately, "What is the basic wage based upon in these various places? Is it a consistent wage or is it something higher than that, and are we so far behind that if we allow bare subsistence on compensation?" I have no idea what the answer to that is. We move, at that stage, on to the field of social economics, and here, we enter the realm entirely of personal dependence and, perhaps, social prejudice, but one feels that the idea of keeping on compensation men who have had a spectacular incidence of heart disease, must have its inherent disadvantages. It must produce the result that many employers would not be willing to take them on.

I am not experienced, I am not knowledgeable on the question how all workers' compensation premiums are established, but it is within my knowledge that some companies—those following activities which are unusual, which are such that the insurer cannot compare the particular client company with a dozen others—are assessed for premium on their own experience, and those companies at least, must accordingly be reluctant to engage men who are liable to expose them to claims.

Apart from the statistical disadvantages of this, there is a very heavy personal disadvantage about it. Dr. Goble has said that in his experience actual malingering is an insignificant factor in the appreciation of the significance of heart cases, but there must be an awful temptation. That is probably the wrong word—if one discards the idea of malingering, then temptation must be the wrong word—but it is asking a great deal of a man who is safely getting his £12 a week by way of compensation to sign off that and go back to work and risk whether he will have to re-establish his right to compensation later.

There are many men, self-employed men, and men in relatively high positions in industry, whose performances after they have had gross coronary attacks are such as to suggest that most people can be very usefully employed in the years that remain to them after the first attack, but it would be interesting to see, statistically, the difference between returns to active work among the self-employed and those employed in high positions, and those who are employed on the basic wage plus some margin.

Dr. Goble was concerned to disparage attacks made on the Brisbane Board. No lawyer would disparage those attacks at all. A Board of experts sitting upon rights, sitting to adjudicate rights of individuals who are not represented by Counsel, and sitting as a Board before which cross-examination is not the practice, would never command the respect of lawyers, who would immediately attack it with suspicion. It may be suspected that in this State the Workers' Compensation Board proceeds upon certain rules of thumb, which in its judgment, appear as findings of scientific fact. A Board such as the Brisbane Board would be open to exactly the same suspicion in the minds of different bodied persons.

MR. E. C. MCHUGH said that Dr. Goble was perfectly right, but did not go far enough. Cardiacs think most of all about their essential dignity. The Workers' Compensation Act, as it is administered, deprives cardiacs of any kind of opinion. It invites nonsensical and venal medical testimony which is given, according as the medical witnesses are called, by the company applicant, or the respondent; and moreover, it puts a premium on convincing a tribunal that a man is useless; and once you have convinced a man he is useless, he is indeed useless, so he goes on £12 a week, into the scrap heap. Of course, there have been Presidents of the United States who have had the odd heart attack, but they do not count. All you have to get is a man who has had a heart attack, and he is thereupon written off, and it is worth £12 a week for him to be written off, and that is the vice of the Workers' Compensation legislation. A man with a heart attack is told that he is finished.

DR. A. WYNN said that the nature of the pathology of coronary disease is such, that one cannot speak in terms of really an actual cause even if there, at times, appears to have been a cause, in the legal sense. It is a disease which starts very often early in life, in the twenties, and progresses at a variable rate, and the actual cause is no more relevant to the attack, than the proverbial straw

that breaks the camel's back is relevant to the breaking of the camel's back. It is only a legal situation, whether the application of the straw happens at work or in bed. He said that Dr. Goble quoted extensively from the survey of the Yemenite Jews and must be very familiar with the brilliant study of the workers in the communal settlements of Israel which showed that the incidence of heart disease—of myocardial infarction particularly—is four times as high in the sedentary workers as it was in those engaged in strenuous pursuits. By that proposition, one is prepared to say it is not work that causes heart disease, but non-work. With this sort of proposition it was surprising to hear Dr. Goble advocating something resembling the Queensland Medical Heart Boards. These Boards are concerned with the proposition of whether a heart attack was due to work. I think this is intrinsically a false proposition. I do not think doctors should ever be asked this, and I do not think it will solve the social problem of workers' compensation if the present situation changed so that doctors were made to decide an issue of this sort, in those terms. One of the redeeming features of our Workers' Compensation Act is that it is not really, in any true sense, a liable compensation. There is no real implication of the employer being liable for a heart attack. It is enough for the attack to have occurred during work, or on the way to and from work. This remedies the concept of fault, and it is important that in any future discussion of social legislation for this disease, that the question of who was at fault should be removed, because this is intrinsically a question which it is not, as a rule, possible to determine.

JUDGE HARRIS said that at the moment, as Dr. Wynn has said, you do not have to show that the work caused anything at all, heart or anything else, to get compensation. It is sufficient that it happened at work, and all the expert evidence we hear, with the "expert" in inverted commas, and "evidence" in even bigger inverted commas, deals with whether that event did or did not occur.

On the other hand, if you had a system of liability which gave him compensation only if the work causes his trouble, he is going to be a scared man when he goes back to work again, if you get him back again, because he has heard all the evidence and the opinions expressed of the work that caused it last time and he will not go to work again.

Dr. Goble has got past, apparently, being concerned with that aspect of legislation because he has moved on to the logical

conclusion to this situation, that we should have some scheme of all-pervading national insurance to cope with all the ills of mankind. I have been surprised he has left out the English situation, in this regard. There, starting at the beginning of the century, compensation legislation came in, protecting a class which removed from judicial interpretation injury by accidents to the various extremes which we touched on tonight, until the mid-forties. They finally abolished that scheme for the National Insurance scheme. The rates of pay under the National Insurance scheme are, I would have thought, about the equivalent of our Social Service payments here.

This brings me to a final question, and that is: are we going to be any better off so far as the social implications are concerned, if we introduce a National Insurance scheme which requires a man to show he is totally incapacitated, as Mr. McHugh has been hinting at here is essential at the moment for payments under compensation law? If he has to show the same thing for national insurance, are we going to have any better psychological reaction on the part of the individual? Does he not have to face some barrier before he gets his benefits that way, anyway? And is the result that way any gain, or the community any better off?

DR. M. DAVIS said that one of man's important assets is his desire to continue to live, and when he gets his heart attack he fears the possibility that life may be taken away from him. I think that legislation cannot easily overcome this, and any legislation which gives him an easy way out is potentially dangerous. I see no gain—in fact, I see great danger in the Queensland system as against our present one here, in many respects, because of this very point and because of the comments already made by Judge Harris. I think it could well mean that we are substituting one form of weakening a person's morale with another and I do not think enough emphasis has been given to this aspect of the problem.

But let us get right away from this permanency of invalidity. It may surprise people here, perhaps, but I would say truthfully—I am speaking for myself alone—that it is a relative rarity for the coronary case not to go back to work. I stand up here and now and make that statement and will make the challenge—a relative rarity. Then what group, may we ask, is Dr. Goble dealing with? Might I add that I speak with experience from a public hospital and I suspect that the economic aspects of this problem, social indeed as they are, are of a nature that makes the case vastly

different from the case which, in fact, can be controlled if one can instil enough courage or desire to go back to work into the patient. Economic factors do come into it, it is true, but the most important aspect, I would repeat, is somehow or another to get the patient confident that he can work and will be able to work. Point one—give him adaquate economic control for the first few months of his attack. Point two—then make it, in fact, necessary for him, and I have had cause in certain opinions I have given to state this, that he will be better off if he returns to work.

This is the great tragedy of the present jurisdiction, and the legal profession has not caught up with the law of natural hazard. We go across a road and may slip and so on. We look immediately, from the legal point of view, for a cause—"Who placed the banana skin on the ground?" We will follow this matter up until we get someone to blame, and we will look for some culprit. All the Yemenite work of Toor shows that one aspect that comes into the problem is frustration and fear, quite apart from other factors, and I think the frustration of work is the far more important factor, so here we are arguing the toss about work, "Did he get this before running up ten flights of steps?" and so on, and what we forget is that in doing that, he was running to get there on time lest a major issue were decided without him or something of that order.

I personally consider that the worry that he could have been absent when the major issue was decided was more important than him running up the steps. Physical activity has nothing, often, to do with the case, and I think Dr. Goble will be the first to agree with this one, so let us accept the position of natural hazards and get down to reality and give the patient a little more hope, and be careful not to legislate that he will be given another way out.

MR. J. B. CURTIS: At issue is the clash between two proverbs, on the one hand, "A bird in the hand is worth two in the bush," and on the other, "It is better not to take the risk." The person who, to himself, appears to be disabled by an event in his life such as a coronary occlusion, has the bird in the hand, that is, the ability to receive compensation, and the bird in the bush is the possibility of employment. That is hypothetical. On the other hand, from an employer's point of view, or from an insurance point of view, perhaps it might be cheaper not to take the risk of re-employing such a person, but the problems that

Dr. Goble has posed tonight cannot really be solved in the interests of the community at large.

From a medical point of view, the difficulty in solving this subject or problem arises from our inability to be precise about the causation of disease, and I think this problem, particularly in regard to the law, applies not only to coronary heart disease, but to the whole gamut of diseases. Except in cases of trauma, it is seldom that one can be both positive not only to one's own satisfaction, but to others' as well, regarding the primary cause of disease and, therefore, within the terms of compensation, with such a condition as coronary heart disease, it frequently appears that the argument is concerned with legal words and phrases. A medical witness who is subject to the same psychological and other pressures as other people tends, within the terms of his oath and his medical knowledge and his social and psychological sympathies, to give evidence which must be biased in one way or the other. I would suggest, therefore, that really the solution of this problem is probably along the lines which I think Dr. Goble suggested. That is to say, the elaboration of some system which both encourages active and productive work, helps the community and the security of the patient himself, and also the psychological aid to a person who feels that he can be of some aid to society, as well as to himself, and an aid to his family as well. I would think that the solution to this lies neither in the profession of the law, nor in the profession of medicine, but really at a social level, in legislation.

MR. X. CONNOR, Q.C., said that one can understand how a person, who through absence of exercise during the last 40 years, has got himself into a condition whereby exercise, at the end, is just too much, and is a precipitating cause for the final event. It may well be if, 40 years before, he had started on his P.T., the last 40 stairs would not have mattered very much, and it also occurs to me if, for instance, the dietary explanation is ultimately accepted, one might very well get oneself into the position where, by not having adopted the correct diet for the last 40 years, the last 40 steps are pretty important. So far as the Victorian Act is concerned, it does seem that it is at least a step towards what Dr. Goble is contemplating because, it more than any of the other Acts in Australia, does seem to give benefits to workers because of purely temporal occurrence of certain events. It has

got closer to the social service idea, although it may not have got to the ultimate that Dr. Goble is speaking about.

MR. P. D. PHILLIPS, Q.C.: Listening to this discussion tonight makes me feel a very old man. I do not know whether I am the only lawyer present who made substantial money out of the word "and" instead of the word "or", but I would like to suggest that we are in danger of confusing two separate problems. First, is there some value in distinguishing between industrial or employment damage and other damage, and secondly, is there some danger or difficulty about the method of assessing compensation for that particular kind of damage? The Beveridge Report faced this problem. It contemplated an overall claim for social security or compensation for illness and sickness and accidents, and then the Commission asked itself, "Should you distinguish between accidents arising out of and in the course of the employment, and other accidents?" They considered this at great length and very carefully, and they came to a conclusion that there was a number of reasons for separating those injuries and accidents and illnesses from other influences, accidents and illnesses.

I was rather surprised that Dr. Goble said so little about the English scheme, because the whole Beveridge plan was designed to meet the evils to which he has been drawing attention, and I think, on the whole, has been substantially successful in doing so. It lifted the compensation for industrial accidents outside the sphere of litigation altogether. It made it into an administrative process, and two advantages were to try to get away from the problem of keeping a man on compensation by keeping him ill or sick or injured, and it tried to link together a plan of compensation with a whole socially-organized system of rehabilitation.

The administration gains by rehabilitating a man and getting him back to work just as much as the man gains. Here are two separate problems going side by side. One is the method for ascertaining compensation and treatment and rehabilitation on the one hand, and the second is, is there some good administrative reason for separating industrial accidents from the other accidents, though all should be compensated?

Now, I thought there was a little tendency, from Dr. Goble's remarks, because he felt they all ought to be compensated, to assume they should be treated in the same way and classified together. There are good reasons for separating them. On the

other hand, I thought he was entirely right in saying that the processes of litigation had not been appropriately carried over into this sphere of determining the amount of compensation. Beveridge saw that and rejected what had been built up in the Workers' Compensation Act in England up to that time, and substituted a new, relatively non-litigious process, of keeping accidents separate.

The hesitations of taking a man back to work are true over a great area of industrial injuries. I venture the suggestion that there is nothing peculiar about heart diseases in this respect.

I can remember in this Society years ago, hearing this kind of discussion about the coal miner who has a lump of coal fall on his spine and suffers a spinal injury. We used to be cynical and sceptical about the doctors saying, "The moment his compensation is cured, his spine will recover all its elasticity and flexibility and he will be well, and until his compensation is spent his spine is useless to him", but I suppose we have all learned wisdom by now and know that is true. The broad relations of psychological consequence of injury and sickness and compensation have now been well established. I would not have thought there was a case for lifting the cardiac problem out of other problems of industrial injury. They may be an acute example of it, but the problem extends over the whole sphere, so that I am only suggesting that this ought to be looked at in a rather wider and more general way and it should be classified into its two forms.

The great point about the Workers' Compensation Act, 1897, when it was first enacted, was that it prescribed compensation without fault. It is a different thing, of course, to say it was a liability for industrially-caused injury and accident, and that was true. I suppose it is still true that there is a liability for industrially-caused accidents, but it is less important now, because so many of the accidents arise in the course of the employment that one does not have to bother so much about the accidents that arise out of employment, but it still must be proved, even in regard to heart cases, though the problem of causation may arise when the cardiac event occurs not in the course of employment.

The great difficulty about Workers' Compensation—the difficulty between doctors and lawyers—is the misunderstanding of the nature of the causation which was required. It confuses the matter very much if one introduces the idea of fault or respon-

sibility. The whole point of the law was it was based on rejecting any such required fault. Well, the circle has now become complete. Time was when the doctors in this Society complained that this law seemed to impose a wide liability on employers. They gave evidence for the employers, and they felt that the employers were being fixed with a liability which had no moral basis. Some lawyers saying in those days, "Well, it has really got nothing to do with liability, with fault. Forget it. This is a curious and inadequate form of social security." Now the circle is complete. The medical experience is enough to have, shall we say, the more progressive doctors saying, "It is time this was treated frankly and logically as a system of social security". I think that is right.

THE CHAIRMAN (PROF. D. DERHAM): Gentlemen, before calling on Dr. Goble to reply to questions and remarks that have been made, I would like to ask two questions. In the table referred to as the Gains and Losses table, on the right hand side, there were two extraordinary tall columns, labelled "Physicians" and "Lawyers," as yet unexplained. I think I ought to ask Dr. Goble to explain them. The second question is that it occurred to me tonight that, although it may be true of the old charwoman who was dying, who said, "Don't cry for me now, don't cry for me ever. I'm not going to do anything for ever and ever," it may not be applicable to cases of heart disease. I would like to ask Dr. Goble how many compensable cases are receiving compensation like the one that I know of, who made this the occasion for exploitation, not as an employee, but as his own master, of a skill that he had, in this case, as a cabinet maker and, as the spirit moved him, to make much more money than he had ever made as an employee. Does the condition that you are concerned with prevent, in any way, in a large number of cases, the ordinary human desire, after being rested for a sufficient time to do something, and under the condition of nearly full employment, is there not perhaps a great deal of work being done illegally by some of the patients under compensation?

DR. A. GOBLE: Perhaps I could answer your questions first. I did not really wish to give offence to anyone, but I felt there was a number of members present tonight who actually made their living out of compensability of patients, whether for heart disease or any other conditions, and this includes physicians and lawyers. This was the sort of thing that I had in the mind

when quoting Tolstoy. To answer your question, considering how many patients on workers' compensation now make more money: I think probably very few. There are some who are receiving superannuation and workers' compensation benefits, or some other sort of benefits, and the compensation runs out after a time. I have seen quite a number of these people who, after four and a half years or, if they are lucky, nine years, having had an extension, the money runs out, the income drops, and then they begin to feel they have wasted the last four and a half or nine years and want to go back to work.

Most people in this situation, I think, are not very productive. They are probably wasting their lives and wasting, in a sense, the community's money, so I think we need not be influenced by the occasional one who is working in an unusual manner whilst on compensation.

I think, now, most doctors who have anything to do with workers' compensation realize that fault liability is not involved, and realize that very clearly. That has been forced on some through having, occasionally, to talk in the corridors with lawyers, and also others occasionally read. I have read, attributed to Lloyd George, the statement that "the cost of the product includes the blood of the working man." Such statements have gradually sunk into the medical conscience and we know about these things, so I think we do recognize that fault is not required in Victoria.

I feel a number of people tonight have concluded that I expressed the view that fault should be re-introduced, by my statement that the Queensland Board works. The Queensland Board of experts is, I think, immeasurably better than the Queensland Magistrates' Court in deciding workers' compensation cases for heart disease, because it decides it much more quickly—three or four months instead of two years.

I do not believe that in this State we should introduce Boards of experts to resolve our workers' compensation problems, with a pneumoconiosis panel, a heart panel, an ulcer panel and so on. I do not think this is a forward step. All it does is stop the chaos, and the chaos in Queensland had got so bad that something had to be done.

In Victoria, the chaos, I think, will get so bad that something will have to be done, and I hope it will be something sensible —an overall comprehensive national insurance scheme, whether following the British system, incorporating the recommendations

of the Beveridge Report as pointed out by Mr. Phillips, or as in Hungary or Sweden. The point I have been trying to make is that what we have now is socially inadequate and what we need is something that has been introduced in most overseas countries, but not in the U.S.A. If we do not introduce a national insurance scheme or something comparable in Australia fairly soon, what will happen is there will be increasing ramifications of the group and other forms of insurance; so we will have a large number of money-making businesses introducing themselves still further into the realm of social security. In other words, we will follow the U.S.A. and compound our present problems.

To Mr. Lush, I wish to indicate that the figures that I have set out were not a percentage of the basic wage but of the actual wage of the worker, who would be classified as a wage earner. In Australia, the figures were as a percentage of the basic wage. For New Zealand and the United Kingdom, they were a percentage of the minimum wage—a fixed rate of benefits—whereas in the others, they are percentages of actual weekly wages.

I think, on the whole, that the self-employed man is more likely to get back to work than the man who is not self-employed, and this probably for reasons obvious to all of us—that he can, to a large extent, adjust his own rehabilitation.

The Queensland Board works on a formula. I feel, with Workers' Compensation, because of the confusion regarding heart disease and so forth, that for heart disease it almost must be a formula, no matter where. I agree it is reasonable that the Brisbane Board could and should be suspected by lawyers, but as Mr. Phillips pointed out, this is not really the case in Britain.

I agree with Dr. Wynn that the question asked and the answer given to the query in New York were nonsensical because no one, in fact, does know.

Judge Harris was also worried that I thought it might be necessary to go back to involving causation. I did not for a moment. I feel the sensible thing is to dispose of workers' compensation altogether, allowing for the provisos raised by Mr. Phillips.

Mr. Curtis, I think, made the most important point from my point of view, that this is not really a medical problem or a legal problem—it is a legislative problem; and that one has to develop some concept acceptable to the community and also to the individual, as a service, embracing within it the aspects of

more security and the possibility of rehabilitation and future work.

Dr. Davis is worried about how many patients do not go back to work. Practically every doctor who has looked into this and has written a paper about it, says that the figure is something in the order of thirty to forty per cent. These are always someone else's patients, never his own!

The Victorian Act has within it a much greater social service content than other Acts. Because of other aspects of the Victorian legislation, including claims experience, it is now damaging to the worker.

THE INFLUENCE OF DISEASE IN HISTORY

By Dr. J. Bryant Curtis

Delivered at a meeting of the Medico-Legal Society held on September 19th, 1964, at 8.30 p.m., at the British Medical Association Hall, 426 Albert Street, East Melbourne.

History, to me, is the story of man's relationship to man and his environment. It is all too obvious that disease has played a vast and continuous role in this interplay. But it may be there are some particular incidents in recorded history of interest—and especially so if one can find that disease has influenced some particular episode popularly supposed to result from some other cause. The delight which such unexpected discoveries give to the mind is a wholesome and genial human characteristic which has been a source of great profit to Penguin and other publishers.

Firstly, I propose to examine the effects of explosive outbreaks of epidemic disease which appear to have played an important, if not dominant role, in modifying historical events.

Before the time of the Greeks we can rely on little but deductive guess work. In the time of Samuel, the Israelites went out against the Philistines and, when they joined battle, Israel was smitten before the Philistines. Again the Israelites went forth to battle, carrying the Ark of the Lord with them and the Philistines killed 30,000 and the Ark of God was taken. I now quote Samuel, 1, Chapter 5.

> "And it was so that, after they [the Philistines] had carried the Ark about, the hand of the Lord was against them with a very great destruction and he smote the men of the city, both small and great, and they had *emerods* in their secret parts. There was a deadly destruction throughout all the city. And the men that died not were smitten with the *emerods.*"

I am indebted to the Oxford dictionary for the information that emerods are haemorrhoids. But haemorrhoids are an affliction of the hinder parts rather than those more forward, and it is unlikely they would cause such a high mortality, painful as they may be. The word from which it is translated is *ophalim* which means "elevated rounded swellings" and it is quite feasible

that the Philistines suffered from bubonic plague with swollen glands in their groins.

As a result of this affliction the Ark was returned to the Israelites.

With Grecian history our knowledge is more accurate and factual. In the Fifth Century B.C. it soon became apparent that, after the successful repulse of the Persians by a triple combination of dysentery, Sparta and Athens, these two major powers of the Greek states were becoming irreconcilable rivals. Sparta was supreme on the land and Athens supreme on the sea. In the second year of the Peloponnesian War, the Peloponnesians were invading Attica, when the plague first broke out among the Athenians. Thucydides gives the following dramatic clinical description of the disease:

> "People in perfect health suddenly began to have burning feelings in the head, their eyes became red and inflamed, there was bleeding from the throat and the tongue. The next symptoms were sneezing and hoarseness of voice and before long the pain settled in the chest and was accompanied by coughing. Next the stomach was affected with stomach aches and with vomiting of every kind of bile. Externally the body was not very hot to the touch nor was there any pallor. The skin was rather reddish and livid, breaking out into small pustules and ulcers".

This disease is said to have come from Egypt and to have first appeared in the port of Piraeus. It is by no means clear what was the nature of this disease except that undoubtedly it was a virulent infection. It may have been plague but it is not characteristic.

Athenian life was demoralized. Thucydides writes that "the catastrophe was so overwhelming that men, not knowing what would happen next to them, became indifferent to every rule of religion or of law".

This catastrophe had a marked effect on the ability of the Athenians to wage war. The war dragged on for many years ending finally in the defeat of Athens and the waning of its civilizing influence on the Greek states and colonies. There is little doubt that this plague seriously undermined the power of Athens and was perhaps the most significant factor in her defeat.

The eclipse of Athens was followed by the first stirrings of Macedonia which eventually flowered in the amazing career of

Alexander. H. G. Wells, who was always a supreme optimist, regards the significance of Alexander as "the first revelation to the human imagination of the oneness of human affairs". He became for mankind the symbol of world order and the world dominion. His career lasted ten years, he conquered most of the known world, he died at 33 and dysentery was the cause. His Empire collapsed at his death and his unifying influence disappeared for hundreds of years.

The next epidemic to consider is the plague of Justinian which commenced in 532 in Constantinople. It spread west by ship to Italy and soon covered Southern Europe. It recurred in sporadic form until 590 at least. It is recorded by the Venerable Bede (in the Anglo-Saxon Chronicle) as occurring several times in England in the following century.

This period of the Sixth Century is one of the turning points of Mediterranean history. Before it the Roman Empire still existed, although battered. The Eastern Roman Empire was still Latin and controlled Sicily and the Eastern Mediterranean. The Ostrogothic Empire in Italy, Austria and Dalmatia, under Theodoric, was still essentially Roman civilitas, and there was a Roman Senate, Roman consuls and a Roman civil service. The same applied to the Visigothic Empire in Spain and Southern France.

By the next century and dying out of the recurrent plague the picture was totally different. Spain and Italy were no longer Roman in custom but Germanic in administration and law. During the Sixth Century Justinian may be regarded as the last of the Roman emperors in the East and after him the Roman Empire of the East really ceased to exist and was Byzantine and Greek in character and language. True, during Justinian's reign there was a brief resurgence of power with military glory under Count Belisarius so that the Empire extended again as far as Spain. But it was short lived and during this reign there was also the famous codification of Roman Law in the Justinian Code.

I would like to be able to think that the breakdown of society resulting from these plagues initiated these legal reforms of Justinian but their initiation preceded the plague, although it may well have stimulated the later codification which followed. This century of plague saw the crumbling of Roman civilization.

The Black Death of 1347 commenced in the Crimea and rapidly spread west, carried by Genoese ships. In the spring of 1348 it reached Florence and we are reminded of this whenever

we browse in the Decameron. It is an awful thought, but worth remembering, that without the plague, we may never have been delighted by the tale of the Monk and Abbot of Lunigiana, or the tale of Masetto de Lamporecchio.

The plague reached England in August 1348 and swept through the country from the ports. During the three centuries since the Norman Conquest the population of England had probably doubled. In a year or two it was reduced by one half to two thirds. Some villages like Bishopstone in Wiltshire, Teilgarsley in Oxford, Ambion in Leicestershire were never repopulated. The immediate effect was chaos. The socially conscious and most Christian part of the community died doing their duty. But, as in Athens, generally there was a great decline of social and moral standards. William Dene, the Monk of Rochester, tells us that "the people, for the greater part, ever became more depraved, more prone to every vice and more inclined than before to evil and wickedness'.

The plague did not stop the French War but turned it into a running sore. It enormously accelerated social and economic change. The purchase of freedom from villeinage had certainly commenced years before the plague but the acute shortage of labour brought the struggle between landowner and villein and labourer to an acute and open stage. There is no doubt that the fierce economic struggle of villeinage to free itself, of labour to increase wages and of employers to restrict wages by statute, between 1350 and 1380, hastened the freeing of men from the soil.

It is during this period of the reign of Edward III that the legal system took on its adult habit. The serjeants-at-law and the judges were the new aristocracy and it was in the litigation involved in this economic struggle that they sharpened their teeth. The lawyer came to be regarded as the rich man's servant and certainly the majority of judgments went to those who could buy legal help. In the thirty years after the first Statute of Labourers nearly 9,000 cases of enforcement were tried by the courts and in nearly all, judgment was given in the employers favour. "Of all who enforced the lord's rights, the lawyer was the most hated", says Arthur Bryant.

However, this popular notion of the law was not confined to the Fourteenth Century. With some, it has persisted to our own times and John Gay in "The Beggar's Opera", composed in the Eighteenth Century, makes Peacham sing:

A fox may steal your hens, Sir
A wench your health and pence, Sir
Your daughter rob your chest, Sir
Your wife may steal your rest, Sir
A thief your goods and plate,
But this is all but picking
With rest, pence, chest and chicken
It ever was decreed, Sir, if Lawyer's hand is freed, Sir,
He steals your whole estate.

But this picture of the law is not entirely true, certainly in the Fourteenth Century. The law performed during the reign of Edward III, its greatest function of protecting the legal rights of the individual. Though it enforced serfdom where serfdom could be proved, it construed every sign of freedom as proof of freedom. Without lawyers to plead and Judges to judge, this principle could never have found such articulate embodiment in the laws of England.

A further victim of the Black Death was the foreign Staple. The plague ruined the capitalists who had financed the King in return for the Staple in wool, and he turned to a system of free trade which revived exports of wool, brought prosperity to the wool growers and smaller traders, provided the King with revenue and restored the country's depleted gold and silver reserves, and left to posterity the wonder of the glorious churches of the wool counties.

There is little doubt that malaria has influenced the rise and fall of the power of the States. W. H. S. Jones in his book *Malaria and Greek History* puts forward the thesis that it was malaria which enervated and devitalized the great Greek civilization, leaving it to fall without any real struggle to Rome. He contrasts the brilliance of the Greek civilization of the Sixth to the Fourth Centuries B.C. and their struggles against Persians, to its weakness, pettiness and vacillation of later years. We were forcibly reminded that malaria is endemic in these regions by the experience of the French troops in Macedonia during World War I when, over a period of three months, there were over 120,000 casualties from malaria among 4 divisions of troops.

Angelo Celli, a great malarial epidemiologist, studied the history of the Campagna, the plain surrounding Rome. He found this area was populous and flourishing in four periods: 1. in the pre-Roman era; 2. during the height of power of Imperial Rome;

3. during the Eighth and Ninth Centuries; 4. in modern times from the Fifteenth Century. Between these periods it was desolate, poor and sometimes depopulated by malaria. It is interesting to note the relation of these populous periods to the Etruscan Empire which withered away, the might and splendour of Imperial Rome, and the resurgence of Italy and the development of the Papal State in the Eighth and Ninth Centuries.

Malaria has remained a great cause of death until recent times. In 1945 it was considered to be the cause of over 1,000,000 deaths annually in India. Its effect, however, is greatest, not in causing death but by causing chronic ill health and debility. The control of malaria, in the last 20 years, in those great endemic regions of Africa and Asia may, quite possibly, be having its effect in helping to produce the burgeoning vitality and aggressiveness of these younger nations. It may well be that our preconceived notions of the national characteristics of some nations will have to be greatly modified and perhaps quickly, as their endemic malaria is conquered.

Typhus came from the East and reached Europe, probably in the Fifteenth or Sixteenth Centuries. From then until well into the Twentieth Century it dominated military campaigns and decided many of them. The struggles of the Emperor Charles and King Francis were controlled by typhus, and it dominated the Thirty Years War in Germany. On one occasion, in 1632 Gustavus Adolphus and Wallenstein faced each other at Nuremberg but typhus defeated *both* armies before they could fight. In almost every campaign of the Eighteenth and early Nineteenth Centuries more people died from typhus than from battle casualties. Zinsser gives a graphic description of the effect of disease on the Napoleonic campaign in Russia in 1812. Until the entry of this army into Poland the health of the 500,000 men was good. It then progressively deteriorated throughout the campaign and typhus was the main cause, helped by dysentery. Battle casualties were certainly not more than 50,000 but by October 19th, when the retreat from Moscow began an army of only 80,000 remained. By December 8th at Vilna it had shrunk to 20,000. Of Marshal Ney's Third Army Corps only 20 men remained. The overwhelming majority of the casualties were due to disease.

Disease, of course, has dominated most military campaigns in history. The crusaders were defeated by disease, not by battle. Of 300,000 men in the First Crusade, 60,000 only reached Jerusalem and within 2 years 40,000 of these had died, mostly from

smallpox. The Second Crusade was unable to get past Antioch. The Fourth Crusade was ruined by bubonic plague and Frederick of Germany's expedition turned back to Brindisi shortly after sailing because of dysentery. The list is without end and becomes boring by repetition.

I pass now to a consideration of the part played by disease in individuals and their influence on peoples and cultures.

Until Einstein, perhaps the most famous of scientists was Sir Isaac Newton. His mathematical genius was the bedrock on which modern science was built. Yet what a strange person he was and what a curious way did he come to his proofs! The details of his life are briefly thus: born in 1642, he was elected a scholar at Trinity College, Cambridge in 1664 and in 1665 proceeded to the degree of Bachelor of Arts. In 1667 he was elected a fellow of the College. In 1665 he discovered the binomial theorem and in 1666 he commenced the elements of differential calculus which he called fluxions. In the same year he commenced to think of gravity extending to the orb of the moon. In the next few years he was mainly interested in optics which led to his construction of the reflecting telescope. Finally his *Principia Mathematica* was published in three books in 1686 and 1687, after unending badgering by Halley.

In 1692 to 1694 he suffered a "nervous breakdown". It was reported that he was going out of his mind. He apparently recovered and in 1695 was made Warden of the Mint, and Master of the Mint in 1699. From 1695, after recovery from his illness, until his death in 1727, nothing original comes from him. The great works of his life were completed by the age of 45 years. He suffered a nervous breakdown at 50 years. He lived to 85 years.

He was a genius and therefore not ordinary. But the picture of him as a rationalist, who thought only along lines of cold reason, cannot be sustained. As Geoffrey Keynes describes him he was not the first of the Age of Reason, he was the last of the Magicians. The key to his nature lies in his notes and writings kept locked in his box which run to almost 1,000,000 words. They have no value except by giving insight into his mind. After his illness they were never added to and remained locked for the rest of his life.

He had, to an unusual extent, the power of continuous concentrated introspective thought. He could hold a purely mental problem in his mind until he resolved it. Then having solved it he proceeded to the mathematical proof. There is the

story of how he informed Halley of one of his most fundamental discoveries of planetary motion. "Yes" said Halley, "but how do you know about that? Have you proved it?" Newton replied "why, I've known it for years. If you will give me a few days, I'll certainly find a proof for it"—which he did!

In his secret notes he deals with all manner of esoteric and theological subjects. He was not an Orthodox Trinitarian but adopted an unusual form of Unitarianism, a form which may best be regarded as a type of Arianism. This secret he concealed all his life. It was why he refused Holy Orders and therefore had to obtain a special dispensation to retain his Fellowship. The holding of this serious heresy (for those days and in his position) placed a grave strain on his psychological stability. A large part of his notes are concerned with alchemy, transmutation, the philosopher's stone and the elixir of life. All this was concerned with magic and devoid of science. There is no doubt that he was profoundly neurotic of an extreme type. His deepest interests were occult, esoteric and semantic. "He was suspicious, fearful and cautious" said Whiston, his successor at Trinity, of the Lucasian professorship.

And in 1692 he fell ill for 2 years. He lost, he says, "the former consistency of his mind". He was melancholic, sleepless and paranoic. When he emerged he was different. He moved to London, the Mint and the society of London. He was knighted by Queen Anne and for nearly 20 years was President of the Royal Society. There are no more secret writings, he is affable and charming and there are no more discoveries. Without his deeply neurotic nature where would we have been?

Florence Nightingale was born in 1820 and died in 1910. She became famous in the Crimean War in the 1850's and remained so powerful that in 1906 the India Office was still sending to her papers on sanitary matters for her comment.

She was born in France of rich and travelling parents. She grew up in England in the settled ordered way of rich landed English families. She was imaginative and introspective and tended to escape into dreams. She was intelligent, beautiful, passionate and dominated her older sister. At the age of 17, just as she was about to "come out" she received her call. In a private note she wrote "On February 17th, 1837, God spoke to me and called me to his service". She still, however, did not know what she had to do. She now waited for her task. For the next seven years she led a curious life alternating between the enjoyment of

a gay social life and the deep dissatisfaction of her mind at her lack of a useful life. In 1844 her destiny became clear to her, her vocation lay in hospitals amongst the sick. She then realized she must learn how to nurse. Against the unanimous opposition of family and social friends she doggedly won her way. Eight more years of struggle passed before she gained her freedom in 1853 to pursue her vocation.

By the end of the Crimean War England had placed her in a position of a national heroine whom no one could afford to ignore. But on her return to England her labours increased. Her struggle to improve the medical treatment in the Army with an unwilling Government proved too much. Whilst waiting for the Royal Commission to be appointed she wrote her own Notes, which ran to 800 pages in six months. Her plan was ordered under four headings; which may serve even today as the model for Army Medical Services:

1. Put the Barracks in sanitary order.
2. Found a statistical department for the Army.
3. Institute an Army Medical School.
4. Reconstruct the Army Medical Department, revise the Hospital regulations and draw up a new warrant for the promotion of Medical Officers.

But on August 11th, 1857, while the issue was still undecided, she had a complete collapse. This collapse was the beginning of her retirement as an invalid which lasted for the rest of her life. She was so ill, that it was generally thought she might die and she lived with the fear of impending death and the sense of urgency to complete her work before it occurred. She learnt to exploit her ill health and used it unscrupulously to gain her ends. If thwarted she collapsed with the recurrent symptoms of palpitations, fainting, breathlessness, weakness and inability to digest food.

She visited no one but the most eminent visited her. This state of affairs lasted for the rest of her life, and only changed in the last few years of it by the deterioration of vision and mental faculties.

This is an extraordinary example of hysteria, and one which was so skilfully and wholeheartedly used for the attainment of her aims for the transformation of the medical care of soldiers and then later civilians. There are few fields of human activity where one person achieved so much and where the changes were so great.

I will do no more than mention briefly some other cases: The fatal hesitancy of Napoleon the morning after Ligny, before Waterloo, said by some to have been due to an attack of painful haemorrhoids, and by others to a torpor similar to that at the battle of Borodino in 1812 which may have been due to his undoubted hypopituitarism. The relation of the birth of the Protestant Church of England and the probable syphilis of Henry VIII. The role of schizoid hysteria in the amazing career of Joan of Arc. There are many others.

Finally I come to another curious finding. Today it is becoming known that more and more diseased conditions are due, not to external or degenerative factors, but to inborn genetic patterns. In the same way as an increasing number of diseases are found to be genetically inherited so there appear to be genetic strains of superior intelligence and ability which, in successive generations play a dominant role in the affairs of mankind.

The families of Macauley and Trevelyan and their relationship are well known; and also the strain of brilliance which runs through the Huxley family and the Strachey family.

W. T. Gun in his *Studies of Hereditary Ability* gives us some amazing instances:

1. Dryden, Swift and Horace Walpole in the Eighteenth Century were cousins, all being descended from John Dryden of Canons Ashby.

2. The descendants of John Reid who fell at Flodden Field in 1415 included in the Eighteenth Century, Boswell, Robertson the historian, Robert Adam the architect and Brougham. Among his twentieth century descendants are Bertrand Russell, Harold Nicolson, Bruce Lockhart and General Booth-Tucker of the Salvation Army.

3. The descendants of the Highlander Auley Macauley, apart from the Trevelyan and Macauley families mentioned above included such as Hugh Walpole, Lytton Strachey, Compton Mackenzie, Maurice Baring and Virginia Woolf.

4. The most remarkable family of all is the Villiers family, who provided George, first Duke of Buckingham, the favourite of James I. Those descended from the son of Sir John Villiers and the daughter of Sir John St. John include: Barbara, Countess of Castlemaine, mistress of Charles II; Arabella Churchill, mistress of James II; Elizabeth, Countess of Orkney, mistress of William III; Lord Rochester; Lord Sandwich; Duke of Marlborough; Duke of Berwick; Duke of Grafton; The two Pitts; Charles James

Fox; Charles Townshend; Lord Castlereagh; The Napiers; The Herveys; The Seymours; The Jerseys; The Lansdownes; The Cavendishes—Dukes of Devonshire; Lady Hester Stanhope; Lady Mary Wortley Montagu, the distinguished eighteenth-century letter writer; and Sir Winston Churchill.

Is this an indication that certain small strains have produced eminent characters out of all proportion to their size?

I leave this last speculation with you.

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Discussion

MR. K. A. AICKIN, Q.C.: The role of the medical profession played little part in this paper which we have heard, and I think that that is something which, perhaps, those members of the medical profession, who form part of the audience, might supply. What, if any, influence the Army Medical Corps of Alexander, or before Alexander and onwards, may have played in the campaigns, of which we have heard a little, has remained obscure.

The selection which we have had of famous people is an interesting one. I do not know what common feature is to be found between Isaac Newton and Florence Nightingale. Longevity suggests one tie. One suspects that there is another common feature between those who achieve the kind of results which Florence Nightingale did, by resort, consciously or unconsciously, to unfair means which she exploited from the age of 17 onwards, if her recent biographers are to be believed. One cannot doubt the effectiveness of her personality at all levels upon the persons with whom she had to deal. Whether that was due to disease, or to psychiatric difficulties or problems I have not really gathered. Perhaps Mr. Curtis will add a word or two about that.

So far as Isaac Newton is concerned, perhaps one might just say this, that it has come to be a common belief in the lay world that scientific achievement is confined to those under the age of about 35, and that really new ideas in scientific fields do not come to those who have achieved that age, and that it is not because of any other reason that they are diverted into fields of administration and the like. I do not know whether the medical profession, who, of course, stand much closer to science than lawyers do, really agree with that, but one might ask of Einstein, for example, whether in the latter half of his life he produced new ideas comparable with those which form part of his first treatise on the general theory of relativity.

THE CHAIRMAN (PROF. D. DERHAM): I would like to ask our speaker three questions. I would like to ask him whether he does not think the connections he draws between the famous people he mentions might not be as much concerned with the old maxima of the Greek matron in regard to the marriage of her daughter, that she should not marry for money, but she should go where money is, as it is with genetic links from generation to generation?

The second is whether he or other members of the medical side of the Society can say something about the particular chances that seem to affect individuals or groups of individuals in times of plague, so that a man, by having some kind of built-in immunity to the dangers that surround him, may achieve greatness not simply by longevity but by this built-in immune condition.

The other question is, has our speaker considered the effect of the periodic diseases, some of which he mentioned, on social structures? I suppose the most complex one is to be discovered in India, where you have over 200 castes. Were the rules and conditions of some of the castes based on the knowledge of some of the different kinds of diseases as much as anything else?

DR. SPRINGTHORPE said that scientific medicine with regard to the understanding of the causation of disease, on which any rational treatment must be based, only extends back possibly 100 years, or perhaps a bit less, so that the question of Mr. Aickin as to how much the medical advisers of the great generals and war-makers of the past may have contributed to or minimised the disasters of ill-health which decimated their armies is easy to answer. There is so little knowledge about aetiology and so

little known about the Black Death that it was not known until 100 years ago that there were infective agents at all, so the medical profession were even more handicapped than they are now!

DR. E. BEAVIS: The First World War was largely fought by two important medical factors. These were the existing form of what we would now regard as quite empty control of things such as typhoid and other infectious diseases, and the intelligent application of principles of nutrition against the country we were fighting.

I would also like to hear about what seems to me to be the most important influence of a psychopathic personality on history, and I refer now to the personality of Hitler.

It also appears to me that one of the main features of the tremendous changes occurring in the world as a whole at present is due to the influence of medicine. I am allowing for some increases in the population, but it would appear to me, and I would like to know what the legal opinion is on this, that if we are to survive as rational, safe, and reasonably comfortable people in this world, it is essential that medical techniques are applied to control population explosions, when the factors which have previously prevented these from developing no longer exist because of the intelligent application of medicine.

MR. JONES said that the segmentation of Germany, in turn, depended on Augustus' decision to draw the line of the Roman Empire at the line of the Rhine. As the defensive activities of the Germanic Arminius had resulted in very heavy losses of Augustus' legions, Augustus decided that the Roman Empire could not be extended beyond this point because of the strong resistance met. It is of interest to postulate that Augustus' decision led to the absence of Roman roads and any means of communication. The absence of a system of uniformity in Germany led to this fragmentation into city states, and this highly competitive attitude between them, which, in turn, in surgical endeavours led to the extraordinary development in all areas of surgery between 1830 and 1885.

MR. S. E. K. HULME: It occurs to me to wonder about the very very strange case of the man who, I suppose, has had the most capable mind that has applied itself to politics in this country, and that is Alfred Deakin.

Towards the end of his successive terms as Prime Minister, as

is shown in his notebooks, Deakin was trying desperately to resign with, in effect, both parties insisting that he should not resign, but should remain as Prime Minister. Meanwhile, he kept voluminous notebooks, written at night, saying that the reason why he ought to cease to be Prime Minister was because his mind had gone, something of which he apparently was conscious long before anyone else. In these notebooks, which went on on this subject from, perhaps, about 1912 throughout the rest of his term as Prime Minister, Deakin was portraying in the notebooks, every night, all the indications of the manner in which his brain had failed during the day—people whose names he had not remembered, quotations which he had known for 50 years which he suddenly could not bring to mind. It is rather strange to remember that this man had been Prime Minister for at least two years after he had arrived at the view that he was totally unequipped for the job on the basis of his mental condition as it was at that time.

Most of these notebooks, all of which have been preserved, have been up until recent times kept unavailable by the family. It occurs to me that it would be very interesting to, I suppose, psychiatrists and may be other kinds of doctors as well to look at these books which were kept on a day to day basis, and contain, apparently, from what is known, a very honest record by a most distinguished person of the symptoms which decayed his own mind.

MR. ABEL said that in the interplay of disease and history, disaster has often been regarded by many religions and many sub-divisions of religions as a Divine punishment and not as a matter to be cured scientifically. To what degree has established order retarded or discouraged research in disease by insisting that it is part of a Divine punishment?

DR. H. LEE: Rising before this party, I feel very much like I did a few months ago in New York when two cars came together. I was riding in one, and the bumpers came end to end, and a 200 lb. 6 ft. negro got out and came up and looked at us in our car, looked us all over as we were sort of quivering in the background, and said, "It is a good thing I have killed my man for today", and got back in his car.

The distinguished Chairman earlier said that he wondered what effect doctors had had to make on history, if any. Being an American, we do not really recognize any history prior to 1776,

so I must confine myself to more modern times. One of our Presidents sneaked out to sea with a cancer of the antrum—that is this segment of the face—and, totally unknown to the entire American public, he spent six weeks at sea, had his whole upper jaw and maxilla removed, came back with all his new teeth in place. Nobody knew that anything had happened. Everything functioned totally and completely without any apparent change in the Government going on.

Mr. Eisenhower suffered a stroke, a coronary, and intestinal obstruction during his term of office, and about half-way through his Presidential tenure, abdicated his responsibilities totally to his Vice-President. For two years Nixon really carried the load with an ill President who was carried along by doctors, essentially meeting the front line.

To get right up to date, Mr. Kennedy would not have been President at all had it not been for cortisone. He had Addison's Disease, and with this, in this day and age, this is a completely curable disease by replacement hormone. He underwent an operation when he was Senator, and had massive replacement of his adrenal hormone, and was able to carry on and become President in the face of what, 20 years ago, was a fatal disease. His contribution, of course, was cut short by something that even our neuro-surgeons are limited in their ability to treat.

DR. HURLEY said that a young President kept alive is a good thing, but when you have aging politicians, and these politicians remain in power and they get older, and medical men keep them alive when it is clear to everyone except themselves that, really, they have "had" it, is it a medical or a legal problem to quietly remove them?

MR. J. B. CURTIS: The medical profession has had practically no influence at all until the last 100 or 150 years, and I am not at all sure that its influence in the last few years is something that I want to talk about. It is perfectly true, of course, that what we have done in the last 30 years is a subject which could easily fill another evening's discussion. We have conquered, to a great extent, or, at least, are capable of conquering the great infections and the great nutritional diseases. We have conquered, in the main, the powers of nature to kill us off before we can fight back. We have not really convinced humanity of the necessity of controlling our destiny in other ways yet.

What I was trying to say about Florence Nightingale was that here was a woman who, although she did not manifest in an overt

way her frank hysteria until 1857, nevertheless the elements of her personality which finally resulted in this hysteria were present from 1837 on, and it was this make up of her own personality, the product of her person genetically, and her environment, which provided the drive in this curious fashion, this single-minded drive against all the dictates of the ordinary demands of life, and when it was apparently almost defeated, only then did she become overtly an hysteric, and then it was so beautifully and carefully used that for another 40 or 50 years she kept on using it to achieve her aim.

The thing that I found so extraordinary about Newton was not that he was a person who produced these extraordinary things in his youth, but that he was a particular psychological type who, as he had his open life, also had this secret life which he took great pains to conceal from people, and then he had this extreme nervous illness, and, after that, the whole man is changed. I think this is the important thing about it, not that he produced work and gradually declined into that slough which we call old age, but that there was this dramatic change associated with a nervous illness, and I must say a nervous illness is a disease in the same way as a gangrenous limb.

I do not think I shall enter into any controversy regarding the essential elements of the psychopathic personality of Adolf Hitler, apart from agreeing with its general premise. I thought that Mr. Jones produced a most stimulating thought, one with which I had not concerned myself at all, except insofar as he mentioned Roman roads.

Our visitor from the United States opens up a vast and most interesting study, which, again, it is impossible to attempt to cover tonight. I must say with regard to the late President Kennedy and his treatment with cortisone in the days when he was alive, just what effect the euphoria of cortisone might have played in the making of grave decisions that he might have come to from time to time.

I think Dr. Hurley covered most of the other outsanding questions in his very short but pungent comment.

THE LORE AND LAW OF TISSUE HOMOTRANSPLANTATION

By Professor Maurice Ewing
Professor of Surgery, University of Melbourne
and
Mr. R. K. Fullagar, Q.C.

Delivered at a meeting of the Medico-Legal Society held on Saturday, 27th March, 1965, at 8.30 p.m., at the British Medical Association Hall, 426 Albert Street, East Melbourne.

Professor Ewing:

If, on the one hand, I attempt to oversimplify this topic of homotransplantation, you will, no doubt, be intolerant of my condescension: if on the other hand, I make the mistake of overestimating your capacity to understand complicated biological happenings, while pretending to be flattered by my presumption, you are unlikely to give me either sympathy or attention, both of which I assure you I need in full measure.

Fortunately, I believe myself to be vulnerable to neither form of censure, and for the following rather complicated reason.

It is certainly true that, in any enunciation of the laws of homotransplantation, one comes up against a whole host of difficult and fundamental biological problems, in the study of which I have no practical experience, very little insight and next to no understanding. To give an account of them in scientific phraseology is difficult enough, but to translate them into simple language and then to present them to you in a persuasive argument is quite beyond me, for it would require the kind of forensic skill of which only people like Wood-Jones were so clearly capable.

I am also very acutely aware of the tremendous contribution which has been made and is being made by Sir Macfarlane Burnet and his colleagues, to the understanding of the subtleties of the cellular reactions that follow transplantation. There are also many others in this city who are so much better versed in these matters than I, that I feel bound, on the score of honesty, to make no pretence about things and to limit my contribution to the discussion only of those aspects of this very big subject, of which I have had, at best, a rather restricted experience.

Your Medical Secretary at a relatively late stage in our mutual negotiations slipped the word "lore" into the topic and tempted me to be discursive. However, since I am not very sure what "lore" really means, I resisted the temptation, and plan to abuse my privilege as opener and to leave (without warning I may add) this aspect of our subject to my colleague at the other end.

Within recent years, there has been a good deal of interest, in lay circles, no less than in medical ones, in the potential of organ transplantation and much speculation has followed, real and unreal, practical and philosophical. I have, for a good many years now, shared in the general excitement, but it is only within comparatively recent times that the feasibility of such ambitious exchanges has been borne home to me in a challenging way.

Rather more than five years ago, one of my colleagues in the University Department of Surgery, Mr. Vernon Marshall, introduced to our Victorian community a machine designed to assist in the treatment of patients, suffering from certain forms of acute renal failure. The equipment had first been developed by a young Dutch physician working under the difficulties of Nazi occupation. Basically it pumps the patient's blood along two very long sausage skins which are wound together in a neat roll immersed in fluid. As the blood passes along the tubes the waste end-products of metabolism, which would normally be filtered out by the cells of a healthy kidney, pass through the pores of the cellophane membrane and are removed in the bath fluid. This equipment, which we rather grandly call an "artificial kidney", has made a very important contribution to the saving of life and, with its help, we can now hope to protect our patient from what would otherwise be a fatal intoxication, while the damaged units in the kidney gradually recover their function.

Now in the course of our practice, a few patients who were admitted for treatment on the artificial kidney, with what was first believed to be acute renal failure, were later shown to be suffering from an exacerbation of kidney disease of long standing.

In many of these patients irreparable damage had already been done to other tissues such as the heart and arteries and to them we could hope to offer no more than temporary respite.

A few were, however, found to be in all other respects healthy young men and women, often with heavy business and family commitments and each doomed to die within a few weeks or months, from the damaging effects of progressive renal failure. And yet all they needed for survival was at least one good kidney.

It was not easy to abandon these patients: at the same time we realized that we had neither the money nor the resources to keep them alive by treating them on the artificial kidney say 2 or 3 times a week, as is now being done in some parts of the world.

"If only," we said, "If only we could contrive ways and means of transferring to each of them a healthy kidney that could reasonably be spared by another person".

It was a challenging assignment, and we felt that we could not resist the pressure of events and must take a careful look at the possibilities of a kidney grafting programme.

This was in 1963. What were the conditions then prevailing in the field of homotransplantation?

First, let me remind you that auto-transplantation, or the transfer of tissue from one part of an individual to another was, of course, a commonplace of surgical practice, and the auto-transplantation of skin in the form of grafts, which are taken from those parts of the body where there is a sufficiency of it and applied to other parts where it is in short supply, is a surgical exercise in which our plastic surgery colleagues excel.

In general, success or failure in skin grafting is determined by the surgeon's own technical skill and by his good judgment, for there are no fundamental biological factors operating to threaten the graft's chance of survival.

A similar success rate should attend the transfer of tissues from one identical twin to another—for such an exchange is of precisely the same order as auto-transplantation.

We knew that as far as the technical exercise of transferring a kidney from one person to another was concerned, this was not too demanding, for the kidney is a tidy organ, relatively easy to handle, and having only three tubes, an artery, a vein and the ureter to be coupled up to the corresponding tubes in its new host. Using the precise suturing techniques which were already well established and with the help of heparin, which prevents the embarrassing clotting of blood, this had been successfully achieved on many occasions.

We also recalled that the homotransplantation of blood is a commonplace of medical practice; 69,000 bottles are processed each year from our own Red Cross Blood Bank in Flinders Street. It had, however, been recognized for a very long time that blood is not all of the same kind or group and that we cannot, without grave risk, transfer blood indiscriminately from one

individual to another without having first carefully matched the cells of the donor against the serum of the recipient.

Our experience with blood transfusion suggested that we might expect to find equally significant dissimilarities between individuals in the exchange of other more complicated tissues. Perhaps we might expect these differences to be even more troublesome and certainly more persistent when we recognize that, when we receive a pint of blood, we offer hospitality to a temporary visitor only, for the life span of each of its component red cells is only a matter of a few weeks.

At the same time there appeared, in practice, to be certain well-recognized exceptions to what might have been expected to be an inflexible rule of biology. We knew that it is possible to replace a scarred and opaque cornea—and the cornea, I would remind you, is the transparent layer which lies in front of the pupil and the lens of the eye—to replace this layer by a graft, taken with no attempt at preliminary matching, from the eye of a donor after death, with every expectation of long survival and excellent function.

At the same time, it had been established that the success of transfer of bone or of blood vessels from one person to another, was more apparent than real, for although both tissues served as admirable temporary scaffolding during the slow process of repair by the tissues of the host, they did not last for long and having served their purpose in this valuable role, they then quietly disappeared.

However, with corneal grafting as the only real excuse for optimism, a few surgeons had begun to take a more lively interest in the possibilities of more ambitious homotransplants.

It was in the context of extensive burns that the problem had first presented itself and that in an urgent and demanding way for, in these circumstances, the area of undamaged skin is often too small to provide grafts to cover all the burned areas. Without adequate skin cover, the chance in such patients of survival is remote. Little wonder then that the surgeon in desperation turned to the parent—for this happening is particularly common in childhood—and tried to make good the deficiency by a homotransplantation of father's or of mother's skin.

The immediate result was always satisfactory, and the graft showed every promise of taking well. It matched in every way the performance of an autograft (that is one taken from the child's own restricted supply of donor skin) but within a matter

of 7 to 10 days the situation changed completely. The graft first became shrivelled and discoloured, gradually lost its grip on its new host and finally, to the intense disappointment of all concerned, disappeared.

Although the time interval between grafting and failure was not constant, the end result was invariably the same.

Attempts to repeat the experiment in the laboratory animal fared no better. The story was as before: apparent initial success followed by the disappointment of a complete failure to take—not one single fragment of the graft surviving.

This rejection of a proferred homograft by a child, at death's door because of an insufficiency of skin, appeared to be an expression of the organism's obligatory preservation of the sanctity of the individual. After all, we find the prompt and vigorous recognition and rebuffal of foreign material of bacterial or of viral origin to be eminently salutary, and we take good care to encourage such responses when they are not immediately and naturally available. Is it then so unreasonable that the child's defence mechanism should equally resist the intrusion of alien skin or of other tissues? Studies in the experimental animal have made it abundantly clear that this is so, and that we each possess an extremely sensitive defence mechanism which is always on the alert, faultless in the preservation of "self" and in the rejection of everything that does not belong.

Recognition of this innate and apparently immutable capacity to preserve, at all costs, the oneness of the individual, was a great blow to the high hopes of the surgeon who now found himself in possession of all the technical "know-how" required for organ transfer, but thwarted and humiliated by apparently insoluble difficulties at a cellular level.

There were, however, still a few rays of hope. It had been recognized, for example, that in the animal kingdom, and rarely, too, in man, *chimeras* do exist—individuals which have in their make-up cellular components of differing genetic constitution. This is seen most commonly in calves when dissimilar twins have shared a common placenta and a common circulation and are found, when they separate after birth, to have blood-forming tissue of two different groups but surviving side by side in apparent harmony.

To explain this surprising state of affairs, Sir Macfarlane Burnet first put forward the thesis that in foetal life, before a certain critical point, which might vary a good deal in time from

one species to another, there exists a state of affairs when the introduction of foreign material does not excite an immune response, and is apparently tolerated and accepted as a part of "self".

Sir Macfarlane Burnet's brilliant theoretical concepts were later matched and confirmed by the experiments of P. B. Medawar in London, and their work was honoured in the joint award of the Nobel Prize in 1960. Medawar found that it was possible to introduce into the foetus, tissue from an animal of the same species, and that this homotransplant would thereafter survive happily in a state of what he called "activity acquired tolerance". When, at birth, the host's defence mechanism was firmly established (the police force had been recruited and trained and was now operational) the foreign tissue had, long since, won a place for itself and was happily integrated and accepted as really belonging to its new host.

More exciting still was the realization that a skin graft (or, in fact, a graft of any other tissue) subsequently transferred to the recipient from the original donor was assured of an entrée at any time and of immunity (using immunity this time in the diplomatic sense).

Unhappily, this device did not "open sesame" to all homotransplants, for the tolerance was almost unbelievably specific and restricted only to the tissues of the original donor animal.

Reluctantly, we had to admit that, however exciting these events might be to the immunologist, they had no obvious relevance to the practical problems of organ homotransplantation, except, perhaps, in safeguarding in an idealistic society a very favoured person, by the injection, while he is still unborn, of tissues from a panel of prospective donors, capable of offering him in later life a real insurance against the failure of some replaceable organ.

The wonderful experiments of Medawar did, however, suggest that we should not put out of mind the possibility of being able to modify the immune mechanism in adult life. After all, if foreign cells were able to tip-toe past the policeman on duty, while its members were still untrained and sleeping, might it not still be possible later when security provision was complete so to influence its members, that they would be rendered temporarily (or better still permanently) incapable of recognizing and turning back an intruder.

It did not seem a very likely possibility, but, from the biolog-

ical point of view, it was a more attractive proposition than the alternative, which was to modify the graft itself in some way, or to conceal or camouflage it so that it could go masquerading as a group of cells belonging to the body's own cell population.

It was known that the immune mechanism could be put out of action by exposing an animal to a carefully-controlled dose of whole body irradiation. Accidental exposure to dangerously big doses of x-rays had also made it quite evident that precisely the same result could be expected in man. It seemed, in any event, to be worth a trial and from subsequent experience the capacity of irradiation to suppress the normal immune reaction was never in question. There were, however, difficulties in determining the correct level of dosage, and there were so many profound and damaging effects on other tissues of the body (for example, the red bone marrow was put out of action completely) that it was soon recognized that this was not a feasible, or indeed an allowable, method of achieving our objective.

Then, in 1960, two distinguished immunologists in the United States discovered that they were able to block the immune mechanism by the administration of a variety of drugs called "anti-metabolites" which had been introduced in the first instance in the treatment of cancer. Their precise mode of action was uncertain but they appeared to block certain phases of protein synthesis in the cell.

The importance of this observation in the field of organ homotransplantation was quickly recognized and the results of the discovery were as promptly transferred, first to the animal and then to human experiment. It soon became evident that they did, in fact, have this intriguing capacity to dampen down or hamstring the immune mechanism ("immuno-suppression" we called it) so that a state of what was really a drug-induced tolerance was established. There drugs are relatively inexpensive and easy to prescribe so here we were at last able to contemplate, for the first time, the grafting of an organ (or of any other simpler tissue) from one individual to another and that with a reasonable prospect of survival and function. Little wonder, then, that work was pressed ahead with great enthusiasm and that in just over two years, the first report of the successful transfer of a kidney was reported with the aid of one of these immuno-suppressive drugs.

This, then, was the state of affairs when in 1963 we were looking for a future for our derelict young folk with chronic

renal failure. We felt that there was sufficient evidence to justify our planning in terms of kidney grafting in the treatment of a select few patients stricken with irrecoverable renal disease.

Further progress has been made in the two years that have elapsed since, and the tally of success is slowly rising. We are, however, a long way from the end of the road. The drugs are very toxic and there is a critical level of dosage, beyond which the patient will suffer dangerous side effects, and below which suppression will be inadequate. Further, they are not specific and every element in the immune mechanism is affected—so that, while the organism may enjoy the rare privilege of harbouring a valuable kidney gifted by another, this is achieved only at the expense of a dangerous vulnerability to other noxious agents such as bacteria and viruses.

We necessarily commit our patient to continuing treatment with these powerful drugs, perhaps for the rest of his life, for fear that discontinuance of suppressive therapy will lead to a prompt rejection of the entire kidney.

There are, in addition, difficult ethical and moral questions which must be met and answered and even the preservation of good public relations in such a project needs very careful handling.

When considering the source of an organ graft, there are two possibilities, either we enlist the help of a volunteer donor or we take it from a suitable corpse.

The first is the more attractive alternative. First we can check to see whether or not the kidney is healthy. At operation an excellent blood flow is maintained until the last minute division of the artery, and since the timing of the transfer will be completely under the surgeon's control, the interval that elapses between the taking of the graft and its union with the blood vessels of its new host will be reduced to a minimum. Moreover, care can be taken to match donor and recipient as critically as is possible (for it is now known that the outcome is not "all or none" phenomenon, but that the chance of success is directly related to the existence of any degree of genetic affinity between the two).

Difficulties in getting the permission of a living donor are real only in the case of a child. In striking contrast, a patient seems unable to exercise any effective control over the fate of his body after death and authority to tinker with it is vested in the next of kin, in the coroner or in the Public Trustees, all of whom

may properly be reluctant to accept the responsibility of committing to the grave, a cadaver which does not possess its proper complement of kidneys.

A volunteer who donates a kidney continues to enjoy a very reasonable prospect of living to a ripe old age. There is, however, a measurable risk associated with the removal of a kidney, and a young man left with only one kidney is obviously more vulnerable to kidney failure from one cause or another, than is a man of the same years who has two of them.

It is astonishingly difficult from a practical point of view to find suitable donors for it is only when a relatively young and healthy individual dies rather suddenly, as for example, from a head injury, that one can confidently expect to recover a really good kidney. Moreover, it is highly likely that, in the process of dying, the kidney will enjoy only an indifferent blood-supply and a low perfusion pressure and since the time of operation has to be related to the unpredictable time of death, it is all the more difficult to bring the donor and recipient and surgeon together quickly. For this reason, the kidney is likely to be for longer without an adequate blood supply.

We also run into great difficulties in establishing the actual moment of death, for we must not run the risk of censure on the score of anticipating our patient's last heart beat, or of snatching the kidney before he has relinquished even the most tenuous of holds on life.

Further, when we select a cadaver graft, there is unlikely to be any time for a leisurely study of the closeness of matching of donor and recipient or even the presence of one or other of the relatively common anomalies in the number and calibre of the blood vessels.

On the other hand, loss of a kidney can do a corpse no harm, and if the first graft fails to survive, the loss is not catastrophic and we can seriously consider trying again.

We all recognize that we must operate under legal restraints, if we are to protect the interests of the dead, but we find it irksome if, at the same time, these restraints operate against the interests of the living. We are very much in need of support and guidance in resolving many of these difficulties and with these in mind, I look forward with great interest to hearing from my distinguished legal colleague of some of the niceties of these issues and of their interpretation.

I think surgeons tend by nature to be optimistic (and I

suppose it is best for their peace of mind as well as for that of their patients that this should remain so), but even the most enthusiastic advocates of homotransplantation would admit that we have as yet advanced very little beyond the experimental stage.

At the moment we claim to have some understanding of the laws of homotransplantation which, unhappily, we find in the event so inflexible.

Instead of devising ways and means of modifying the law and of easing the restraint under very special circumstances, we have adopted a rather shabby and subversive alternative which really implies seeking out all the policemen and binding and gagging them at their place of duty.

Such a practice is allowable only under extreme provocation and it is up to us to find a method which does not challenge the law as it stands (as it has been framed to safeguard the interests of the many) but which seeks for legitimate pleading to have it amended from time to time, or suspended if need be, in the interests of the few.

There is, however, as I can foresee, no reasonable prospect of our being able to change the way things are, certainly not for quite a long time to come and our efforts meantime are unlikely to be crowned either with uniform or lasting success.

MR. FULLAGAR, Q.C.:

Mr. President and gentlemen, Professor Ewing has said, and I was rather disappointed when he said it, that he is looking forward to some support and guidance on the questions which the medical profession feel arise as a result of this new science of tissue homotransplantation. I feel little qualified to give an address on this subject. When I did a law course at the University, no knowledge of the law relating to tissue homotransplantation was required for examination purposes, no lectures were given upon it, and we were not told that there was any law relating to it at all. In fact, it was not until I was asked by a surgeon who I understand is a very successful tissue homotransplanter to give this address, that I heard of the subject.

After considerable research I have concluded that the law relating to this subject does not exist. And so one must try to forecast, as best one may, what the law might say on these matters if and when some surgeon or patient collides with the law in respect of them.

By way of introduction, it is essential to appreciate at the outset that the method of development of the common law is inductive rather than deductive. The common lawyers did not begin by laying down a theory or a code or a principle, or continue by trying to squeeze new instances within the theory. On the contrary, they began by deciding each case in the best and fairest manner they knew how, and soon there grew up a great body of decided cases, and then the students and the academics began to perceive the graph which was outlined by these instances, and found that some clear principles were to be gathered from them. Thus the method was, not to fit recalcitrant but actual cases into some pre-tailored but unproven theory, but rather to allow the theory and principles to build up themselves from *proven* cases.

In the result therefore, as the common law has not, for many centuries, had to consider very deeply the law relating to dead bodies and parts thereof, or the law relating to the rights and duties of an individual in and with respect to his own living body and parts thereof, it is now difficult to see or apply any clear theory: it is difficult to forecast accurately just how the Courts will set about deciding the cases that may possibly arise. It is patently impossible for me to lay down any general rules, and I must do my best to indicate the legal background in the light of which the Courts may approach certain questions.

Professor Ewing was kind enough to indicate to me some of the questions in which he thought the medical profession would be interested. First, he asked, "When is a man technically dead?"

And so I have to deal with the question, knowing that the word "technically" means "in the legal sense": at what point is a man dead in the eyes of the law? The law, in its wisdom, answers this without the slightest difficulty by saying, "The time which the doctors in the particular case *say* was the time of his death", or "At that point of time at which the preponderance of credible medical testimony holds that he was dead". The Oxford Dictionary says death is "the final cessation of the *vital functions* of an animal or plant"; of course this poses the questions what are the "vital functions"? and what is "final cessation" of them? In other words, the occurrence of death is a fact, and must be found like any other fact; and, as the question is one upon which there exist acknowledged experts, the Court will admit opinion evidence of such experts. The Courts have not, and will not, lay down any rule as to when a man is dead: with certain

minor and irrelevant exceptions it will in each case be concerned to find at what point of time death came to (or life expired in) the particular man in question. In connexion with tissue homotransplantation the question is not likely to arise, and certainly not likely to arise in proceedings other than criminal proceedings of a serious kind, in which a jury will have to decide the question. "Was the deceased dead at 12 midnight at the end of the 30th June?" is a question not unlikely to arise under frequently-altered death duty legislation, and it has arisen once already in Victoria to my own knowledge in a case where even 60 minutes was critical to the legal questions which arose. It may sometimes be no easier than the question "Was X drunk at the time of the accident; was X insane at the time of such and such an event?"

I now wish to deal with certain aspects of the law relating to tissue homotransplantation *after death* of the person whom I shall call the donor, but by donor I do not mean to imply necessarily any ante mortem consent by him. The first matter to observe is that a coroner has a duty to perform an inquest *super visum corporis* whenever he believes, on reasonable grounds, that a person died from other than old age or common illness, and indeed, has a duty to conduct an inquest *super visum corporis* in many other circumstances. Quite apart from statute, it is a serious offence at common law, punishable by imprisonment, to mutilate a dead body in such a way, or otherwise deal with it in such a way, as is likely to prevent or prejudice coronial or police enquiry, at least where the actor knows at the time that death may possibly have resulted from a cause likely to lead to any coronial or police enquiry. Indeed, Sir James Stephen went further, I think, and said such knowledge in the actor was irrelevant in the case of coronial inquest.

Therefore, as I think you all know, the intending tissue homotransplanter ought to be sure that he has the consent of the coroner in any case where the circumstances suggest that a coronial or other similar official enquiry is at all likely.

I next wish to look at the rights and duties quite apart from the prospect of coronial or police enquiry. What other consents are necessary? It is here that we get into very deep and murky waters because (with one notable exception) the law has never had to deal in detail with rights and duties of persons in relation to particular organs of the bodies of dead humans. The exception is, of course, the case of anatomy schools and dissection, which I shall touch upon later. It is a settled principle of the common

law that a dead body is *res nullius,* the property of no person at all. Blackstone in his *Commentaries* says, "Though the heir has a property in the monuments and escutcheons of his ancestors, yet he has none in their bodies or ashes; nor can he bring any civil action against such as indecently at least, if not impiously, violate and disturb their remains, when dead and buried".

There can be no *property* in a corpse. Blackstone adds, "Stealing the corpse itself, which has no owner, though a matter of great indecency, is no felony". Hawkins, *Pleas Of The Crown,* 148 (n.8), goes further, and says "There can be no property in the human body, *either living or dead*", but I wish to deal with the *living* body later.

It would seem to me to follow that there can be no enforceable right to *possession* of a corpse, though there is at least one exception to this rider upon the rule. There was in the High Court in about the year 1906, an interesting case with which some of you may be familiar. It was the case of *Doodeward* v. *Spence,* (1908) 6 C.L.R. 406. In that case, a Maori lady in New Zealand had been delivered of a still-born monster with two heads, and the doctor attending her had placed this into a bottle of spirits and kept it. Some 30 years later, the doctor died, and his executors sold this tragic and horrid specimen for some £30 or £40, which, in the latter part of the 19th century, was no mean sum. Mr. Doodeward got hold of it. He ran a sideshow, and he used to show off this specimen in the bottle for reward. This was regarded as highly indecent and a common law offence, and he was duly charged. While the police were investigating the charge, they confiscated the bottle of spirits containing the body of the monster, and they eventually returned to Doodeward the bottle of spirits but not the monster, whereupon Doodeward immediately sued the police inspector for recovery of it. I regret to say there was a difference of opinion amongst the three High Court judges who heard the case. The majority of the Court took the view that although it was true there was no property in a dead body, none the less if one expended any labour or skill upon the body to make it into essentially something different from what it had been before—something different from a mere dead body—then there was a right of property in it, and they felt constrained to find this, because they said that it must be true that an archaeologist has property in an Egyptian mummy that he discovers, and so on; and surgeons must acquire property in something taken from some person's inside which they keep, for curiosity, to

lecture upon, and so on. They said in this case some work and skill had been employed, and therefore Mr. Doodeward was entitled to recover. Higgins, J. dissented. He said there can be no property in a human body, and in that in which there is no property there can be no right of possession, and he would have dismissed Mr. Doodeward's appeal.

At the root of the common law doctrine that no-one could own a corpse was the imperative need for speedy burial. Those natives of remote places in Africa and of certain Pacific islands who are in the habit of placing and keeping their deceased ancestors in the parlour suffer terrible diseases in consequence, and it must further be remembered that the Common Law grew up in a Christian society and not a pagan one. Accordingly, there was one exception to, or rider upon, the rule of the common law, namely, that the person upon whom the law placed a duty to bury the corpse (e.g. the executor of a deceased adult and the parent of a deceased child) had a right against all the world (except the coroner or a like authority) to keep possession *for the purpose of expeditious and Christian burial.* Further, the person charged with the duty of burial had a right to *obtain or regain* possession *for this purpose.* This is still the law, and it extends no doubt (in the absence of, and second to, the right of the executor or parent) to any person who has at the death a lawfully-obtained physical possession of the corpse. Further, the criminal law itself held quite firmly that he commits a very serious misdemeanour who—

(i) prevents the due burial of a dead body;
(ii) neglects to bury a dead body which he is legally bound to bury (provided he has the small financial resources necessary);
(iii) disinters a buried body without express lawful authority.

Wtih the growth of religious toleration, "Christian burial" came to mean merely "decent burial", and of course cremation is now authorised by statute in specified circumstances. To "prevent" the due burial came to include *delay* and *obstruction* of such burial.

And so, although there is grave doubt upon the matter, it seems the better view that the anatomists, the dissectors, technically committed before 1832 an offence against the common law whenever they dissected a dead body outside the authority of the royal charters given to the Company of Barbers And Surgeons,

and after 1832 if they conducted anatomy outside the charters and outside the Anatomy Acts. Not only did they delay burial, but the concept of decent burial, up until the 20th century at least, would have necessarily included, I think, burial in an undissected condition. But it is also plain that for many years prior to 1832 those who administered the common law were prepared to wink at these technical offences in the interests of science and humanity.

In 1832 came the Anatomy Act, the provisions of which are now to be found substantially reproduced in the Victorian Medical Acts—see *Medical Act 1958,* Sections 26 to 44. The present section 40, relating to corneal grafts, was first enacted in 1959. But I have not the time tonight to deal in detail with those provisions.

Although, therefore, there is no property in a corpse, and no crime of larceny for stealing one, and no civil rights for conversion of a corpse, or wilful damage to a corpse, or the like, and though there is as a general rule no right in anyone to the *possession* of a corpse, the law still is that the person in whom the common law places the duty of decent burial has what lawyers call a "locus standi" to compel delivery up of the corpse for decent burial. Thus an executor of a deceased adult or the parent of a deceased child has the right to call upon the hospital authorities to deliver up the body for burial. In the absence of executorship, I think the Courts would be likely to hold that the spouse of a deceased married adult, and in default possibly other near relatives of an unmarried deceased adult, have a similar locus standi.

There seem to me to be only three ways in which the tissue homotransplanter, operating post mortem, and without any permission other than the coroner's, might come into collision with the principles so far discussed. It is just conceivable that he may delay the burial unduly, but I think that prospect may be dismissed, because I understand that speed is of the essence of the transaction of transplantation. If the transplanter removed half a square inch of skin tissue from the ball of the thumb, I do not think that this would be held to interfere with decent burial. But if he removes the eyes and/or a kidney and the spleen and the liver, that might well be held to prevent decent burial, and that is the first possible way in which the surgeon might collide with the Common Law. Secondly, it is just conceivable that the doctrine of the Common Law might be applied

that what is plainly injurious to the public welfare is illegal. It may be argued that the chopping up of a body without the consent of the executor or spouse or close relative is injurious to the public welfare, and if this were so not only would there be an offence at common law but the spouse who proved nervous shock or other illness as a direct consequence might conceivably recover damages. Lastly, if the surgeon is not authorized to practice anatomy, or if the formalities of the Anatomy Act are not complied with, it could be argued that the removal of the tissue was an unlawful dissection of the corpse. In addition, analogous implications might be made from Section 40 of the Medical Act (corneal grafts). I mention these as theoretical *possibilities* only. For myself, I think it rather unlikely that the removal from a corpse of, e.g., a kidney without the permission of anyone other than the coroner, would make the surgeon liable either to criminal or civil action. It goes without saying that I would strongly advise against any such course where the executor, and spouse or close relative, exist, first because it would involve some slight risk upon the lines I have mentioned and secondly because there might well be public outcry followed possibly by restrictive legislation.

And so I would answer the next group of questions as follows—

1. From whom should the Surgeon get permissions to remove tissue from a dead body?
   Answer—The coroner's permission is necessary in all cases where an inquest is at all likely; and the permission of the spouse if any, or else parent, should also be obtained.
2. Is it *essential* to get *any* permissions?
   Answer—Apart from the coroner's permission, the answer is probably no, but there are available substantial bases for arguments that this view is wrong: hence the answer to question 1.
3. What happens if the surgeon refrains from getting the permission of anyone except the coroner?
   Answer—Probably nothing except public outcry, bringing the medical profession into disrepute, and possibly also restrictive legislation. But it is suggested that the professions continue to obtain the permissions indicated above.

I turn at last to the transplantation of tissue from a *living* donor, and reiterate that I am speaking deliberately without

regard to any religious or moral considerations except in so far as they might invoke the common law or the statute law.

As I have said, it is laid down in Hawkin's *Pleas of The Crown* and in other works of high authority that there can be no property in a human body *either living or dead.* As far as I have been able to ascertain, there is no reported decision to the contrary. The law has given little or no attention to small *parts* of a human body. One can imagine borderline cases, such as a lock of hair, or a whole head of hair, or the bottled appendix, originally a part of my own body, which Sir William Upjohn or one of his assistants gave me (or was it mine all the time?) as a souvenir 30 years ago, and which I kept for a short time as a grisly exhibit.

Again one cannot give a concluded opinion, but the law so far declared indicates that, before a portion of the body can become the subject of property, it must undergo some change as the result of labour or skill which it exhibits. A woman's hair made into a wig, for example, an Egyptian mummy, perhaps a dried head from Borneo, can, I think, be the subject of property. But one's own working internal organs are not, I think, the subject of property at all. Nevertheless, if the tissue transplanter wishes to transplant from a living donor, there is no doubt that he should obtain the consent of the donor. If he does not do so he may be guilty of assault or of maim or of a number of offences punishable by imprisonment: he will be liable civilly at the suit of the donor as well as liable criminally.

The permission of the donor, however, does not by any means end the matter. It constitutes the crime of *maim* to inflict bodily harm whereby a man is deprived of the use of any member of his body, or of any sense, which he can use in fighting, or by the loss of which he is permanently weakened. It is stated in *Stephen's Digest of the Criminal Law* and in other texts that no person has the right to consent to the infliction upon himself of bodily harm amounting to a maim "for any purpose injurious to the public". Stephen added the quoted words because, he said, it is absurd to say that if A gets his dentist to pull out a front tooth solely because it looks unsightly, though not diseased, A and the dentist commit a misdemeanour. Later editions of Stephen have omitted this reasoning. I cannot hope to deal tonight with the extraordinarily difficult problems that here arise, though I refer the interested person to the authorities discussed in Articles in Vol. 2, No. 1 (May 1959) of *Melbourne*

University Law Review page 77, and Vol. 2, No. 3 (May 1960) page 397. It will suffice to say that the surgeon, before taking any organ from a living donor's body to give to another person's body, should not merely obtain the consent of the donor but should consider very seriously two questions—

1. What is the likelihood of death or permanent grave physical disability to the donor?
2. Is this transference necessary in order to save the life of the donee?

I think myself that a surgeon who removed a healthy eye or some vital portion thereof from a living patient would be technically guilty of a misdemeanour punishable by imprisonment, notwithstanding the consent of the donor. But the law and those who administer it are likely to do what Barton, J. referred to in *Doodeward's Case,* i.e., to "wink" at technical breaches of the law in cases where the object is saving the life or sight of another person. If, as I believe, it is becoming common to remove healthy organs from living donors, the time has come for comprehensive legislation dealing with the matter. The difficulty is, of course, the strong religious and moral scruples of many sincere people in the community, and the profession must decide when the time is opportune to press for legislation.

In the absence of legislation, I can only say that it is an offence to maim a person, that a person can consent to any bodily harm upon himself provided that it is neither a maim nor an injury likely to cause death, that a person has a right to consent to any surgical operation upon himself provided that it is not an *unnecessary maim,* and suggest that an unnecessary maim is one which is not necessary to the health of the donor himself.

To amputate a gangrenous leg is legitimate with consent, and in many cases without consent. To amputate a healthy leg is a misdemeanour with or without consent. To remove a healthy kidney without consent is a civil and criminal wrong. To remove a healthy kidney with consent is technically a criminal wrong only if it so generally and permanently weakens the donor that he is transformed from a person capable of fighting in the armed services into one who is not so capable. In any case of homotransplantation, with the consent of the donor and to save the life of the donee, it is most unlikely that the Crown authorities would ever seek to set the law in motion, and certain that the Courts would lean very hard against holding that any offence had been comitted.

To sum up the views which I have put forward on transplantation from a living body, I would say that provided the consent of the donor is obtained, assuming it to be an adult, it is most unlikely that the law would hold that any offence had been committed by the removal of an organ from that donor. Of course, if the time ever comes, as well it may, that the medical profession feel that legislation ought to deal with this, then they are, no doubt, aware that in the political sphere they may (as I have said) come into collision with moral views and religious views held by numbers of sincere people in the community. It is on any view a serious thing to take an organ from a healthy human body and leave that body thus impaired, and the profession should think carefully before moving for legislation in this field. The time has come, from the lawyers' point of view, however, when it would be a good thing to have the questions made clear by litigation, rather, I mean, legislation. (That was what might be called a pardonable error.) However, in the absence of legislation, it is thought that the only likely collision between the surgeon and the law would be on the ground of some offence such as maiming, and this is again more a theoretical than a practical likelihood. There is a decision in England in a case of *Bravery* v. *Bravery* in 1954, in which a number of these questions were canvassed by one of the Lords Justice of the Court of Appeal, but the majority of the Court held that all the matters with which that Lord Justice dealt were entirely irrelevant to the decision, that they had not been argued, and that it was quite unsafe to place any reliance on them whatsoever. Having regard to that, I do not think I should speak to you here about what his Lordship said, but the matter is there in the Law Reports to be read. Lastly, lest it be thought that I am painting an unhappy and dangerous picture of the position of a surgeon, let me hasten to add that to perform surgical operations for the saving of life, with the reasonable expectation of saving life, or for the purpose of attempting to save life, is always legitimate. The medical profession and the legal profession have certain ethics which govern their behaviour, and, as I understand it, no surgeon would think of removing a healthy leg of a patient merely for the amusement and practice which it might give him, just as no lawyer would think of advising a client to engage in litigation which was entirely profitless to the client. It is thought, therefore, that these problems, interesting though they are, are very unlikely

to arise in practice. Professor Ewing spoke of a healthy kidney that could reasonably be spared by another person. If it ever became necessary for a lawyer to say whether an offence had been committed by the removal of a kidney, it is thought that the decisive question in the eyes of the law would not be whether it could reasonably be spared by the other person, except in the sense of whether the removal made certain or likely the early death of the "donor" when such death was not certain or likely before, and on reflection I think this is what the Professor had in mind.

The last matter to which I wish to refer is the content of the sections of the Medical Act to which I have referred. They are Sections 26 to 44. Sections 26 to 39 are concerned with authorising anatomy schools and students to dissect dead bodies. Section 40 is concerned to provide for the removal of eye corneas from deceased donors into the bodies of donees, and the interesting thing about these provisions is that they provide that, for example, it shall be lawful for a medical practitioner, if permitted or directed so to do by a person who has lawful possession of a body, to permit the body to be anatomically examined or to anatomically examine it. The actual wording seems to presuppose that if it were examined anatomically by an unauthorised person, then this would be unlawful, and yet the preamble—that is, the long title, as it were, to the original English Statute—was clearly drawn upon the footing that what the medical profession were doing was quite lawful, because they were entitled to an Act, the purpose of which was to increase the lawful supply of bodies for the anatomists. One is left in considerable doubt, however, having regard to the phraseology of the present Medical Act, whether two unlicensed lawyers who were interested in dissecting human bodies would be committing an offence if they decided to dissect human bodies. One would have thought that they would be committing some offence under the Common Law, but it is very difficult to say that they would be committing any offence under the Anatomy Act. Section 40 is important because it provides that where a person has, during his life, authorized in writing the giving of the part of his eye after he is dead, then the executor or other person having possession of the body shall see that this is given over, unless some relative or the executor objects. If the deceased has not given such an authority in writing during his lifetime, then still the executor or other person having possession of the body *may* offer this part of the

eye, providing no one objects. The significance of this, it is suggested, is that the legislation appears to proceed upon the basis that there might be something illegal in doing that if it were not for this legislation, and, therefore, it is submitted, it suggests a warning to medical men, when they embark upon removing whole organs from living bodies, to obtain such consents as the surrounding circumstances reasonably allow.

Discussion

MR. R. FOWLER: Mr. Chairman and gentlemen, I am fully aware of the lateness of the hour. I have a lot of my comments transposed into the form of questions which inevitably must, I think, be directed at Mr. Fullagar. I believe Professor Ewing, in his inimitable style, has covered the main ground from the point of view of the medical profession, and from the point of view of biological problems. I think we have passed beyond the stage when people can fairly ask the question, "Is it reasonable to attempt to transplant kidneys?" I think it is both reasonable to attempt it and reasonable not to attempt it, if one feels so inclined. Professor Ewing also posed the problem, quite clearly, that the choice of donor is one of the most practical problems we have to face, and this boils down, in the simplest terms, to a living donor or a dead donor. From a little bit of practical experience, I can say that, observing all the criteria which Mr. Fullagar enunciated, that if one does seek the permission of the Coroner and the permission of the relatives, and if one uses the common or garden definition of when some one is dead —the cessation of life signs—that few problems arise. Problems do arise, but I do not think time permits me to go into them. Mr. Fullagar did discuss the legal question solely in terms of the law of property in a dead body, but one problem which has concerned us is whether, if circumstances were such that one sought to act without the permission of the relatives, one would be open to a law suit on other grounds, other than the question of common law of property. One is familiar with cases in the Courts where a suit is brought for mental ill-health and distress and suffering, and substantial sums have been awarded on this ground. One wonders whether it really comes down to a matter of good public relations, and whether to attempt to do this other than with the consent of the next of kin will ever be appropriate. I would like to hear his comment on that, and remind him in the corridors of most public hospitals there is a notice in very

fine print, one suspects so fine that the relatives cannot read it, that anybody seeking admission to such a hospital does so with the foreknowledge that the body may be used for anatomical purposes. Turning to the far more vexing question, the use of a voluntary donor, again Mr. Fullagar has discussed the legal issues solely in the context of the specific crime of maiming, and I wonder whether, with regard to his allusions to the evolution of this, in terms of the fighting man, the law has any cognisance of the existence of a fighting woman analogous to its disregard of a reasonable woman in the presence of a reasonable man.

Stretching the legal argument or the legal question a little bit further, I wonder whether the common law as to assault must apply even more than the question of the specific crime of maiming. Taking this to another context, other medical men in this city have been very cautious, over a number of years, concerning sterilisation, where the consent of the man or woman has not been taken to be sufficient grounds for performing sterilisation, and the medical profession has almost developed a history about this, so that even with physical or mental reasons for performing the sterilisation, and quite apart from any religious or moral grounds, they have hesitated to do so, because of the fear of legal consequences. I would like to hear some elaboration on the question of whether to perform any operation of this sort is an assault and is a felony, quite apart from the specific crime of maiming. In one unconscious slip Mr. Fullagar made, about litigation rather than legislation, he may have come closer to the mark than he realized, because there is one common example where people have apparently condoned this technique of assault in using parents or next of kin for skin grafting in burn cases. In England, I believe, there was a case where litigation involved a third party. A girl had given skin to a younger brother who had suffered burns from negligence on the part of some industrial concern and the industrial concern, when sued for the recovery of the medical expenses of the sister, denied liability on the ground that the sister had engaged in an act which was not strictly within the law. I would like to hear some elaboration on this point.

MR. JUSTICE SMITHERS: The sentences which caught my eye were something to do with the unpredictable time of death, and it reminded me of a case I tried in New Guinea of a leper who was in a very advanced stage of leprosy, and was fairly old, and was likely to die fairly soon, but, of course, the precise time of

death, no matter how Mr. Fullagar would have defined it, was unpredictable. It was essential that something be done at the precise moment of death, because the people of the village were quite certain that unless at the time of death this gentleman were covered with something called "tree oil", and the appropriate words were said by the sorcerer, that the spirit of this leprosy would go out to one of the others of the next of kin, and so the next of kin were a bit concerned about this, because, although not predictable, death was fairly imminent. There was another complication because the sorcerer was, naturally, like any medical practitioner, a very busy man, and you could not keep him hanging around. So the next of kin went to a gentleman of another clan, and they said to him, "Well, you can see what our problem is. After all, it is a bit unpleasant for us to bump off one of our own clan, but it is necessary that all the steps be taken, and could you make that which is unpredictable certain in time?" He said that he had no animus against the gentleman with the leprosy, but in view of the exigencies of the situation, he was willing to oblige. So there was a coincidence of the appearance of the sorcerer and the appearance of the obliging gentleman from the other clan, and the leper was duly bumped off, the "tree oil" was applied, the "abracadabras" said, the gentleman was dumped in the river, and all was well, and I sincerely hoped that the next of kin were not to be troubled, because one of them happened to be a young man of 18 years of age. He was the finest native whom, I think, anyone had ever seen, and he had lived in the same hut with the gentleman with leprosy ever since he had been a child.

The other case was one of interfering with a dead body, and the Administration of New Guinea was outraged by this particular thing. Up there, if somebody dies and you do not know why, foul play, of course, is suspected. A gentleman died, and he was hoisted up on a couple of poles, and it was the duty of everybody in the village to go past this man, and as they went past, it was their duty to gaze on the dead body, and if, at the time of their gazing, the dead body did anything unpleasant, that was clear proof that the person who was doing the gazing was the guilty party. The only way for the person to get over his difficulty was to eat portion of the body, and then, if after about ten days he survived and all was well, that was regarded as some proof of his innocence. In this case, two young men had gazed at the body and it had behaved unpleasantly, and they

would have been destroyed if they had not agreed to undergo this test of eating portion of the dead body and seeing how they got on. At this stage, the patrol officer came along and said that, according to the Queensland Criminal Code, this was an indecent interference with the body. I had the unpleasant duty of hearing this case, and I had considerable doubts about whether it was particularly indecent in the circumstances, having regard to everybody's history and so on, but I was able to find for the defendants on the ground that it was not proved that they were not acting under duress, because there were a large number of gentlemen round about who were ready with their bows and arrows if they had not bona fide eaten portion of the body.

THE CHAIRMAN: Gentlemen, we have present tonight, the President of the British Association of Plastic Surgeons and, at least, where the skin is concerned, I am instructed, the members of that Association rush around homografting or homotransplanting practically every day. It may be that there are some matters that came out of the discussion which particularly concerned members of that Association and its President, Mr. Rank.

MR. B. K. RANK: Mr. Chairman, I rise only to make two comments on these papers. The first one is a fundamental one. It is in relation to this question of death. I think we know now that death is not an instantaneous process. It is something that takes a long time and the law is quite out in that regard. As you know, in the American way of death, you at least have one or two shaves after death if you are to be decently buried. That is a fact. You grow a midnight shadow. The death of tissue is a very slow process that goes on for a long time and, despite all that has been said tonight, when Professor Ewing wants a kidney he does not want a dead kidney. He wants a live one. He does not want a decomposing one. We can graft skin and that applies to organs too, no doubt, long after. In other words, the person is not dead. That is why we want the graft, and that is why we do the graft. Cellular death of tissue comes long after the heart has stopped beating. The other thing that has occurred to me, as Professor Ewing has indicated, from his excellent description of the homologous problem, is that medical science is not static, and we run into problems on this thing because the legal principles which govern us and control our actions are lagging behind. It is not that medicine is slowly progressing. It is undergoing violent changes of attitude, and it is faced with

legal arrangements which do not match up to that. It is true that changes do come. We know, when organ grafting becomes an accomplished clinical fact, that legislation will be introduced. The important thing is, what should be the timing? Is it apt, at this moment, to introduce changes of legislation in regard to organ transplantation. It is my own view, and I suppose, being a little slow and conservative and somewhat cynical, that this is still very much the province of the research worker and the experimental surgeon, and I think we are raising bogies and troubles if we push for changes in legislation to give us powers which we have by just taking them. I offer my advice to Professor Ewing, with his problem, for what it is worth, to go on and do kidney transplantations, and do not take any notice of the law. When it is all said and done, by the very nature of their calling, the lawyers are only right about 50 per cent of the time. It is no good examining the verbiage of legislation which was designed to govern one thing, and try to relate it to something which it was never invented to govern. It is not the verbiage. It is the purpose behind the legislation.

Legislation set up was not set up to govern homotransplantation. This field is one in which development of techniques has taken a long time. I think we should leave it there and get on with it.

MR. P. BALMFORD: Those of us who are students of not medicine but of the law and science-fiction, have been familiar for a good many years with the kind of stories that have been written, of what might be done one day. I do not recall the legislative or parliamentary discussions which took place in relation to the Corneal Grafting Act which now, I think, is about 8 or 9 years old, but it does seem to me quite remarkable that Parliament got around to dealing with that particular question as long ago as that. Practising as a solicitor in the interval, I do recall one occasion where somebody has actually come into the office wanting to do something in pursuance to the provisions of that Act. Before Christmas, I had a young man and woman about to get married who came in to see me. The young man was a University student who had heard that there was some provision that enabled this to be done, and his fiancee said that she did not like the idea of that very much. In the end, he put it in his Will but she did not put it in hers. The other comment I wish to make is, in relation to the time of death, or if death does take place at all. It has not been mentioned tonight, although many

of us may have read in the newspapers the other day of the putting into a deep freeze of somebody who has died, or is about to die, or thought likely to die, in the hope that that process will preserve them from further deterioration until such time as the medical profession is able to produce a cure for their disease. This apparently is a young but important industry in America. It, of course, has been familiar to us who read science-fiction, for a long time. The other question I would like to ask Professor Ewing is whether he would care to make any comment as to how far it might be possible to go, putting the science-fiction on one side?

MR. E. E. DUNLOP: The only point of my speaking at all tonight on the subject of the dead is, I have found the Act remarkably restrictive really. It is all very well to say, "You must obtain the consent of the Coroner", but if you want a spare part within four hours of death, the type of person who is a suitable donor usually means a young person under forty who has been killed in a road accident, and not someone who has died of certain diseases, and it takes a nervy man to ring the Coroner up at a certain hour of the night to ask him about this matter. In fact, the first time it came to my notice was in 1950, when a man had had his thigh crushed on the docks and needed an arterial graft from a suitable donor. We went ahead and did the graft, and for very many years afterwards, I think, the Melbourne Hospital just went on doing this. I would agree with Mr. Rank that the Act, following 16 years after Waterloo, was enacted for Victorian purposes, and I think it is high time we brought all these things out in the open, like we are doing tonight, and really thrashed them out, and replaced the provisions with suitable Acts.

MR. P. JONES: Mr. Chairman, I would like to make some mention of a point raised by Professor Ewing as to the determination of the exact time of death. This is something that has involved me, in my pursuit of cardiac surgery, and it has been pretty well established that neither the disappearance of heart beat nor the cessation of respiration means necessarily the death of the patient. There are well-documented cases, as well as my own experience, in which recovery after such facts is perfectly feasible and may be complete. I would agree with Mr. Fullagar that the determination of the presence of cortical brain waves by the use of electro-encephalograms is the logical method to be

used, but as these machines cost somewhere between £3,000 and £6,000, and I am reliably informed that there are less than 4 in the State of Victoria, and all of them are in Melbourne, it is hardly a feasible resort. Perhaps my chief purpose in rising is that I would like to join with Mr. Rank in saying that the medical profession yields to no one and no other profession in their ability to cloud an issue.

MR. S. E. K. HULME: I am interested not so much in when death has taken place, but whether it has taken place. One problem that gives rise to this was mentioned by Mr. Balmford, the man who is put in the deep freeze. It is not just a question of that man. You may have a will or settlement which says that the income shall go to that person as a life tenant for life, and it shall then go to somebody else. Let us say a man in this year either is an adventurer, willing to take part in a scientific experiment, or knows that he is going to die fairly soon and hopes that medical research will advance in 100 years to find his cure, and says, "Put me in a deep freeze at the Royal Melbourne Hospital for 100 years", and he is put in a deep freeze at the hospital for 100 years. The question arises, is he dead? Should you distribute the money to the people next entitled, and, if so, when do you distribute it, when you put him in the deep freeze, or when you think he would have died from his illness, or when he would have died in the normal course of age, or do you wait for 100 years?

The other problem, more directly connected with tonight's problem, is: Let us say you get a man who has a bad kidney, and you say, "This man would die in a few weeks", and the relatives say, "All there remains is the course of waiting for the life tenant to die and we will take the asset". The doctors say, "Look, we have got here a kidney, and we will put it into you, and we will keep you for 30 years", and he says, "Well, that sounds fine to me", and everybody is fine except the relatives, who say, "This fellow should die next May". The question raised is, is the man living after next May with his kidney, which was not the kidney he had earlier, the same man? True it is, if you transplant a piece of skin on a toe or a kidney, you can say, "Of course it is", but when you get to transplanting a heart or a head, is this the same person? I was hoping, in view of his experiences with this kind of case, both at the Bar table and in New Guinea, what we might have heard Mr. Justice Smithers on this. We are, perhaps, too late to do so, but maybe Mr. Fullagar will have some way of

saying how far this transplantation will have to go before you say, "This is not the man that the testator was talking about. He is now a different person."

MR. R. K. FULLAGAR, Q.C.: In answer to Mr. Fowler, I would say that the case put forward by him of the fighting woman demonstrates the high probability that the law would not apply the old common law relating to maiming in the cases to which I referred. If the surgeon operated on a deceased body without permission, it is possible in certain additional circumstances that he could be successfully sued for inflicting suffering, although I am inclined to the view that the action would in most cases fail. On the other hand, it is quite unsafe for the medical profession to assume that sterilization, when not necessary for health or saving life, is legal. There is a great deal to be said for the view that it is illegal. It has never been decided, and I would not advise any one here to set himself up as the person to get it decided. Mr. Hulme's question will get the answer it deserves at a later date, in another place. But his question raises the possibility that we will yet see repeated what is said to have occurred on circuit in Ireland, where the judge, having said after a very long dispute over a Will, "The meaning of the Will is perfectly clear. On its proper construction, it means so and so". There was a shout from the back of the Court, "Begorrah, that's just what it doesn't mean". When the judge asked, "Who the devil are you, Sir?", the voice replied, "The testator, Your Honour."

PROFESSOR M. EWING: I am really not at all sure, sir, whether any questions were, in fact, addressed to me. We seem to have travelled a little way from the pure question of homotransplantation into very much more interesting considerations about when an individual ceases to be an individual when he has borrowed other components from other people, and the philosophical arguments, and the varieties, the complexities of this issue obviously provide a unique opportunity for those who are interested in science fiction. The one point which really does vex me a little but, out of all the contributions from the whole, is the one that touches me most closely, and that, of course, is the one that came from Geoffrey Newman-Morris. I wonder whether I existed as a graft in the sense a corneal graft does? A corneal graft does not, in fact, become incorporated in the host at all, and does not agitate the immune mechanism. In other words, did I, in fact, exist as a corneal graft and enjoy the facility of a new home

without having to pay a subscription, or did I come into the other category? I think it would be much better, as Mr. Rank suggested in relation to the whole general issue of legislation, to leave matters as they are.

THE CHAIRMAN: Gentlemen, before drawing this evening's proceedings to a close and asking you to thank our speakers and calling you to supper, I move to say something in response to what Mr. Rank said. Professor Ewing said surgeons were optimistic. There are some other adjectives that certain people describe them by, from time to time. I remember one very senior member of the medical profession, in this State, saying they ought to pray nightly for humility. The thing that occurs to me, however, is this, that if you have a large hospital, a sort of surgical factory, going on almost 24 hours a day, and one section of that hospital is interested in homotransplantation, and other people in that hospital are engaged in auto-transplantation and perhaps other kinds of surgery, is it not almost inevitable, considering human nature, they will be pinching little bits here and there, for one purpose, to be used in another. If Mr. Rank's plea to use common sense and to get on with the job means to pursue that activity, I am reminded of the sign of the three draftsmen that used to be on a table at the State Rivers and Water Supply Commission in about 1937. One of them said, "Why worry, it may never happen." The second said, "Who can check us?" The third said, "Even the gods fight in vain against stupidity." Perhaps this is where the matter lies at this stage. I ask you to thank our speakers in the usual way, and proceed to supper.

THE ETHICS OF ADVERTISING

By Mr. E. C. McHugh

and

Professor R. R. H. Lovell

Professor of Medicine, University of Melbourne

Delivered at a meeting of the Medico-Legal Society held on Saturday, 15th May, 1965, at 8.30 p.m., at the British Medical Association Hall, 426 Albert Street, East Melbourne.

Mr. McHugh:

I am told, when a discourse is presented to a learned Society, the qualities which the audience looks for are brevity and completeness, and I think I can, with all due modesty, claim a record in both departments.

Gentlemen: The ethics of the medical and legal professions forbid advertising.

Now that my lecture is finished and there is a little time still left if any of the audience cares to remain behind, I will undertake to fill in the time as best I may by making some random remarks about ethics and some random remarks about advertising. In order to encourage you to remain behind, I should say at once I do not propose to make any effort to define ethics. As far as I am concerned, ethics is somehow concerned with what people are supposed to do, and with what they are not supposed to do—beyond that, I am in the dark.

A definition of advertising is not so difficult because it has already been done. It was done, once and for all, in 1942, by no less an authority than Neil H. Borden, the Professor of Advertising at Harvard University. Professor Borden thus defines the subject:

> "Advertising includes those activities by which visual or oral messages are addressed to the public for the purpose of informing them about or influencing them to buy either merchandise or services or to act or be inclined favourably towards ideas, institutions or persons featured. As contrasted with publicity or other forms of propaganda, advertising messages are identified with the advertiser either by signature or by oral statement. In further contrast to publicity, advertising is a

commercial transaction involving paid publishers or broadcasters or others whose media are employed."

If you leave out the references to broadcasting and the reference to payment it turns out, when you look at it, that advertising, as thus defined, is nothing new. There is no period in history in which it has not gone on. Whenever the historian finds anything that can be even remotely described as a civilization, there he also finds advertising. Advertisements have been discovered on papyri from Egypt, on sun-baked bricks from Babylon; and examination of the ruins of Pompeii reveals that, even on those rather overcrowded walls, space was found by an enterprising apothecary to call attention to his pills.

History also shows that as each new means of communication was invented, it was promptly used for advertising. One of the first productions of William Caxton's press was a poster advertising copies of his printed books, a poster which is apparently still in existence. What Caxton advertised was "copies". Since the medieval script was somewhat obscure, and the two syllables of the word "copies" were divided into two words, generations of earnest students of advertising have accepted it as revealed truth that one of the first things that Caxton ever printed on his press was an advertisement for pies.

By the 17th Century the practice of publishing printed periodicals had grown, and as soon as they were published in any number advertisements appeared in them. This was accompanied at the same time by a great increase in poster advertising. By the 18th century, advertising, both by means of poster and printed matter, had grown to such an extent as to be worthy of essays and discussions by Addison and by Dr. Johnson, the latter of whom made two remarks which are unsurpassed. He said, on one occasion, "In an advertisement, a man is allowed to speak well of himself." On another he said "Promise—large promise is the soul of advertisement."

There are several studies for those who are interested in the history of advertising, the most recent being that of Mr. E. S. Turner. Mr. Turner's study is a critical one, as might be gathered from the title, "The Shocking History of Advertising". It appears from Mr. Turner's book that most, if not all, of the present techniques of advertising were in use in the 17th and 18th centuries—comic illustrations, repetition, jingles and doggerel, and for patent remedies, pseudo-scientific language, hair dye

being atrapilatory, cough lozenges being pulmonic wafers, and so forth.

People who write about advertising, in any form, seem to be, for some reason, impressed with the fact that advertising is nothing new, and seem to think that in some way it gains respectability from antiquity. For my own part, I do not share their surprise. I see nothing surprising that anyone who has anything to sell should try to persuade as many people as possible to buy it, and for that purpose, to use any means of communication available, whether it be printed posters, message sticks or smoke signals. Nor do I see anything surprising in the fact that advertising from the earliest times to the present shows very little basic variation. After all, if you set out to persuade people to buy your product by means of advertising, there are only two ways of doing it. Firstly, you can print the name of your product on any empty space you can afford to buy or rent, and have its name repeated over and over again, until every citizen who is not deaf or blind or in confinement will be aware consciously or subconsciously of your product. Or else you can try to persuade people to buy it by telling them something about it. A great deal of advertising is of the latter variety, consisting now, of statements about something, usually accompanied by a picture. Since the statements are made by human beings, the chances are that a great many of the statements will be exaggerations, half-truths, or lies, and the chances are that a great many of the pictures will be ugly, vulgar or absurd. It is an easy enough matter to collect a number of the very worst examples of these and call the result, "The Shocking History of Advertising". I had thought of addressing the Society along these lines by presenting a collection of such examples, but it appeared to me, on reflection, that this was not a suitable form for a lecture on the ethics of advertising to doctors and lawyers. It would do nothing but point up the untruthfulness and vulgarity of people in general. This would be of no interest to us; because doctors and lawyers are never vulgar and never untruthful, and would not be, I am sure, interested in a dismal parade of the weaknesses and inadequacies of the rest of the population.

There is, however, one vital difference between the advertising of the past and that of the present. Advertising has now possessed itself of the techniques of mass production. It is aided by the phenomenon of mass literacy. The result is the present day phenomenon of massive expenditure on advertising. It is impor-

tant, perhaps, to keep this in perspective. In the year ended 31st December, 1963, if you leave out classified advertising—"Lost Dogs" and all the rest of it—one hundred and two million pounds was spent in Australia on advertising. Sixty-five of these millions consisted of national advertising, advertising that went in the same form from one end of the continent to the other. Of course, when you add up items of expenditure on a national basis, it is easy to get them out of perspective. One hundred and two million pounds is not such a large amount in this connection. I doubt if it would be very much greater than the amount spent on education in the corresponding period. However, in case anyone should share the unexpressed worry that seems to be in the minds of those who criticize advertising, that we have here a steady-growing malignant force, it is interesting to note—though the last thing I should wish to do would be to quote statistics—that the proportion of the national income spent on advertising in all the advanced industrialised countries remains, by and large, the same, about 2 per cent. It gets down to 1·5 per cent, and perhaps up to 3·5 per cent, and in America in 1920 it hit 4 per cent, but the figures show that it does not vary greatly. However, for all that, the amount of money spent on it is, in absolute terms, great.

This has inevitably called forth examination, and, equally inevitably, I suppose, called forth criticisms, on economic grounds, as well as others. On the economic aspect, I have not the inclination, or the ability to say a great deal. The thing that strikes me, looking at the controversy as a layman, is the curiously stereotyped ritual quality of the discussion. The arguments are the same; the rejoinders are the same. The examples follow each other with dreary monotony. In the economic controversies about advertising no one ever seems to have a new idea. The supporters of advertising say that advertising encourages the development of new products and improvement of existing products, by creating a market for them. The antagonists retort that in real life, novelties and improvements are not created fast enough for the advertisers, with the result that they are fabricated for the sole purpose of being advertised. Then, it is said in favour of advertising, that advertising stimulates economic progress because it creates needs of which people were not previously aware, and encourages them to stimulate the economy by satisfying those needs. This argument usually appears in the words of Mr. Winston Churchill (as he then was): "Advertising

heightens the consuming power of men; it creates wants for a better standard of living; it spurs individual exertion and greater production." On the other hand, the opposition says that there are more than enough real needs in the world without the advertisers inventing more.

Again, it is said, that advertising creates a mass market and thereby enables industry to have the advantage of what is called, "the economies of mass production". The reply is that even if this is so, it diverts too much into the community's resources to goods which can be advertised, and away from things which are needed but cannot be advertised, with the result, as we have it now, that there is no trouble about getting a car, but there are no decent roads to drive it on; there is no trouble about getting a refrigerator, but all the trouble in the world to get a house to put it in. Then it is said that advertising is a good thing for a free economy because it stimulates competition. The reply, on the other hand, is that a new product can only get on the market by enormous initial expenditure, and advertising is really an entrance fee to get into the competition deliberately made as high as possible so as to exclude competitors.

This latter is usually put in the form of a quotation from a judgment in the United States Supreme Court in an anti-trust suit, where it says:

> "Advertising is a powerful offensive and defensive weapon against new competition."

Sooner or later in the argument it is said that advertising claims to bring down the price of products and the invariable example is the steady drop in the price of soap when it commenced to be extensively advertised. This is answered by pointing to the example of branded aspirin products which cost a lot more than the ordinary unbranded article.

Then, it is said, advertising is a source of revenue and, therefore, helps in the maintenance of the free press. Once again, the reply is, "What sort of free press depends for its revenue on the goodwill of the Board of Directors of a few advertisers?" and so the arguments go on. But, they have an unreal air or so, it seems to me as a layman; and, I suspect, also as a layman, the reason for this is because discussion is essentially irrelevant. It is irrelevant for this reason—that advertising is and can be demonstrably effective. An unadvertised product which is suddenly advertised will (for the time being at least) increase its sales. This

has been proved over and over again. You make your product, so the story goes, it is doing all right, but you take it to an advertiser, he gives it a campaign and up go your sales. If you are advertising a shirt, the advertiser will show a photograph of a man wearing your shirt and he will say some nice things about your shirt—that of itself will be enough to stimulate the sales. But, if you are extremely lucky and you live in America, you take your advertisement to Mr. David Ogilvie of the firm of Ogilvie, Benson & Mather; a genius like Mr. Ogilvie will put a black eye-patch on the picture of the man wearing your shirt, and the result is "the sky is the limit".

Up to that stage, the argument is a pure matter of economics and not ethics. The point at which ethics enters our discussion is this. Advertising to some extent at least succeeds in what it sets out to do. There is no product or service the sales of which cannot be increased at least temporarily by large-scale advertising. This is the basic reason for the phenomenon of advertising as we know it. There is a further fact about advertising which gives its practitioners some kinship with the traditional professions. The basic reason why there is some analogy between the practice of advertising and the practice of the traditional professions (by the traditional professions, I mean medicine, law, the Army and the Church; I leave the latter out of this discussion for obvious reasons) is that it can be demonstrated that advertising is, generally speaking, effective. It can also be demonstrated that one advertisment can be more effective than another advertisment, notwithstanding the fact that the difference between the two advertisements is, so you might think, trivial. The method by which this can be demonstrated, and by which it is demonstrated, arises out of the mere technical process by which a newspaper or a magazine is printed.

We have all seen the advertisements which attach a coupon and invite the prospective customer to send along some money. By reason of the rotary printing process which prints alongside of each other two identical pages of the publication, it is possible to make slight changes in the form of the contents produced so that by doing this you may finish up with an issue of a magazine, 50 per cent of which contains an advertisement in one form, and 50 per cent containing the advertisment in another form. Of course, if you attach identifiable coupons to each advertisement and await the result, you will be able to test the effectiveness of your advertisement by the most conclusive stan-

dard imaginable—that is, by the readiness of the customer to put down his dollar. This is known as "the split run mail order". There are numerous examples, of which a few may be quoted.

In 1954, a gentleman called Conklin wrote a book called "Pay Day at the Races", and this was a book which professed to tell people how to pick winners. It might be thought that this was the better mousetrap which would bring the world to Mr. Conklin's door, but it was thought the world might be given a push in the direction by an advertisement—advertisements were devised and given the "split run" treatment. The difference in the two advertisements was in the headlines. One of the versions "pulled", as it is called, twice as much as the other. The first headline read, "The Secret of Picking Winners", and the second, and triumphantly successful one, which beat the other by nearly one hundred per cent read—"How those in the Know beat the Race Game". Of course, any advertising person, or any person at all for that matter, could pick the second version as the one most likely to succeed but the point is that this is a method by which his choice could be indisputably verified.

A further advantage of the split run technique is that it can be carried on to infinite lengths of refinement. A winning advertisement can be matched against a third advertisement, and so on, until there emerges the undisputed champion. Some agencies which are about to run a large campaign run a sample check of various advertisements by means of this split run method.

This was done by the advertising agency which was entrusted with the advertising of the Revised Standard Version of the Bible. Numerous contenders were tried . . . "The Bible Jesus would have Loved", "How this Bible can bring You closer to God", "A Bible for the Man who already has a Bible", and the champion which finally emerged was—"The Biggest Bible News in 364 Years". There are some, however, into which the unpredictable element of genius enters. This is something which could again have been predicted. The most famous of all was one which bears the imprint of the genius of Claude Hopkins (we shall hear more about him later) who was a towering figure in the history and mythology of American advertising.

Hopkins set out at the beginning of this century to produce, by means of the "split run" technique, the best possible slogan for Carters Little Liver Pills. After successive trials, the "split run" technique eventually put the seal of its approval upon the slogan, "Wake up your Liver Bile without Calomel", and on

that pinnacle Carters Little Liver Pills remained for 17 satisfactory years, until the Federal Trade Commission finally contrived to push them off it. Before he had reached that final version, however, Hopkins had tried no less than eight previous ones; after which the slogan was affectionately known to the trade as "Old number 9".

The fact that differences in advertising technique were able to be demonstrated, and the fact that they could in some hands be made so effective, led, naturally, to the calling of the advertising agent, of whom we shall now say something. The advertising agent is the gentleman who bears the same relation to Madison Avenue as the specialist section of the medical profession bears to Collins Street. The similarity ends there, the name of the latter thoroughfare being a source of honour, the former being a term of opprobrium taking over as a term of invective from Wall Street. It has been thought that the advertising agency was a peculiarly American institution, but that is not true. It is simply not true that the advertising agent was developed in America, and transported fully-grown to other countries, like jazz, indoor bowls and Coca-Cola. He developed roughly at the same time in the industrialized countries, and possibly a little earlier in England than in America; but when you talk of advertising agencies and their development, you tend to do so in terms of America, because the principal figures are so much more interesting and colourful. Whether they existed or not is another matter, and that I am not prepared to guarantee. It is said by some historians that there was no actual person called Helen of Troy, but that she was a symbolic expression of the historical fact that the ancient Phrygians were much given to abducting the Danaeian maidens. For all I know, there may never have been a Commodore J. Walter Thompson or an Albert Lasker or a Claude Hopkins, but, having read about them, all I can say is that if they did not exist, it was a splendid idea to have invented them.

It is generally agreed that the first advertising agency was established in America in 1841, when Mr. Volney B. Palmer opened an office in Philadelphia. Mr. Palmer was not an advertising agent in the modern sense of the term. He was an agent in the strict legal sense for newspapers who had advertising space to sell. He found buyers for this space, much as a real estate agent finds purchasers for real estate. For finding such purchasers, he charged the newspapers 25 per cent of the takings. Newspapers

who wanted to sell space found their customers at Mr. Palmer's. Advertisers who wanted to buy space addressed themselves likewise to Mr. Palmer. In due course, Mr. Palmer acquired a flourishing business, and numerous competitors. This was the form in which the business of advertising agents was carried on until about 1870. It will be noted that even at this time the organisation was beginning to take on the tri-partite character of the sophisticated professions. In the medical profession, we have the patient, the general practitioner and the specialist. The legal profession has the client, the solicitor and the barrister. Advertising has developed the advertiser, the agent and the media. If I may digress here, it is interesting to note that with such a triangular arrangement of the professions, different arrangements are available for reimbursement. I understand that in the medical profession, payment is made direct from the patient to the specialist, and that any other arrangement is severely discouraged. On the other hand, the legal profession adopts a different rule, and looks to the solicitor for payment, leaving the arrangements for payment to be made with the client by the solicitor. This was the method that was first adopted by the advertising agents when they were agents for the newspapers and no more. The advertiser made his arrangements with the agent, and the agent made his own arrangements with the media. This was eventually changed, because it had to be, and the reason why it had to be is expressed thus, in one well-known book on advertising. It says:

> "In the early years, the agents' opportunities for graft and sharp practice were literally unlimited. The newspaper rates were what the agents said they were and the advertiser had no way of learning how much of the money he paid actually found its way back to the publishers. Many agents acted as wholesalers of newspaper space, bargaining down the publishers and then selling to advertisers for whatever the market would bear."

This state of affairs is more crisply described by a contemporary would-be reformer of the system in advertising, published in 1860. He described it as:

> "The principle of getting from a client all he could be induced to pay, and offering the publisher as little as he would consent to accept."

This is of interest purely to the legal profession, but I could not forbear from remarking on it, and if the medical profession will bear with me, it is a matter on which the legal profession may surely congratulate itself, because, when you look at it, it is actually exposed daily to the same temptations as beset advertising agents in the 1840's. If you transpose the passages which I have just read into legal terms, they are most alarming. In legal terms, the first passage would read thus:

> "In the early years, a solicitor's opportunities for graft and sharp practice were literally unlimited. The barrister's fees were what the solicitor said they were, and the client ordinarily had no way of learning how much of the money he paid actually found its way to the barrister. Many solicitors acted as wholesalers of barristers, bargaining down the barristers, and then charging clients whatever the market would bear."

The second passage would read:

> "The principle of getting from a client all he could be induced to pay and offering the barrister as little as he would consent to accept."

As I say, this is a matter on which the legal profession may justifiably congratulate itself that it has shown no signs of succumbing to this temptation.

To continue with the advertising agents, the next great figure was the figure of Mr. N. W. Ayer, who, in 1875, changed all that. The honest Mr. Ayer invented the open contract, and became an agent for the persons who wished to buy space from the newspapers who wished to sell. Then things went a step further, and we found agents getting paid by the client, and also getting remuneration from the newspapers. This golden age lasted until 1893, when the newspapers put a stop to it. The way they put a stop to it was this. They simply got together and said, "Very well, we will pay you your commission at such and such a rate—10 per cent—but we will give it to agents and we will give it to no-one else. And if we ever catch any of you agents, who we hereby accredit, giving any of that 10 per cent back to a client, well, you will not be accredited any more". That system established itself in England and it is also the process by which advertising agencies in U.S.A., England and Australia are remunerated to the present day.

Even now, there is one point on which the industry of advertising takes on some resemblance to an organised profession,

in as much as the advertising agencies have contrived to establish a form of remuneration (to their own substantial advantage) which they have by and large managed to prevent any of their practitioners from contravening. However, this was not the final development of the relationship of the agent to the advertising media. The really momentous development did not take place until 1898, when Albert Lasker went to work for the advertising firm of Lord and Thomas.

In those days, a great deal of the advertising was done by proprietors of patent medicines and they, like any other advertiser, gave the agent the material and the agent simply passed it on to the paper. Occasionally an agent would help a client compose an advertisement, and for this purpose some of them held a small staff of perhaps one copywriter and one artist. This is the staff that Lord and Thomas had when Lasker came there. At that time they had one artist earning 35 dollars a week and one copywriter earning 40 dollars a week. But when Lasker came, he started advertising as we know it. He hired the services of Joseph E. Kennedy as a copywriter and paid him 16,000 dollars per year, which seemed a stupendous amount until you were informed of Mr. Kennedy's qualifications. Mr. Kennedy was, up to that time, the chief copywriter for Dr. Shoop's Restorative. From that time onwards, Lord and Thomas prospered—everyone did the same thing—and the transition was achieved. It meant that from then on the advertising agent, for a fee, took the responsibility of preparing the copy of the advertisement. That is to say, the advertising agent is a person who persuades on behalf of another, for a fee. The advertising agent is, in the truest sense of the word, an advocate. It is perhaps interesting to make comparisons between the ways of the hired persuader in the market-place and the hired persuader in the courts.

Advertising is the subject of attack. As we have said, the economists are not keen on it, the lawyers deplore it, those concerned with aesthetic standards are horrified by it. The advertising man always finds himself on the defensive with the result that he is forever seeking reassurance. This search for reassurance seems to have taken two forms, to seek for his craft the status of a science, and for his calling the status of a profession.

Claims are frequently made that advertising is a science. This claim was first made in 1923 by the great Claude Hopkins, who made the claim that advertising was scientific on the basis of split runs. He claimed to have analysed what would sell and

what would not, even claiming to be able to specify what particular words should always be used at the beginning of an advertisment. Hopkins is the man who is known in advertising circles as "the Schlitz Beer man". Schlitz beer was the same as any other beer. It tasted the same, and it had the same amount of alcohol as any other beer, but for some reason it was sixth on the list of beers as far as the sales were concerned. Hopkins undertook the account and brought it up to first place, and this was the way he did it. The first thing was to make himself familiar with the product. He started out with what the lawyers call "having a view". He went to the factory and he minutely inspected, and had explained to him, every phase of manufacturing—the method of treating the hops, the fermenting the yeast—but none of these stirred his inspiration. That did not happen until he got to the bottle-washing department. He was fascinated by the fact that the bottles were washed with steam. The people showing him around said, "How on earth else would you wash them—everyone washes his beer bottles with steam", but Hopkins pointed out it did not matter what everybody else did, what mattered was what Schlitz Beer said it did. The result was the historic campaign in which Schlitz Beer said it was the most pure beer because the bottles were "Washed with Live Steam". That was a true claim. Of course, what was not true was the unspoken inference that no other beer bottles were washed with live steam. But that is the essence of the advocate's trade—it is no part of his function to put the case for the other side. If the advertising agents had stuck stoutly to that concept they would be far nearer to achieving their aspirations for professional status than they are now. But, they strayed from the path because (curiously enough) they tried to achieve too much. They exhibited a tendency, which other professional bodies have, from time to time, of making sweeping, morally uplifting statements without regard to the consequences of putting them into practice. The particularly uplifting statement which the agents were foolish enough to make and adopt is known as "The 1915 Baltimore Declaration". The agents got themselves together in Baltimore in 1915 and, in an evil hour for their calling, decided to adopt as the basis for their profession the slogan, "Truth in Advertising". This was an incredibly foolish move, because they thereby put themselves in the position of accepting responsibility for every rogue, every huckster, every adulterer of products and every plain cheat that liked to pay them money to prepare advertising matter for their

products. The legal equivalent of this would be for barristers to adopt the slogan, "Truth in Advocacy", meaning thereby that they accepted responsibility for the truth of everything clients said.

The search of the advertising profession for professional status seems to concentrate on one point. They are mad on the subject of ethics. They reason like the natives in New Guinea waiting for the cargo boat. They observe the office routine of the white man. They observe that it is followed in due course by the arrival of the cargo boat. They conclude from this that if they perform the ceremony of hitting a typewriter the cargo will arrive for them.

In giving this illustration I intend no slight to advertising agents as such. Every doctor and lawyer knows that this manner of reasoning is common enough in his own profession. Advertising agents think it would be wonderful to have a profession. One of the things they know most about professions is that they have ethics—so they conclude from that, ethics are splendid things and the more ethics you have the nearer you are to being a profession. Not only that. They confuse ethics and morals. They assume that professional ethics exist for the public benefit. Such a notion, of course, is simply not true. Professional ethics may, in the long run, have the unintended and tangential effect of conferring a benefit on the public but such benefit is by no means the *raison d'etre* of professional ethics.

To give you an example, there is no more heinous offence known to the professional than the person known as an "ambulance chaser" seeking out a person with a claim to persuade him to retain you to pursue that claim. In most States of the Commonwealth there is an Act derived from the English Act, The Public Authorities Protection Act. These Acts provide that if you are injured by a public authority, you have to give written notice to the public authority within six months or you cannot bring your action against them. In Victoria, it is not the same—there is a dispensing power. But it was not always so and it is still not so in New South Wales.

I know a man in New South Wales who came to work for the Government Railways, and was injured in the course of his employment in circumstances which would have entitled him, probably, not to mere Workers' Compensation, but to the full amount of assessed damages. Unfortunately, he was so badly injured that he was taken to hospital for a good deal longer than

six months, and, not speaking any English, it was difficult for him to become aware of the requirements of the Act, with the result that he gets no benefit from his legal right. Here is something that would have been prevented by an energetic ambulance chaser. Not that I am defending ambulance chasing: I am merely concerned to point out that ethics has not anything to do necessarily with benefit to individuals, or for that matter with direct benefit to the general public.

Advertising agents put out brochures about ethics in a far more expensive form than we ever do, citing far loftier precepts than we ever profess. These are to be found in every country. The English one has as its preamble surely one of the loftiest aspirations that ever found its way into human speech. It declares, "That we are all required to be clean, honest, truthful and legal". For brevity and moral force, I am sure you will agree this begins where Kipling's "If" left off. In this pursuit of an unattainable truth, the advertising agents produce ethical statements such as this: "Scientific or technical claims or statements which are not adequately supported by accepted authority, or which distort the true or practical application of a statement, pronouncement or discovery of a professional, scientific or technical authority, should not be handled or prepared."

By that, they have committed themselves to the enforcement of a standard which they cannot possibly have sufficient knowledge to be able to apply. How much better if they had adopted a professionally ethical standard in the true sense. A professionally ethical standard in this sense is perhaps nowhere better expressed than in that passage of "Major Barbara", in which the characters of Shaw discuss this very problem. As you remember, "Major Barbara" deals with a professor of Greek who married the daughter of an armaments manufacturer, and was admitted to partnership in the firm. In a scene in which the discussions are taking place which led to this highly satisfactory result, we find the professor in the position that he is very keen on the daughter, and not entirely repelled by the father's millions, but somewhat worried about the morals of the father's trade. The prospective mother-in-law makes a very sensible observation, saying, "There is no moral question in the matter at all, Adolphus. You simply must sell cannon and weapons to people whose cause is right and just, and refuse them to foreigners and criminals." The armament maker says, "No, none of that. You must keep the true faith of the armourer, which is to give arms to all men who

offer an honest price for them, without respect of persons or principals, to aristocrat and republican, to nihilist and Czar, to capitalist and socialist, to Protestant and Catholic, to burglar and policeman." That is, and must be, the ethics of any profession, and it is by applying it to the unfamiliar field, perhaps, that Shaw, as was his way, points the matter up. It is of the essence of belonging to a profession that you are not concerned with the ultimate result of your actions. But the advertising agents are or think that they should be and it must be admitted that they impose or would attempt to impose some very severe restrictions on their members. For example, if advertising copy is an art, it would be simple enough for people preparing it to identify their efforts in some small way to call attention to the fact that they did it, but that is not allowed. The code says, "Members shall not include their own names or their initials or symbols, or in the case of joint members, the name or the initials of the firm or any of its members, or symbols, in advertising prepared or handled for advertisers, but such advertisement shall be wholly devoted to the service of the advertiser." They are not allowed to identify themselves for us in the performance of their craft. The legal equivalent of this would be to require every barrister to conduct his cases in Court with his head in a bag.

Finally, it had been my intention, if time permitted, (which it does not) to discuss another consequence of this sortie on to the wrong track by the advertising agents, by pointing out that they have also committed themselves to answer for their results by means of their marketing research services, and they have themselves to blame. This is something that the traditional professions have studiously avoided. No-one really knows, in the case of a profession, whether the efforts of its practitioners have, in any particular case, been successful at all. That is the beauty of it. There is a rough working rule in the case of the traditional professions, of course, that if a patient is cured, or a cause is successful or a battle is won, then the strong presumption is that the talents of the physician, the barrister, or the general had something to do with it. On the other hand, if the battle is lost, or the cause is unsuccessful, or the patient dies, then this is manifestly caused by the ill-health of the patient, the injustice of the cause or by the enemy's overwhelming superiority of arms and equipment.

PROFESSOR LOVELL:

Tonight I am going to deal with one restricted aspect of the ethics of advertising. It concerns the advertising of the Pharmaceutical Industry directly to the medical profession. The relationship between these two bodies is rather special because neither the navy, the army, the church nor the law is so subjected in its practice, at any rate overtly, as is medicine to the persuasion of advertisements.

In order to understand the context of advertisements directed to the medical profession it is necessary to have some understanding of the factors which influence doctors in their choices of treatment. At the outset it is to be appreciated that the development of methods of treatment has probably exceeded in its scale the development of any other aspect of medicine in the past 25 years. It is against this background of revolutionary changes that we have to consider the factors which influence doctors in their choices.

The scientific basis of knowledge about treatment is taught in the undergraduate medical course. At the time of graduation the fledgling doctor can know wide general principles of treatment, but only a few remedies of the commoner sort in any kind of detail. Major factors influencing a doctor in his detailed choices of treatment are therefore ones which start to operate from the day he graduates.

In general, choice of treatment is influenced by the result of experiment, by experience, and by the persuasion of authority in one form or another.

For many reasons few doctors base their choice of treatment on the results of personal experiment and I am not going to discuss this further.

As we get older we tend naturally to base our choices of treatment on what we call our "experience". Experience in evaluating treatment is a complicated matter. In general, it is an excellent basis for choosing a treatment if a situation is involved in which a highly predictable state in an illness is clearly and remarkably altered. But in many, and particularly in chronic illnesses, such a clear-cut situation does not exist. Thus a big problem often facing the doctor is to discern from his experience whether many drugs, old or new, have any therapeutic value at all. Another difficulty arises in distinguishing differences between different but related drugs in their desirable and in their toxic effects. Differences may be quite marginal, though

quite important, and careful formally-designed experiments using many patients are necessary before conclusions can be reached as to the benefit of one preparation as compared with another. One of the big problems in medicine today is to distinguish between such new marginally different drugs—"me-too" drugs as they have been called. As may be imagined, these are of great importance to the pharmaceutical industry, because different firms tend to make their own variants of a parent compound. Having in mind the potent effects of placebos and suggestion, peresonal experience can contribute little to the solution of either of these sorts of problem.

For the individual doctor, then, personal experiment and really critical experience are likely to influence his choice of treatment only in small degree. His choice will be influenced by rather imperfect experience, and mainly by authority.

Authority operates in various guises. Consider first the matter of leeches in France in 1824. In 1824 about 2 million leeches a year were being imported into France and appeared to satisfy all demands. Ten years later over 40 million leeches a year were being imported, though there was no striking change in the population during that time. This enthusiasm for leeching has been attributed to the immense influence of one particular medical teacher, a surgeon called Joseph Victor Broussais. Like other surgeons one can recall, he knew what was what by way of disease and exactly what to do about it. Diseases were due to irritations and were cured by being cut out or off. Those irritations which could not be cut out or off were cured by leeching. This is an example, often repeated since, of a choice of treatment being largely influenced by the authority of a very persuasive teacher.

As a modern commentary on this problem of the leeches, consider the number of prescriptions in millions per annum written in Australia for hypnotics as pharmaceutical benefits between 1960 and 1964. The annual rate of prescription has increased three-fold from about 1·9 million to 5·5 million. A major contributing factor has been the increase in prescriptions for amylobarbitone. These have increased sevenfold. If we assume that each prescription for leeches in France from 1824-33 involved a pharmaceutical benefit of 5 leeches, the rate of increase in prescriptions for leeches closely resembles that for amylobarbitone in Australia in the 1960s.

There are several possible explanations for this phenomenon

of the hypnotics apart from the operation of authority, but my purpose in making the comparison is to suggest that in making our choices of treatment, perhaps we still make some which in retrospect, as in the matter of leeches, may be hard to rationalize and we are probably as susceptible to persuasion as were our forebears.

Another form of authority is fashion. It operates in all sorts of ways. It is sometimes set by a famous recipient of a treatment. The crop of appendices harvested in London after Sir Frederick Treves' operation on King Edward VII, just before his coronation was due, was reported to be enormous. Thanks to Time Magazine, most people today learn what treatment the President of the United States has for his coronary occlusion, and the remark of a patient or his relatives suggesting a particular fashionable treatment, may not be without influence on the decision made by his doctor.

I do not know to what extent original papers published in medical journals, giving scientific experimental evaluations of treatment, influence the choices of doctors generally. Most critical trials make fairly heavy reading and I suspect that most of us read the summaries and are likely then to be strongly biased by our previous opinion of the authors or the place where they work.

The great teacher alive or dead, fashion, and papers in learned journals are some of the main authorities. But probably the largest authority influencing doctors in their choices of treatment is the pharmaceutical industry itself.

One must preface one's remarks by saying how deeply indebted we are to this industry for the enormous amount of work it does in preparing and screening potentially valuable new substances and in modifying old ones. Having said that, one must remember that they are in business for their own health and not for other people's and their health is directly related to their profits derived from sales.

In order to sell something you have to advertise it and in order to advertise successfully you have to study your potential customers. In this context it is the doctors who are the customers. There is no reason to suppose that the principles involved in persuading doctors to prescribe drugs differ basically from the principles involved in persuading them, or anyone else, to buy clothes, cigarettes, trailers and boats to put on them, and all the particular status symbols which figure in our society.

In relation to advertising generally, it has been said that "one of the main jobs of the advertiser in the common conflict between pleasure and guilt is not so much to sell the product as to give moral permission to have fun without guilt". In pharmaceutical advertising the same thought is often discernible. The function of the advertisement or of the detail man from the pharmaceutical firm who calls personally on the doctor is often to give moral permission for the doctor to have fun without guilt: to have a go because of a plausible suggestion of possible benefit to the patient. I need hardly remind you that the proverbially overworked and tired doctor, by virtue of being tired, is very peculiarly vulnerable to suggestion if students of brainwashing are to be believed.

It is against this background of factors influencing doctors in their choice of treatment that we have to consider the ethics of the advertising of pharmaceutical firms to the profession.

I should like now to show you some examples of this advertising in action. In looking at these slides* I ask you to consider in each case to what extent the advertisement is, or is not, ethical. When you see the nature of some of the methods of persuasion you can but admire the way in which our minds have been explored. At the same time you may perhaps wonder if the 6 years' effort put into the medical course is worthwhile if some of these efforts really do persuade us.

What frame of mind must a doctor be in to be persuaded to try a remedy, for instance, which has, as you see, remarkable effects, including "increased capacity for performance". What sort of performance is not clear. It contains a collection of vitamins, none of which is lacking in the Australian diet, and in heavier type, a complex chemical substance. When I first saw this advertisement I asked a Professor of Pharmacology what this substance was. He said he didn't know, he guessed it might be a tranquillizer, and anyway he thought it would be illegal to sell it in Victoria.

Another advertisement advocates in slightly extravagant terms a mixture of three potent drugs. Any final year medical student, at any rate, I hope, from Melbourne, would be able to tell you that it is quite wrong to give mixtures of drugs of this sort. Each of these ingredients needs prescribing in a highly individual dosage and the three ingredients seldom need to be prescribed

* A series of slides illustrating advertisements was shown.

together. Is it ethical to advertise such an unsuitable and even potentially dangerous concoction?

The next one presumably persuades by its artistic merit and humour and so does the next which is one of my favourites. These are both parts of a huge campaign to try to persuade doctors to prescribe some generally unnecessary drugs in peptic ulcer. When this one appeared, I was aware that the active principle had a potent pharmacological effect and I wrote to the Medical Director of the company producing it to ask him for references to published evidence showing whether or not it had any effect on the actual healing of the peptic ulcer. He sent me four references, all in obscure journals, and in none was a study reported which permitted any clinical conclusion at all. Is this advertisement ethical?

Another presents a "new magnitude in steroid therapy". It is not thought necessary to indicate what the steroid is, though steroids are some of the most potent drugs in the pharmacopeia. They are almost all "me-too" drugs. Is this ethical?

Here by contrast is really persuasive graphic art, and as a token of recognition of the doctors' intelligence, (the 6-year course is vindicated), at the bottom left-hand corner in very small print needing magnification to see it is the chemical name of the drug. This, of course, makes its action and its toxic effects clear to you all—or does it? Is this ethical?

How ethical is this advertising? My personal view is that the advertisements of pharmaceutical firms to doctors are a proper part of professional life. I think it is arguable that ethics do not come into this at all. I believe drug firms should be able to approach the medical profession with no holds barred. Certainly, some of their advertisements are patently stupid. Some contain misleading half-truths. Some advocate the use of substances whose efficacy is unsupported by valid experimental clinical evidence. I believe, however, that a profession which is worth its salt should be sufficiently learned to be discriminating in its acceptance of advertised claims. You will notice that I said "should be", because I am by no means sure that as a profession we have achieved the level of discrimination which is needed. Apart from a lunatic fringe, which all professions have, some quite ordinary doctors are more suggestible than others. But if there is a fault, it is not to be corrected by putting ethical fetters on pharmaceutical advertising. The campaign being extended year by year to persuade doctors toward pharmaceutically, if not therapeutic-

ally profitable lines of treatment, is to be regarded as representing a proper and straightforward challenge to post-graduate medical education.

In summary, I take the view that in this example of advertising directed to a professional body, the question of ethics is unimportant. The professional man's critical standards should lead him to be sufficiently discriminating in his selection of guiding authorities. I am sure that, if they were subjected to the same pressures, this would be the response of the navy, the army, the church and the law!

Discussion

SIR CLIVE FITTS: Mr. Chairman and gentlemen, I am reminded of the story of Proust, the French novelist, who, when he went to Paris was enchanted by a French Countess who attended the salon of a French Duchess where brilliant discussions took place. He was so enchanted by the conversation that took place until, one day, the Countess seemed to be at loggerheads with the Duchess. After the conflict had gone on for a while, the Countess said to the Duchess, "You told me that the subject of the conversation was to be incest", and that was the first time it was known there was a pre-arranged subject for this conversation.

Even though I arrived unbriefed, there was no conflict about the nature of the subject this evening. There was a slide shown this evening by Professor Lovell from a certain firm. A week ago at the meeting of the College of Physicians here, we had a very interesting and entertaining paper on circadian rhythms, and if the legal profession sitting near me do not already know what circadian rhythms are, I might say, I would not have known unless it was through that firm, who published a broadsheet about it. The broadsheet had gone much more deeply into the references than the person who gave the paper. At first sight, it was hard to see what that firm was going to gain with the discussion on circadian rhythms, but out of this subject evolved a disease known as asynchronosis, and I suspect in a year or two their product will be the treatment.

One of the interesting sidelights of advertising is the way the "ethical" firms, so-called, engage high-class research workers, with great integrity, who are responsible for the discovery, to our benefit, of a great number of new substances for the treatment of disease. This often seems to me to involve the research worker in the material ends just as much as the physicist must become

involved in his remote world, due to the fact that the atom bomb will be the end of the world and the work he was engaged on

Mr. McHugh, in his delightful paper, mentioned something out of "Major Barbara", which I hope struck home to everybody. It was very true what he said our duties are as members of both the medical and legal profession. The other thing which arose out of Professer Lovell's equally delightful paper—in the process of teaching students the necessary and vital function of passing their final examinations, we should also teach them to be critical of mind.

I should like to thank both speakers for their discussions.

DR. KELLY: I discovered that in the recorded hearing of Senator Humphrey into the drug trade, and before him, Senator Estes Kefauver (who recently died) he revealed a new form of advertising. There was a highly reputable firm (or one would have thought so) called M.D. Publications founded in America in 1951, which produces two chief journals called "Anti-biotics in Chemo-therapy" and the "International Journal of Chemo-therapy". Somebody tipped Kefauver that Henry Walsh, Ph.D., the Chief of the Antibiotics Division of the big health organization in America, which proves all the new drugs, had become wealthy by $250,000. Therefore, Kefauver subpoenaed Walsh, but he would not divulge the name of the individual who paid him the $250,000. Kefauver died before he could prosecute this Ph.D. It was revealed by Senator Humphrey that he had broadly solicited a number of drug firms, saying he had evidence that this or that drug was effective for headache and constipation and things of that nature. The Ph.D. had also organized a number of other M.D.s who were prepared to supply him with what was known as "graphite data"—graphite data being prepared by a lead pencil, or, it could be called today, "ball-point data". This doctor paid one of the M.D.s who supplied the graphite data $25,000 dollars for giving this advertisement for a drug for constipation, etc., and he became quite wealthy.

Another instance that was revealed was the surprising ghosting that goes on in America. In a number of journals, so-called scientific articles have actually been written by an agent of the firm which produces the drug.

DR. P. G. JONES: Mr. President, I would like to present another aspect of the conflict between ethics and advertising as it affects a learned society which embarks upon the project of

publishing a journal. With the economics of printing as they are today, it is impossible for a learned society to start a new journal without depending, to a very large extent, upon its advertising income. As one of a small group of four, who have been charged with this responsibility within the last 12 months, it may be of interest to those here tonight to know that, with a society having a membership of about 200, and an overseas subscription from a further 200 members, the printing costs of a journal of 68 pages, and about 500 copies, amount to nearly £700. With the advertising income obtained from a matter of some 34 pages in that 68-page journal, we can just about cover the printing costs, but without this support, the whole project, despite initial benefactions, would be impossible. How shall we feel in a decade if one of the things we accept for advertising turns out to be another thalidomide?

DR. G. SPRINGTHORPE: It was made clear by Professor Lovell that all these advertisements that he referred to, and, of course, there are hundreds of others which time did not permit him to refer to, some of which are even funnier than the ones he showed us, are claimed to be ethical by their vendors, because—and this is a fact—they claim that they only advertise within the profession. This is the qualification which in their minds, and, perhaps, in ours, enables them to claim that it is ethical.

MR. S. ABEL: Mr. Chairman, in the field of ethics, the situation has occurred to me, while sitting here enjoying the talks, of a man who this year came before the courts, because he set himself up as a person who could cure leukaemia. It seems, apparently, that at the outset the defence was going to take the view—though, of course, this may be an injustice or bad reporting—that because he honestly believed his alleged cure might cure leukaemia, therefore he was innocent. If such an argument can be put forward by lawyers or members of a profession in a country in a trial which arose out of a well-recognised set of tragedies, this, of course, is a very serious intrusion into the combination of ethics, advertising and medicine. Should, by any fluke, a verdict be reached to say that if a person thought of a cure, however untrained he was to have these thoughts, if he thought that his cure was a cure, he was therefore innocent, and this was accepted as a legal standard, then the whole edifice of any sincerity in that field, undoubtedly, would crumble. I would be interested to hear the views of other people on it.

To go from, not the sublime, but the serious to the ridiculous, I remember in Cairo, during the War, reading in a column in a French paper about a research doctor who died in poverty, and left a note saying "All is lost". He discovered a cure for which there was no illness! I think today he would probably be circularized regularly by some of these public relations firms, saying "You find the cure. We guarantee to find the illness".

MR. P. D. PHILLIPS: Mr. Chairman and gentlemen: Leaving aside the vast opportunities that the medical profession have had in developing a cure, and coming back to the problem of advertising and the limitations or controls on it, I think it is a matter of extraordinary difficulty. I had to try and do this earlier this year, and I launched forth into what Mr. McHugh would call, Pecksniffian advertising superiority of the worst kind.

I was asked were there any forms of promotion of alcoholic liquor which were matters of public danger. It is an odd kind of question. I have never found out who promoted it, but fundamentally I came to considering whether unlimited advertising did result in public dangers, and if it did, was there anything we could do about it, and what were the dangers of doing things about it? It was a very interesting essay, and I am inclined to think that the kind of problem which Professor Lovell raised is relatively simple as compared with the problem of the impact of public advertising upon completely un-equipped individuals. As he says, if the doctors are not too tired and have done an extra year, they ought to be able to resist these skilful and special advertisements, but, what about the effect on the public of the advertising of drugs, liquor or articles and substances which can be pretty dangerous? Is the community justified in imposing some limits? If so, what are the canons or standards which ought to be imposed, or is this such an interference to freedom of speech and freedom of trade that the community ought not to embark upon it? Shaw did put his finger on it; it is just the two points of view. Lady Britomart said, "You only sell to the right people", and of course, the whole point of the jest was, "Who knows the right people?" and they said, "We will sell to all the people—we are sure to get the right people in that way—it is the luck of the draw". These are the two issues. Can you draw some standards or rules?

With regard to public advertising of alcoholic liquor, you could and should draw some standards. One of the curious things which was pressed on me by those who have been working in

this field for a long time, and which I had not realised was that this highly dangerous tranquilliser tended always to be advertised by picturing the consumers in very glamorous surroundings, and they were nearly always young people. If you could get a well-known sportsman, so much the better, but you did not have to bother too much about the well-known sportsman—it was good enough to get an attractive girl having dinner in glamorous surroundings, or at a party, or just leaving a party, maybe with a suitable escort. It had not struck me there was anything particular about advertising of that kind. It seemed a normal way to attract attention. I must confess, I have looked at a good many car advertisements which have a girl in a bathing costume beside the car. You do know they are selling cars, but you do not stop to think what the girl in the bathing costume would relate to. The trend with liquor advertising is you build up a *background of ideas.* If young people want to be glamorous and want to be in the swim and take part in life—in short, if they do not want to be left out, then they must drink with everybody else. So, at the stage they are beginning to decide whether they will take, or how much they will take, there is this enormous pressure of public suggestion that if they do not partake, they will be passed by—they will not have any social success, and I suppose, with the girls, that they will not have a chance of getting a husband. All this builds up enormous pressure.

When you talk about advertising of drugs to the doctors, it is quite obvious, from what Professor Lovell has said, this is quite a dangerous problem even when the advertisements are directed to a highly-educated group, who ought to know better, and who, because they are tired, busy or off-guard (whatever it may be) will be led into it. What happens when you get into the wider sections of the community who are less equipped to resist and who are fair game? I found this puzzling. In the end I did express one view—that the young are entitled to be protected. At the stage of their lives, when they are making important decisions and public pressure is on them, and it is strong enough in any event, the community ought to come in and say, "Hands off—give them a chance to make up their own minds". But I think the community ought to stop advertising what may be very dangerous material or a dangerous commodity. Of course liquor can be advertised, but do not aim the advertisements at the young. Do not create the kind of unconscious background in which serious judgments and proper deter-

minations they have to make are biased and disturbed. This is one of the things which brought me face to face with the question as to whether the community is justified in interfering with advertising, and if it is can you raise any canon? Is it possible?

For instance, it was said that everybody ought to agree that truth in advertising is desirable, but against that it was said, "What do you mean by truth?" If you have big advertisements saying, "Beer is good for you", can it be attacked on the grounds it is not strictly true? Is it fair to advertise wine by exhibiting grapes? By the time the grapes have turned into wine all the genuine food quality of the grape is lost—but the wine is better, I agree. However, this statement is misleading.

I did not think there was much in this form of advertising, but these extreme examples show how difficult it is to draw distinctions when you deal with any particular aspect of advertising. If you say people can commend their goods, this is part of the very competition of the market. Can you place a limit on this? I have a nasty suspicion that any attempt to impose rules relating to truth in advertising will break down.

I think the kind of problem that Professor Lovell raised with regard to the doctors is only one limited aspect of a problem that arises with regard to a good many sections of the community and a good many of the commodities sold to it. I certainly think that this particular drug which we are consuming at the rate of 22 gallons a year per head, man, woman and child, is one of the drugs, the advertising of which we might have a good look at, even though it might not be as powerful as some of these other drugs, nearly everybody takes this drug, so the total effect may be nearly as bad as some of these esoteric advertisements that we have seen on the screen tonight.

PROFESSOR R. R. H. LOVELL: I would just like to take up two points, upon each of which, I am sure, we could spend a whole evening, one raised by Dr. Kelly, and the other one by Mr. Phillips.

First, drug firms supporting research. I doubt if anyone, unless actually involved in this game personally, has any depth of insight into the enormous support that drug firms pour financially into research. You are, I am sure, aware that they also pour an enormous amount into their own research, and I think it is true to say that many of the greatest advances in drugs will come from within the industry from now on, because the univer-

sities are non-starters so far as developments are concerned. The Universities' hope will still be in the small school with the one or two very bright individuals to strike a completely new line. There is never any hope of developing this to any great extent from now on, and increasingly, because they can buy first-class people, the drug firms will themselves be the initiators of completely new and revolutionary drugs. I think we have to accept that. Furthermore, not only do they pour money into their own research fields, but they also are willing to pour money into the universities.

Most of us concerned with medical research live in a sort of "love-hate" relationship with the drug firms. We know that there are certain things that we desire to do which they can help us to do. We are also very conscious of the problem of the loss of academic freedom which could conceivably be entailed by accepting money for a tied project, that is, money channelled to a department, or to an individual in a university department to do a job on a certain drug.

As I see it, you would have quite a job defining advertising alcohol. You would have quite a job defining the age group that you were trying to protect, and then you come right up against the difficulty that it is not just alcohol. It is drugs. It is cigarettes. You might also say, if you look at some advertisements that it is sexual activity that is being advertised quite often, and there are so many subconscious contents of advertisements that one would have to go into, that I doubt if you could ever really define. I think, from my reading about advertising that an enormous amount of study, particularly of a psychological content, of advertising has been done, and, because of its complexity, I personally cannot see a way ahead here by imposing restrictions. I come back, just in brief, I think, to the same answer that I gave in relation to advertising to doctors. Just as I believe there is a challenge to post-graduate medical education here that we have to face up to, and just as the advertising firms advertise continually to members over their post-graduate years, so we, and by we, I mean some pertinacious body in medicine, has to run just as continued, just as skilled and just as planned an education scheme to counteract this, so I believe it is just the same in the wider problem. My answer here is not to restrain, but it is to counter this sort of advertising, probably using exactly the same skills as the advertisers themselves use.

MR. E. C. MCHUGH: If I had any point to make in what I said, it was this. That what should be done by advertisers or owners of media and what should not be done should rather be a matter of law than a matter of ethics. In fact, I have here 75 pages of typed script, for which I am indebted to my learned friend, Mr. Kimm, which is a list of all the Acts of Parliament relating to the various Australian states regarding advertising. There is ample machinery to control advertising, but there does not seem to be much motive for anyone to enforce it. There have only been four prosecutions that I know of, and they have all been of land sales agents and used car dealers.

With regard to Mr. Phillips' misgivings on the subject of advertising and whether it should be stopped wholly or in part, from what I can gather in the reading I have done, legislators regard advertising as something like strong beer or gambling —something which it is impossible to approve, but unthinkable to suppress. In such a situation, the legislators have one invariable method of dealng with it—they put a tax on it.

The first advertising tax went on in Britain. They pay ten per cent tax on television advertising now and I think the economists are even now working on the economics equivalent of production—"How to put a tax on the consumer".

Finally, as regards the effects of advertising intoxicants, about which Mr. Phillips again feels misgivings, I had meant to point out that one of the stock arguments of advertisers in America is their argument with regard to beer, because they say the effect of advertising is exaggerated. The consumption in the United States has, over the past few years, fallen and is still steadily falling, and the even more than considerable resources of the beer industry have been poured without stint into lengthy advertising to stop this fall.